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Competence in Labware

Labware range

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VITLAB 
Competence in Labware

Welcome!

Our extensive range of products provides you with optimal support in your laboratory work, in a wide variety of application ranges. Regardless of whether your work involves volume measurement, sampling or storage: our aim is to develop, manufacture and provide you with products that will facilitate your work whilst continuing to ensure that you achieve perfect results.

This catalog includes all our products, as well as all the relevant, important information. In order to facilitate things for you, we have also divided our products into application ranges.

The different application ranges, such as titration, dosing and pipetting, now include all the VITLAB products that you require for these tasks. Consequently, the chapter on volume measurement includes volumetric flasks, graduated cylinders, graduated pitchers and other plastic products that facilitate your work and help you to achieve precise results.



Our wide range of products includes labware for almost all conceivable areas of application. However, you also have the option to have plastic labware made to measure and manufactured according to your needs. For example, you have the opportunity to determine the geometry and thickness of the various bottles and beakers that you require for special tasks. In addition, you also have the option to choose your own impressions, your own graduation or a special label. Labware that bears your company name and logo is particularly effective for advertising and marketing. Further information is available in the VITLAB Promotional chapter

On request, VITLAB also offers fluorination, which makes the plastic surfaces even more stable when they come into contact with the many different organic solvents. Our state-of-the-art production facilities also allow us to manufacture and package sterile products in a controlled environment similar to that of a clean room.

Many things are possible – do not hesitate to ask what we can do for you!



VITLAB

your partner fo

Tradition

VITLAB represents 100 years of tradition. VITRI GmbH & Co. KG was founded in Mühlital (Germany) in 1908. In 1989, the laboratory division was established as the independent company, VITLAB. Today, VITLAB is a leading manufacturer of liquid handling instruments and performance plastic products for one-time or long-term use. We develop and manufacture these products at our own production facility.

Quality

Independent inspections and routine internal audits guarantee the effectiveness of VITLAB's quality management system throughout the company, from development to shipment. As a result, the phrase 'Made by VITLAB' has become synonymous with quality. VITLAB has been certified since January 1994 and is currently DIN EN ISO 9001:2000 certified. Environmental protection is also firmly anchored in our corporate philosophy and VITLAB has been DIN EN ISO 14001 certified since May 1999.

r reliability

Service

Thanks to its intensive partnerships with distributors almost everywhere in the world, VITLAB can offer reliable availability of its products, sound advice and seamless logistics. Our qualified product training sessions provide information and tips on using our laboratory products and liquid handling devices. Just in case, our trained repair service is on hand to keep downtimes to an absolute minimum.

Advantages

It is difficult to imagine a laboratory today which does not make use of the wide variety of plastic materials. There are many good reasons for this: High quality plastic materials show a significant level of resistance to chemical substances. Superior break resistance means that the products can be used for a long period of time. Danger of injury in the laboratory is greatly reduced. Light weight materials make handling of the equipment easier. And last, but certainly not least, laboratory equipment made from plastic materials is less expensive.

Fluoro plastic PFA

Extremely high standards are set for the laboratory products in trace analysis. VITLAB is one of the few manufacturers that uses fluorocarbon PFA in this area of application. Laboratory products that are manufactured using this high-performance plastic guarantee a high level of long-term stability for standard solutions.






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For your information

Please understand that technical specifications, catalog numbers and designs may change during the validity period of this catalog. The illustrations that are used are for informative purposes and the details may vary from the description. All measures, with the exception of exact tolerances, are understood as approximate values. Please take into consideration that the actual testing and measuring results may be influenced by a variety of factors that are beyond our control. Therefore, you should carefully check ~~the~~ prior to transferring it to the particular application in question.

The packaging units (SP) correspond to the minimum order quantities. All the relevant information is also available on the Internet at www.vitlab.de.

If you require any further information, please do not hesitate to call us.

VITLAB , VITLAB[®], maneus[®], pipeo[®], VITsafe[®] are brands of VITLAB GmbH.

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VITLAB

Customer Service

Your personal point of contact

Our Customer Service staff is at your service to provide you with competent answers and advice to all your queries and questions concerning offers, orders and deliveries. Our Product Management and Sales Team are at your disposal at all times – also “on site” – with any technical information or assistance that you might require for your application.

VITLAB GmbH Customer Service

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Speedy deliveries

VITLAB products can be ordered from distributors of laboratory equipment. A list of our authorized sales partners is available on the Internet at www.vitlab.de. Or simply ask us. Our state-of-the-art logistics at our plant in Grossostheim ensures high levels of availability for all the articles listed in the catalog.

Clear product statements

Our aim is to provide you with a clear and comprehensive presentation of all the product information that is relevant for you. We have used the following symbols in order to allow for quicker orientation:

-  product included in the VITLAB catalog for the first time
-  Class A volume measurement instrument in accordance with DIN ISO
-  KB, conformity attested product according to DIN ISO, with certificate
-  product suitable for foodstuffs in accordance with 2002/72/EC
-  product suitable for the storage of light sensitive media
-  product individually packaged in PE bags, labelled with article number, description and EAN code

Perfect Liquid Handling

HIGH-PRECISION TITRATION

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Titration with new dosage technology

Bottle-top burette VITLAB continuous

Chemical volumetric analysis with minute liquid volumes requires a great deal of concentration. With VITLAB continuous, the bottle-top burette, you can carry out continuous titration and comfortably attain secure results – and save a lot of time in the process. The patented¹⁾ double-piston pump holds the solution to be measured permanently and pulse-free – filling procedures are not necessary. Furthermore, this innovative technology increases security; its compact structure and low center of gravity reduce risk of spillage, especially with smaller bottles. The height and length of the discharge tube can be adjusted,

allowing you to work safely with both short and tall bottles. The patented²⁾ return dosage system from VITLAB has two advantages: it prevents the loss of valuable reagents and reduces the risk of splashing. The simple-to-use calibration function helps meet all the requirements of testing-apparatus monitoring – with minimal downtime. Margins of error are well within those specified in the German DIN EN ISO 8665-3 standard, even for partial volumes.

¹⁾ EP 801 982

²⁾ EP 542 241



By turning both the handwheels, the titration liquid is pumped continuously by the patented double-piston pump.



The patented²⁾ recirculation valve from VITLAB reduces reagent loss and increases safety.



The angled display clearly shows the titration volume and simplifies operation.

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- 1 Long operating life from two easily replaced micro-batteries 1.5 V
- 2 Large, easy-to-read digits
- 3 Simple, media-specific readjustment via keypad
- 4 Continual supply of titration medium with patented double-piston pump
- 5 Telescopic discharge tube which can be adjusted in both height and length
- 6 Continuous and precise regulation of titration speed with a large practical thumbwheel
- 7 Reduced titrant waste with patented recirculation valve
- 8 Rotates freely 360° on bottle to align the label of the bottle with the touch panel
- 9 Adaptable to bottles of different sizes
- 10 Telescopic, extractable intake tube adapts burette to bottles of varying heights



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Bottle-top-burettes VITLAB® continuous E/RS

With recirculation valve and patented double-piston pump for permanent and pulse-free supply of the solution to be measured. Conformity certified according to DIN 12600.

Margins of error in accordance with DIN EN ISO 8655-3:

| | VITLAB® continuous E at 25 ml | VITLAB® continuous RS at 50 ml |
|--------------------------|----------------------------------|-----------------------------------|
| Accuracy | $\leq \pm 0.2 \%$ | $\leq \pm 0.2 \%$ |
| Coefficient of variation | $\leq 0.1 \%$ | $\leq 0.1 \%$ |

Items supplied:

VITLAB® continuous E/RS, thread adapters PP GL 32, GL 38 and S*40, telescopic intake tube (200 - 350 mm), telescopic discharge tube (140 - 220 mm), two micro-batteries 1.5 V (LR 03/AAA), instruction manual, quality certificate.

*Buttress thread

| Type | Volume/t* ml | Thread | SP | Art. No. |
|------|-----------------|--------|----|----------|
| E | 2.5 | GL 45 | 1 | 1620506 |
| RS | 5.0 | GL 45 | 1 | 1620507 |

* Dosage volumes per turn of thumbwheel.

Recommended application range for the bottle-top burette VITLAB® continuous:

The VITLAB bottle-top burette continuous E/RS can be used for the following titrants up to a concentration of 1 mol/l:

| Reagent | Reagent |
|-------------------------------------|--|
| Acetic acid | Potassium dichromate solution |
| Ammonium iron (II) sulfate solution | Potassium hydroxide solution |
| Ammonium thiocyanate solution | Potassium iodate solution |
| Barium chloride solution | Potassium permanganate solution |
| Bromide bromate solution | Potassium thiocyanate solution |
| Cerium (IV) sulfate solution | Silver nitrate solution |
| EDTA solution | Sodium arsenite solution |
| Hydrochloric acid | Sodium carbonate solution |
| Iodine solution | Sodium chloride solution |
| Iron (II) sulfate solution | Sodium hydroxide solution |
| Nitric acid | Sodium nitrite solution |
| Oxalic acid solution | Sodium thiosulfate solution |
| Perchloric acid | Sulfuric acid |
| Potassium bromate solution | Tetra-n-butylammonium hydroxide solution |
| Potassium bromate bromide solution | Zinc sulfate solution |

The above recommendations have been compiled with greatest care and reflect testing prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. Should you require information on chemicals not listed, please do not hesitate to contact us. Status as of: 02/10.

Accessories for bottle-top-burettes

For detailed descriptions of spare parts please see the instruction manual of the instrument or our homepage www.vitlab.de.

| Description | External thread | Bottle thread | SP | Art. No. |
|--|-----------------|---------------|----|----------|
| Bottle, amber glass, coated, square, 1000 ml | | GL 45 | 1 | 1671500 |
| Bottle, amber glass, coated, round, 2500 ml | | GL 45 | 1 | 1671510 |
| Drying tube, PP, unfilled | | | 1 | 1671095 |
| NS-adapter PP | GL 32 | NS 19/26 | 1 | 1670066 |
| NS-adapter PP | GL 32 | NS 24/29 | 1 | 1670067 |
| NS-adapter PP | GL 32 | NS 29/32 | 1 | 1670068 |
| Thread adapter, PP | GL 32 | GL 28 | 1 | 1670155 |
| Thread adapter, PP | GL 38 | GL 32 | 1 | 1670085 |
| Thread adapter, PP | GL 45 | GL 32 | 1 | 1670180 |
| Thread adapter, PP | GL 45 | GL 38 | 1 | 1670110 |
| Thread adapter, PP | GL 45 | S*40 | 1 | 1670120 |
| Thread adapter, PTFE | GL 32 | GL 28 | 1 | 1670080 |
| Thread adapter, PTFE | GL 38 | GL 32 | 1 | 1670095 |
| Thread adapter, PTFE | GL 45 | GL 32 | 1 | 1670100 |
| Thread adapter, PTFE | GL 45 | GL 38 | 1 | 1670115 |
| Thread adapter, PTFE/ETFE | GL 45 | S*40 | 1 | 1670125 |

* Buttress thread



Burettes VITLAB type Dr. Schilling



Burette made of borosilicate glass 3.3. Class B. Conformity with DIN ISO 384. With easily readable black scaling. Calibrated to deliver „Ex“. Automatic zeroing.

The stopcock of the burette is made of high quality plastic. Its PTFE plug turns easily and allows fine titration.

A small bumper has been attached to the upper end of the upright measuring tube. This feature reduces the change of breakage.

Material: burette of borosilicate glass 3.3, filling tube PP, burette stopcock PMP/PTFE, reservoir bottle PE-LD.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Bottle ml | SP | Art. No. |
|-----------|----------------|---------------|-----------|-----------|----|----------|
| 25* | 0.05 | 0.05 | 900 | 1000 | 1 | 106599 |
| 50* | 0.10 | 0.10 | 900 | 1000 | 1 | 106699 |
| 25** | 0.05 | 0.05 | 900 | 1000 | 1 | 106399 |
| 50** | 0.10 | 0.10 | 900 | 1000 | 1 | 106499 |
| 25*** | 0.05 | 0.05 | 900 | 1000 | 1 | 106799 |
| 50*** | 0.10 | 0.10 | 900 | 1000 | 1 | 106899 |

Glass tube with temperature-resilient plastic coating and Schellbach stripes (blue/white)

with Schellbach stripes (blue/white)

*** Burette made of brown glass





Burettes

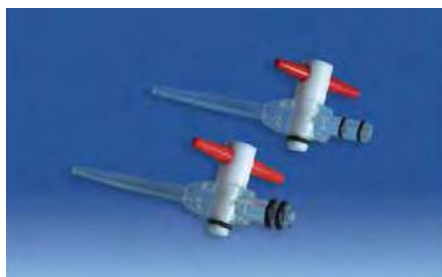
Plastic-coated burette made of borosilicate glass 3.3, Class B. Conformity with DIN ISO 384. With Schellbach stripes (blue/white) and easily readable black scaling. Calibrated to deliver 'Ex'.

The stopcock of the burette is made of high quality plastic. Its PTFE plug turns easily and allows fine titration.

The temperature-resilient plastic coating helps the entire device to resist breakage and glass fragments are confined within the sheath.

Material: burette of borosilicate glass 3.3, burette stopcock PMP/PTFE.

| Volume ml | Tolerance ± ml | Graduation ml | Length mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|----|----------|
| 25 | 0.05 | 0.05 | 800 | 2 | 105599 |
| 50 | 0.10 | 0.10 | 800 | 2 | 105699 |



Burette stopcocks, PMP/PTFE

Stopcocks made of PMP. Plugs of PTFE with polished surface turn easily but fit tightly. Insert with two seals.

Art. no. 105799: For burette tubes inner diam. 7.75 ± 0.1 mm.

Art. no. 105899: For burette tubes inner diam. 11.5 ± 0.1 mm.

| For Burettes ml | Height mm | Inner-Ø tip mm | Immersion depth mm | SP | Art. No. |
|--------------------|--------------|-------------------|-----------------------|----|----------|
| 25 | 90 | 1.25 | 17 | 5 | 105799 |
| 50 | 90 | 1.25 | 17 | 5 | 105899 |



Burette clamps, PP

Fit rods with diameters of 8 to 14 mm. Clamp arms have rubber-coated tips for secure gripping of burettes.

Graduations and meniscus are visible at all times. Comes supplied with a stainless steel spring.

| Type | SP | Art. No. |
|--------|----|----------|
| single | 5 | 80139 |
| double | 5 | 80140 |

Perfect Liquid Handling

TOTALLY RELIABLE DOSING

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VITLAB [®]
Competence in Labware

Lab routines quick, easy and safe

Bottletop-dispensers VITLAB genius and simplex

Extracting measured amounts of liquid from bottles is a routine laboratory task best carried out quickly, accurately, precisely, simply and safely, and without reagent loss.

The VITLAB genius and VITLAB simplex bottletop-dispensers are precision devices that not only accomplish these objectives, but also offer many other advantages. The direct displacement plungers, for example, use a fluoro plastic (PFA) seal that works like a windscreen wiper to prevent build-up of easily crystallizing media on the cylinder wall. The glass cylinder is also coated with a synthetic material that reduces risk of splashes if breakage should occur. The telescopic intake tube can be adjusted easily and smoothly to the height of the bottle. And, since the materials in contact with the media (PTFE, PFA, FEP, borosilicate glass and platinum-iridium) are resistant

to acids, solvents and bases, the bottletop-dispensers from VITLAB can be applied almost universally. All VITLAB dispensers are completely autoclavable at 121°C.

VITLAB genius is also equipped with our patented recirculation valve that reduces reagent loss when ventilated. The simple-to-use calibration function of the genius helps to meet all of the requirements of testing-apparatus monitoring, with the minimum of downtime.



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- 1 Media-specific readjustment by turning the adjustment setting (genius only)
- 2 Smooth handling! Direct displacement plunger with broad PFA seal prevents crystallization and build-up
- 3 Volume settings are quickly and accurately adjusted with a practical screw mechanism
- 4 Reduced titrant waste with patented recirculation valve (genius only)
- 5 Rotates freely 360° on bottle to align the label of the bottle with the touch panel
- 6 Attached tube-cap reduces the risk of drips
- 7 Adaptable to bottles of different sizes
- 8 Telescopic, extractable intake tube adapts dispenser to bottles of varying heights

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Bottle-top-dispensers VITLAB[®]simplex

With variable volume. Conformity certified according to DIN 12600.

Margins of error in accordance with DIN EN ISO 8655-5:

| | | |
|--------------------------|----------|-----------------|
| Nominal volumes | 2.5 ml | 5.0 to 100.0 ml |
| Accuracy | ≤ ±0.6 % | ≤ ±0.5 % |
| Coefficient of variation | ≤ 0.1 % | ≤ 0.1 % |

Items supplied:

VITLAB simplex, three thread adapters of PP (see below), telescopic intake tube (200 to 350 mm), mounting key, instruction manual, quality certificate stating all test values.

| Volume ml | Graduation ml | Thread | Adapter | SP | Art. No. |
|--------------|---------------|--------|-----------------|----|----------|
| 0.25 - 2.5 | 0.05 | GL 32 | GL 28, 45, S*40 | 1 | 1601503 |
| 0.5 - 5.0 | 0.10 | GL 32 | GL 28, 45, S*40 | 1 | 1601504 |
| 1.0 - 10.0 | 0.20 | GL 32 | GL 28, 45, S*40 | 1 | 1601505 |
| 2.5 - 25.0 | 0.50 | GL 45 | GL 32, 38, S*40 | 1 | 1601506 |
| 5.0 - 50.0 | 1.00 | GL 45 | GL 32, 38, S*40 | 1 | 1601507 |
| 10.0 - 100.0 | 2.00 | GL 45 | GL 32, 38, S*40 | 1 | 1601508 |

* Buttress thread

Bottle-top-dispensers VITLAB[®]simplex fix



With fixed volume. Conformity certified according to DIN 12600.

Margins of error in accordance with DIN EN ISO 8655-5:

| | | |
|--------------------------|----------|----------------|
| Nominal volumes | 1.0 ml | 5.0 to 10.0 ml |
| Accuracy | ≤ ±0.6 % | ≤ ±0.5 % |
| Coefficient of variation | ≤ 0.1 % | ≤ 0.1 % |

Items supplied:

VITLAB simplex fix, three thread adapters of PP (see below), telescopic intake tube (200 to 350 mm), mounting key, instruction manual, quality certificate stating all test values.

| Volume ml | Graduation ml | Thread | Adapter GL | SP | Art. No. |
|-----------|---------------|--------|-----------------|----|----------|
| 1.0 | - | GL 32 | GL 28, 45, S*40 | 1 | 1602502 |
| 5.0 | - | GL 32 | GL 28, 45, S*40 | 1 | 1602504 |
| 10.0 | - | GL 32 | GL 28, 45, S*40 | 1 | 1602505 |

* Buttress thread

Dosing

Bottle-top dispensers VITLAB[®]genius



With variable volume, recirculation valve and media-specific recalibration. Conformity certified according to DIN 12600.

Margins of error in accordance with DIN EN ISO 8655-5:

| | | |
|--------------------------|----------|-----------------|
| Nominal volumes | 2.5 ml | 5.0 to 100.0 ml |
| Accuracy | ≤ ±0.6 % | ≤ ±0.5 % |
| Coefficient of variation | ≤ 0.1 % | ≤ 0.1 % |

Items supplied:

VITLAB genius, three thread adapters of PP (see below), telescopic intake tube (200 to 350 mm), mounting key, instruction manual, quality certificate stating all test values.

| Volume ml | Graduation ml | Thread | Adapter | SP | Art. No. |
|--------------|---------------|--------|-----------------|----|----------|
| 0.25 - 2.5 | 0.05 | GL 32 | GL 28, 45, S*40 | 1 | 1605503 |
| 0.5 - 5.0 | 0.10 | GL 32 | GL 28, 45, S*40 | 1 | 1605504 |
| 1.0 - 10.0 | 0.20 | GL 32 | GL 28, 45, S*40 | 1 | 1605505 |
| 2.5 - 25.0 | 0.50 | GL 45 | GL 32, 38, S*40 | 1 | 1605506 |
| 5.0 - 50.0 | 1.00 | GL 45 | GL 32, 38, S*40 | 1 | 1605507 |
| 10.0 - 100.0 | 2.00 | GL 45 | GL 32, 38, S*40 | 1 | 1605508 |

* Buttress thread



Bottle-top dispensers HF



With variable volume, recirculation valve and media-specific recalibration.

For dispensing of hydrofluoric acid (HF). Parts in contact with reagent made of ceramics (cylinder, valve seats and balls) and platinum-iridium. Conformity certified according to DIN 12600.

Margins of error in accordance with DIN EN ISO 8655-5:

| | |
|--------------------------|----------|
| Nominal volume | 10.0 ml |
| Accuracy | ≤ ±0.5 % |
| Coefficient of variation | ≤ 0.1 % |

Items supplied:

Dispenser HF, three thread adapters of PP (see below), telescopic intake tube (125 to 240 mm), mounting key, instruction manual, quality certificate stating all test values.

| Volume ml | Graduation ml | Thread | Adapter | SP | Art. No. |
|------------|---------------|--------|-------------------------|----|----------|
| 1.0 - 10.0 | 0.20 | GL 45 | GL 25, 28, 32, 38, S*40 | 1 | 1606515 |

* Buttress thread

Recommended application range for the VITLAB bottle-top-dispensers piccolo 1 and piccolo 2

| Reagent | Reagent | Reagent |
|------------------------------|----------------------------------|---|
| Acetaldehyde | Chromosulfuric acid | Methyl butyl ether |
| Acetic acid | Copper sulfate | Methyl formate |
| Acetone | Cresol | Methyl propyl ketone |
| Acetonitrile | Cumene (Isopropyl benzene) | Mineral oil (Engine oil) |
| Acetylacetone | Cyclohexanone | Monochloroacetic acid, 50 % |
| Acrylonitrile | Decane | Nitric acid, 30% |
| Acrylic acid | 1-Decanol | Nitrobenzene |
| Adipic acid | Dibenzylether | Octane |
| Allyl alcohol | Dichlorobenzene | Oleic acid |
| Aluminium chloride | Dichloroethane | Oxalic acid |
| Amino acids | Dichloromethane | Perchloric acid |
| Ammonium chloride | Diethanolamine | Petroleum |
| Ammonium fluoride | Diethylamine | Phenol |
| Ammonium hydroxide | 1,2 Diethylbenzene | Phenylethanol |
| Ammonium sulfate | Diethylene glycol | Phenylhydrazine |
| n-Amyl acetate | Diethyl ether | Phosphoric acid, 85% |
| Amyl alcohol (Pentanol) | Dimethylaniline | Phosphoric acid, 85% + Sulfuric acid 98%, 1:1 |
| Amyl chloride (Chloopentane) | Dimethylformamide (DMF) | Piperidine |
| Aniline | Dimethyl sulfoxide (DMSO) | Potassium chloride |
| Barium chloride | 1,4 Dioxane | Potassium dichromate |
| Benzaldehyde | Diphenyl ether | Potassium hydroxide |
| Benzine (Gasoline) | Ethanol | Potassium permanganate |
| Benzene | Ethanolamine | Propanol |
| Benzoyl chloride | Ethyl acetate | Propionic acid |
| Benzyl alcohol | Ethyl methyl ketone | Propylene glycol (Propanediol) |
| Biuret reagent | Formaldehyde | Propylene oxide |
| Benzyl amine | Formamide | Pyridine |
| Benzyl chloride | Formic acid | Pyruvic acid |
| Boric acid | Glycol (Ethylene glycol) | Salicyl acid |
| Bromobenzene | Glycolic acid, 50 % | Salicylaldehyde |
| Bromonaphthalene | Glycerol | Sodium acetate |
| Butanediol | Heating oil (Diesel oil) | Sodium chloride |
| 1-Butanol | Hexane | Sodium dichromate |
| Butyric acid | Hexanoic acid | Sodium fluoride |
| n-Butyl acetate | Hexanol | Sodium hypochlorite |
| Butyl amine | Hydrochloric acid, 37% | Sodium hydroxide, 30% |
| Butyl methyl ether | Hydroiodic acid | Sulfuric acid, 98% |
| Calcium carbonate | Iodine-Potassium iodide solution | Silver acetate |
| Calcium chloride | Isoamyl alcohol | Silver nitrate |
| Calcium hydroxide | Isobutanol | Turpentine |
| Calcium hypochlorite | Isopropanol (2-Propanol) | Tetramethylammonium hydroxide |
| Chloroacetaldehyde | Isopropyl ether | Toluene |
| Chloroacetone | Lactic acid | Tartaric acid |
| Chlorobenzene | Magnesium chloride | Urea |
| Chlorbutane | Mercuric chloride | Xylene |
| Chloroacetic acid | Methanol | Zinc chloride |
| Chloro naphthalene | Methoxybenzene | Zinc sulfate |
| Chromic acid | Methyl benzoate | |

Hydrofluoric acid (HF): Only the Dispenser HF is specifically designed to dispense hydrofluoric acid (maximum permitted concentration 52%). The VITLAB bottle-top dispensers piccolo 1 and piccolo 2 are used mainly in connection with aqueous and highly diluted agents.

The above recommendations have been compiled with greatest care and reflect testing prior to publication. Always follow instructions in the operating manual of the instrument as well as the reagent manufacturer's specifications. Should you require information on chemicals not listed, please do not hesitate to contact us. Status as of: 02/10.

Bottle-top-dispensers VITLAB[®] piccolo



For dosing of tiny quantity of liquids in all areas of biochemistry and medical research.

With the VITLAB piccolo you can dispense the smallest quantities directly from the bottle - a big help, particularly for serial dispensing operations. This approach can even reduce costs since disposable tips are not necessary.

The ergonomic design makes dispensing simple and uncomplicated. The VITLAB piccolo can be used with just one hand. Use the thumb (just like pipetting) to depress the volume dispensing button. The spring-loaded piston refills the micro-dispenser automatically after dispensing.

The discharge tube can be rotated 360° so the dispenser can always be used with the label visible for safety.

In order to guarantee high levels of resistance to chemicals and a broad range of applications, only high-quality materials, such as PTFE, PFA, ETFE, FEP, borosilicate glass and platinum-iridium, come in contact with the media.

Items supplied:

VITLAB piccolo 1 or 2, mounting key, instruction manual.

| Type | Volume ml | Thread GL | Accuracy $\leq \pm$ | Coefficient of variation \leq | SP | Art. No. |
|-----------|-------------|-----------|---------------------|---------------------------------|----|----------|
| piccolo 1 | 100 | 28 | 3.0 | 0.4 | 1 | 1610501 |
| piccolo 1 | 200 | 28 | 2.5 | 0.4 | 1 | 1610502 |
| piccolo 1 | 250 | 28 | 2.0 | 0.4 | 1 | 1610503 |
| piccolo 1 | 500 | 28 | 1.5 | 0.3 | 1 | 1610504 |
| piccolo 1 | 1000 | 28 | 1.0 | 0.2 | 1 | 1610506 |
| piccolo 2 | 100 / 250 | 28 | 2.0 | 0.4 | 1 | 1611503 |
| piccolo 2 | 500 / 1000 | 28 | 1.0 | 0.2 | 1 | 1611506 |
| piccolo 2 | 1000 / 2000 | 28 | 1.0 | 0.2 | 1 | 1611508 |

Other volumes are available on request.





Accessories for bottletop-dispensers

For detailed descriptions of spare parts please see the instruction manual of the instrument or our homepage www.vitlab.de.

| Description | External thread | Bottle thread | Length cm | SP | Art. No. |
|--|-----------------|---------------|--------------|----|----------|
| Bottle, amber glass , coated, round, 100 ml | | GL 28 | | 1 | 1671505 |
| Bottle, amber glass , coated, square, 100 ml | | GL 32 | | 1 | 1671506 |
| Bottle, amber glass , coated, square, 250 ml | | GL 32 | | 1 | 1671515 |
| Bottle, amber glass , coated, square, 500 ml | | GL 32 | | 1 | 1671520 |
| Bottle, amber glass, coated, square, 1000 ml | | GL 45 | | 1 | 1671500 |
| Bottle, amber glass, coated, round, 2500 ml | | GL 45 | | 1 | 1671510 |
| Drying tube, PPunfilled | | | | 1 | 1671095 |
| NS-adapter PP | GL 32 | NS 19/26 | | 1 | 1670066 |
| NS-adapter PP | GL 32 | NS 24/29 | | 1 | 1670067 |
| NS-adapter PP | GL 32 | NS 29/32 | | 1 | 1670068 |
| Thread adapter, PP, piccolo | GL 28 | GL 32 | | 1 | 1670145 |
| Thread adapter, PP | GL 32 | GL 25 | | 1 | 1670150 |
| Thread adapter, PP | GL 32 | GL 28 | | 1 | 1670155 |
| Thread adapter, PP | GL 32 | GL 38 | | 1 | 1670165 |
| Thread adapter, PP | GL 32 | GL 45 | | 1 | 1670175 |
| Thread adapter, PP | GL 32 | S*40 | | 1 | 1670170 |
| Thread adapter, PP | GL 38 | GL 32 | | 1 | 1670085 |
| Thread adapter, PP | GL 45 | GL 32 | | 1 | 1670180 |
| Thread adapter, PP | GL 45 | GL 38 | | 1 | 1670110 |
| Thread adapter, PP | GL 45 | S*40 | | 1 | 1670120 |
| Thread adapter, PTFE | GL 32 | GL 25 | | 1 | 1670072 |
| Thread adapter, PTFE | GL 32 | GL 28 | | 1 | 1670080 |
| Thread adapter, PTFE | GL 32 | GL 45 | | 1 | 1670105 |
| Thread adapter, PTFE | GL 32 | S*40 | | 1 | 1670092 |
| Thread adapter, PTFE | GL 45 | GL 32 | | 1 | 1670100 |
| Thread adapter, PTFE | GL 45 | GL 38 | | 1 | 1670115 |
| Discharge tubing, flexible, PTFE, for dispensers simplex / genius 2.5, 5 and 10 ml | | | 80 | 1 | 1650086 |
| Discharge tubing, flexible, PTFE, for dispensers simplex / genius 25, 50 und 100 ml | | | 80 | 1 | 1650111 |

* Buttress thread

Perfect Liquid Handling

PIPETTING WITH EASE AND COMFORT

НеваРеактив



НеваРеактив

VITLAB 
Competence in Labware

Pipette controller VITLAB pipeo®



For all pipettes from 0.1 to 100 ml

With the new pipette controller VITLAB pipeo®, pipette handling is simple and comfortable. The ergonomic handle, very light weight - only about 190 grams - and excellent balance all contribute to operating ease. Freely and precisely adjust the speed of the liquid discharge with one hand using the two easily accessible buttons. A 50 ml pipette can be filled, quietly and with minimum vibration, in less than ten seconds. The VITLAB pipeo can be set to release liquid either in gravity delivery, or in blow out mode using the battery-operated motor.

Items supplied:

VITLAB pipeo®, battery charger, battery, one battery compartment cover, two spare membrane filters 0.2 µm, instruction manual.

| Type | SP | Art. No. |
|---|----|----------|
| pipeo®with battery charger for Europe | 1 | 1631500 |
| pipeo®with battery charger for UK/Ireland | 1 | 1631510 |
| pipeo®with battery charger for Australia | 1 | 1631520 |
| pipeo®with battery charger for Japan | 1 | 1631530 |



Pipette controller VITLAB maneus®



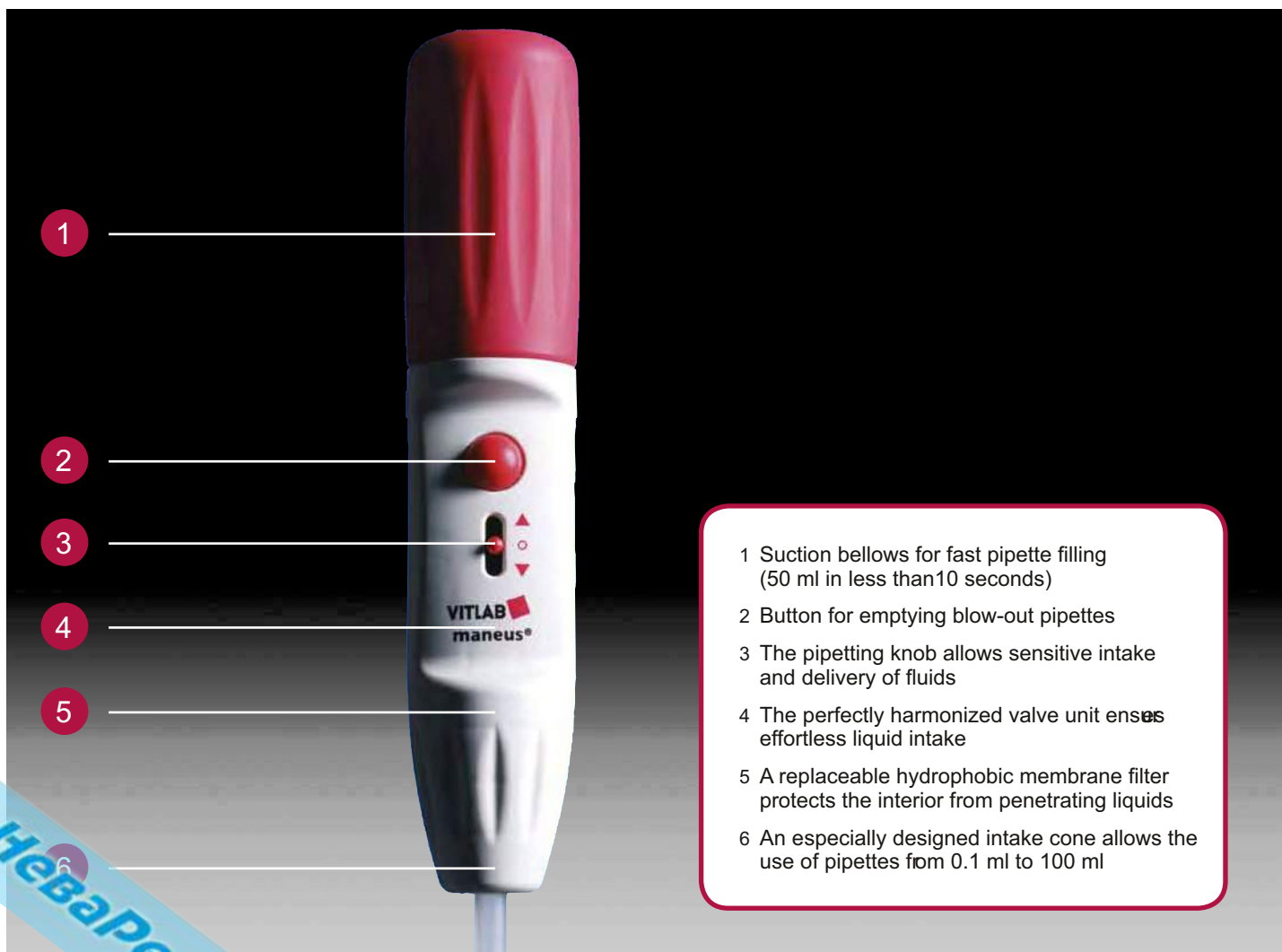
For all pipettes from 0.1 to 100 ml. With membrane filter 3 µm and instruction manual.

The new VITLAB maneus® pipette controller allows both left and right-handed people to work easily, tirelessly and safely with all common pipettes from 0.1 to 10 ml. Its easy handling combined with high sensitiveness also lets inexperienced users set the meniscus precisely.

The VITLAB maneus® pipette controller is easy to take apart, very simple to clean and completely autoclavable.



| Type | SP | Art. No. |
|---------|----|----------|
| maneus® | 1 | 1630500 |





Pipette filler bulbs, NR

Pipette filler with 3 valves.
Valve A: Release air, Valve S: Filling, Valve E: Delivery

| Type | SP | Art. No. |
|--|----|----------|
| Universal model, for pipets up to 10 ml | 1 | 104099 |
| Universal model, for pipets up to 100 ml | 1 | 104199 |



Pipette pumps

For pipetting liquids, fit all glass and plastic pipettes. Slowly rotating their actuator-wheels inducts liquid into pipettes. Pressing their relief valves automatically empties pipette pumps without returning their plungers.

| For Pipettes ml | Colour | SP | Art. No. |
|-----------------|--------|----|----------|
| 2 | blue | 1 | 324594 |
| 10 | green | 1 | 324694 |
| 25 | red | 1 | 324794 |



Accessories for pipette controllers

For detailed descriptions of spare parts please see the instruction manual of the instrument or our homepage www.vitlab.de.

| Description | SP | Art. No. |
|--|----|----------|
| Membrane filter 0.2 µm, sterile, VITLAB pipette | 1 | 1670647 |
| Membrane filter 0.2 µm, non-sterile, VITLAB pipette | 10 | 1670648 |
| Membrane filter 3 µm, non-sterile, VITLAB pipette, VITLAB manifold | 10 | 1670650 |
| Wall mounting bracket, VITLAB pipette | 1 | 1670660 |

Pipetting

Неварреактив

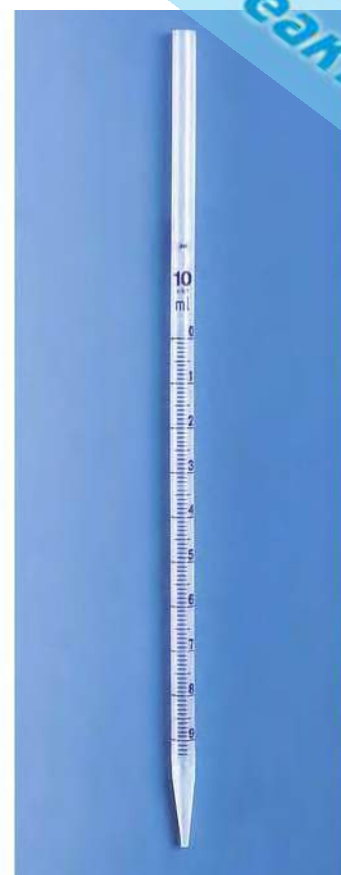
Measuring pipettes, PP

High clarity. Resistant to breakage. Suction tube outer Ø max. 8 mm. Calibrated to deliver ,Ex'.

Exposure to temperatures above 60 °C may effect accuracy. Recommended cleaning with mild alkaline detergents up to 60 °C.

| Volume ml | Tolerance ± ml | Graduation ml | Length mm | SP | Art. No. |
|-----------|----------------|---------------|-----------|----|----------|
| 1 | 0.02 | 0.1 | 300 | 12 | 163094 |
| 2 | 0.02 | 0.1 | 300 | 12 | 163194 |
| 5 | 0.05 | 0.1 | 330 | 12 | 163294 |
| 10* | 0.10 | 0.1 | 330 | 12 | 163394 |
| 10 | 0.10 | 0.1 | 320 | 12 | 163594 |

* Suction tube outer Ø10 mm



Bulb pipettes, PP

High clarity. Resistant to breakage. Calibrated to deliver ,Ex'.

Exposure to temperatures above 60 °C may affect accuracy. Recommended cleaning with mild alkaline detergents up to 60 °C.

| Volume ml | Tolerance ± ml | Length mm | SP | Art. No. |
|-----------|----------------|-----------|----|----------|
| 1 | 0.02 | 300 | 12 | 164094 |
| 2 | 0.02 | 300 | 12 | 164194 |
| 5 | 0.03 | 300 | 6 | 164294 |
| 10 | 0.04 | 440 | 6 | 164394 |
| | 0.05 | 450 | 6 | 164494 |
| 50 | 0.10 | 460 | 6 | 164594 |



Неварреактив

Disposable pipettes, PS, sterile



Translucent, graduated, individual sterile packaging, free of pyrogene.

| Volume ml | Graduation ml | Length mm | SP | Art. No. |
|--------------|------------------|--------------|----|----------|
| 1 | 0.01 | 272 | 25 | 160110 |
| 2 | 0.01 | 272 | 25 | 160210 |
| 5 | 0.10 | 320 | 25 | 160510 |
| 10 | 0.10 | 320 | 25 | 161010 |
| 25 | 0.20 | 345 | 1 | 162510 |

Disposable pipettes, PS, non-sterile



Translucent, graduated, non-sterile.

| Volume ml | Graduation ml | Length mm | SP | Art. No. |
|--------------|------------------|--------------|----|----------|
| 1 | 0.01 | 272 | 10 | 160119 |
| 2 | 0.01 | 272 | 10 | 160219 |
| 5 | 0.10 | 320 | 10 | 160519 |
| 10 | 0.10 | 320 | 10 | 161019 |

Pasteur pipettes, PE-LD



Disposable. Very good reproducibility of the number of drops per millilitre. Ideal for aliquots. Pasteur pipettes can be filled and deep-frozen, or changed into a closed vessel by heat-sealing the tip. The integrated pipetting bulb depresses easily, minimizing fatigue from frequent pipetting. Resistant to gas or gamma radiation sterilization.

| Graduation/ Subdivision ml | Withdraw volume max. ml | Outer-Ø tip mm | Length mm | Drop quantity of ml | SP | Art. No. |
|----------------------------------|-------------------------------|----------------------|--------------|---------------------------|------|----------|
| - | 3.0 | 2.8 | 152 | 25-27 | 5000 | 148893 |
| 1/0.25 | 3.5 | 3.4 | 151 | 25-30 | 5000 | 148993 |
| 3/0.5 | 3.5 | 3.2 | 152 | 21-28 | 5000 | 149093 |
| 2/0.5 | 2.0 | 3.3 | 152 | 22-26 | 5000 | 149193 |
| - | 4.0 | 1.0 | 148 | 52-65 | 5000 | 149293 |
| - | 1.0 | 1.0 | 105 | 50 | 3200 | 149393 |

Pipetting

Неварреактив

Dropping pipettes, PE-LD

With integrated bellows.
For sampling and decanting of infectious or toxic liquids. Graduated.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|-----|----------|
| 1.5 | 133 | 100 | 149893 |
| 5 | 194 | 100 | 149993 |



Dropping pipettes, PE-LD

With integrated pipetting bulb.
For sampling and decanting of infectious or toxic liquids.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|-----|----------|
| 1.8 | 98 | 250 | 149693 |



Pipette tips, PP

The pipette tips are conformity-certified. CE-marked according to IVD-Directive 98/79 EG and tested for pipettes made by BRAND. They are suitable for a wide range of pipettes from different manufacturers.

| Volume μ l | Tip | Package | SP | Art. No. |
|-------------------|--------|-----------------|-------|----------|
| 2 - 200 | yellow | 1 bag of 1000 | 1000 | 145594 |
| 2 - 200 | yellow | 10 bags of 1000 | 10000 | 145694 |
| 50 - 1000 | blue | 2 bags of 500 | 1000 | 145894 |
| 50 - 1000 | blue | 10 bags of 500 | 5000 | 145994 |



Неварреактив

Pipette racks, PP

Rotary rack, consisting of a baseplate and vertical rod accommodating a rotary unit composed of two end-plates and a spacer-tube. The upper end-plate has a total of 94 openings of various diameters, while the lower end-plate has grooves and drainage holes. Supplied flat-packed, readily assembled.



| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 230 | 470 | 2 | 79194 |

Pipette tray, PVC

Holds pipettes from 120 mm length.



| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 285 x 215 x 40 | 1 | 80996 |

Pipette tray, PVC

For drawers. Incorporates 4 compartments.



| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 420 x 300 x 30 | 1 | 80252 |

Pipetting

НеваРеактив

Pipette washer, PE-HD

An automatic system ensuring rapid washing and high-quality results. Suitable for the use of pipette baskets (art.-no. 80219 and 80222).

| Ø mm | Height mm | Usable length mm | SP | Art. No. |
|---------|--------------|---------------------|----|----------|
| 165 | 740 | 600 | 1 | 80217 |
| 165 | 1000 | 840 | 1 | 80215 |



Pipette jars, PE-HD

For pre-cleaning pipettes in cleaning agents.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 125 | 250 | 1 | 80223 |
| 165 | 500 | 1 | 80221 |
| 165 | 650 | 1 | 80218 |



Pipette baskets, PE-HD

For dipping pipettes into the pipette jar or pipette-washer and for transferring pipettes. The pipette carrier basket art. 80219 can be prolonged from 650 mm to 870 mm with the help of the extension.

| Description | Ø mm | Overall Height mm | Carrier Height mm | SP | Art. No. |
|---|---------|----------------------|----------------------|----|----------|
| Pipette Basket | 130 | 650 | 300 | 1 | 80219 |
| Pipette Basket | 130 | 495 | 300 | 1 | 80222 |
| Extension for the handle (Pipet Basket 80219) | | | | 2 | 81219 |



НеваРеактив

Competence in Lab Plastics

MEASUREMENT ACCURACY TO THE HIGHEST DEGREE

НеваРеактив



НеваРеактив

VITLAB [®]
Competence in Labware

Highest precision volume measurement

Volumetric measurement is a routine operation in the laboratory. Therefore, volumetric instruments such as volumetric flasks, graduated cylinders and pipettes are standard equipment in each analytical laboratory.

The importance of the degree of measurement accuracy in your laboratory routines cannot be overstated. VITLAB has decades of experience in the development and production of laboratory products which are used to measure volumes. Based on DIN 12681 – which incidentally was established through the initiation of VITLAB – VITLAB was the first manufacturer to make Class A, conformity-certified measuring cylinders available in PMP plastic.

All Class A PMP volumetric flasks are optionally available in transparent or UV absorbing variations for light-sensitive substances.



n in ng devices

Calibration

Type ,TD, Ex': The delivered quantity of liquid corresponds exactly to the capacity indicated on the instrument (pipettes and burettes).

Type ,TC, In': The contained quantity of liquid corresponds exactly to the capacity indicated on the instrument (graduated cylinders and volumetric flasks).

VITLAB adjusts each individual volumetric flask at a room temperature of 20 °C. Due to the hydrophobic characteristics of the materials, VITLAB plastic volumetric instruments can assure that the measured liquid quantity (In) is the same as the removed quantity (Ex) for aqueous solutions.

Accuracy classes

Class A: the tolerances lie within the levels dictated by DIN and ISO.

Class B: the tolerances are twice the margins for Class A dictated by DIN and ISO. Detailed explanations on "accuracy in volume measurement" are available in the chapter on "General and Technical Information".

Conformity

VITLAB guarantees that the measuring devices are calibrated in accordance with the German Calibration Regulations. The special manufacturing process, developed by VITLAB, and the proven VITLAB quality management system, ensure that the tightest tolerances for the adherence to measurement standards are maintained.





Volumetric flasks, PFA, class A

High transparency, individually calibrated ring-mark.
Tolerances class A according to DIN EN ISO 1042. With lot certificate.
Supplied with PFA screw cap. Screw caps provide hermetic seals and high safety from outside contamination. Withstand high temperatures and chemical attack.
Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Thread GL | SP | Art. No. |
|--------------|-------------------|--------------|--------------|----|----------|
| 10 | 0.04 | 90 | 18 | 1 | 107097 |
| 25 | 0.04 | 115 | 18 | 1 | 107197 |
| 50 | 0.06 | 150 | 18 | 1 | 107297 |
| 100 | 0.10 | 180 | 18 | 1 | 107397 |
| 250 | 0.15 | 235 | 25 | 1 | 107497 |
| 500 | 0.25 | 270 | 25 | 1 | 107597 |



Volumetric flasks opaque, PMP, class A



UV-absorbent for storage of light-sensitive substances.

High transparency, with coloured screw cap made of PP and individually calibrated ring-mark. Tolerances class A according to DIN EN ISO 1042.
With imprinted lot number and certificate.
Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Thread GL | SP | Art. No. |
|--------------|-------------------|--------------|--------------|----|----------|
| 10 | 0.04 | 90 | 18 | 2 | 670040 |
| 25 | 0.04 | 115 | 18 | 2 | 671040 |
| 50 | 0.06 | 150 | 18 | 2 | 672040 |
| 100 | 0.10 | 180 | 18 | 2 | 673040 |
| 250 | 0.15 | 235 | 25 | 2 | 674040 |
| 500 | 0.25 | 270 | 25 | 2 | 675040 |
| 1000 | 0.40 | 310 | 32 | 1 | 676040 |

Volume measurement

НеваРеактив

Volumetric flasks, PMP, class A



Glass-clear, with NS stopper made of PP and individually adjusted ring-mark. Tolerances class A according to DIN EN ISO 1042.

With imprinted lot number and certificate.

Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Neck NS | SP | Art. No. |
|--------------|-------------------|--------------|------------|----|----------|
| 10 | 0.04 | 90 | 10/19 | 6 | 67704 |
| 25 | 0.04 | 115 | 10/19 | 6 | 67104 |
| 50 | 0.06 | 150 | 10/19 | 6 | 67204 |
| 100 | 0.10 | 180 | 14/23 | 6 | 67304 |
| 250 | 0.15 | 235 | 19/26 | 5 | 67404 |
| 500 | 0.25 | 270 | 19/26 | 4 | 67504 |
| 1000 | 0.40 | 310 | 24/29 | 3 | 67604 |



Volumetric flasks, PMP, class B



Glass-clear, with NS stopper made of PP and individually adjusted ring-mark. Tolerances class B according to DIN EN ISO 1042.

Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Neck NS | SP | Art. No. |
|--------------|-------------------|--------------|------------|----|----------|
| 10 | 0.08 | 90 | 10/19 | 6 | 67795 |
| 25 | 0.08 | 115 | 10/19 | 6 | 67195 |
| 50 | 0.12 | 150 | 10/19 | 6 | 67295 |
| 100 | 0.20 | 180 | 14/23 | 6 | 67395 |
| 250 | 0.30 | 235 | 19/26 | 5 | 67495 |
| 500 | 0.50 | 270 | 19/26 | 4 | 67595 |
| 1000 | 0.80 | 310 | 24/29 | 4 | 67695 |



НеваРеактив



Volumetric flasks, PMP, class B

Glass-clear, with screw cap made of PP and individually adjusted ring-mark. Tolerances class B according to DIN EN ISO 1042.

Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Thread GL | SP | Art. No. |
|-----------|----------------|-----------|-----------|----|----------|
| 10 | 0.08 | 90 | 18 | 6 | 677895 |
| 25 | 0.08 | 115 | 18 | 6 | 671895 |
| 50 | 0.12 | 150 | 18 | 6 | 672895 |
| 100 | 0.20 | 180 | 18 | 6 | 673895 |
| 250 | 0.30 | 235 | 25 | 5 | 674895 |
| 500 | 0.50 | 270 | 25 | 4 | 675895 |
| 1000 | 0.80 | 310 | 32 | 3 | 676895 |



Volumetric flasks, PP, class B



High transparency, with NS stopper made of PP and individually adjusted ring-mark. Tolerances class B according to DIN EN ISO 1042.

Exposure to temperatures above 60 °C may effect accuracy. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Neck NS | SP | Art. No. |
|-----------|----------------|-----------|---------|----|----------|
| 10 | 0.08 | 90 | 10/19 | 6 | 677941 |
| 25 | 0.08 | 115 | 10/19 | 6 | 671941 |
| 50 | 0.12 | 150 | 10/19 | 6 | 672941 |
| 100 | 0.20 | 180 | 14/23 | 6 | 673941 |
| 250 | 0.30 | 235 | 19/26 | 5 | 674941 |
| 500 | 0.50 | 270 | 19/26 | 4 | 675941 |
| 1000 | 0.80 | 310 | 24/29 | 3 | 676941 |

Volume measurement

НеваРеактив

Volumetric flasks, PP, class B



High transparency, with screw cap made of PP and individually adjusted ring-mark.

Tolerances class B according to DIN EN ISO 1042.

Exposure to temperatures above 60 °C may effect accuracy. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Thread GL | SP | Art. No. |
|--------------|-------------------|--------------|--------------|----|----------|
| 10 | 0.08 | 90 | 18 | 6 | 677891 |
| 25 | 0.08 | 115 | 18 | 6 | 671891 |
| 50 | 0.12 | 150 | 18 | 6 | 672891 |
| 100 | 0.20 | 180 | 18 | 6 | 673891 |
| 250 | 0.30 | 235 | 25 | 5 | 674891 |
| 500 | 0.50 | 270 | 25 | 4 | 675891 |
| 1000 | 0.80 | 310 | 32 | 3 | 676891 |



Volumetric cylinders, PMP, class A, KB



Tall form, glass-clear, with a raised scale.

Ring marks at the primary scale points, hexagonal base, calibrated to contain ,In'.

The certificate supplied with these volumetric cylinders attests conformance to standard records. It bears the lot number and the mean value ascertained under the test conditions.

The volumetric cylinder is imprinted with the lot number and the year of manufacture.

Any deviations from the standard value fall well within the allowed tolerances of Class A according to DIN 12681 and ISO 6706.

Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 10 | 0,10 | 0,20 | 145 | 15 | 2 | 64604 |
| 25 | 0.25 | 0.50 | 170 | 22 | 2 | 64704 |
| 50 | 0.50 | 1.00 | 200 | 27 | 2 | 64804 |
| 100 | 0.50 | 1.00 | 250 | 33 | 2 | 64904 |
| 250 | 1.00 | 2.00 | 315 | 44 | 2 | 65004 |
| 500 | 2.50 | 5.00 | 360 | 58 | 1 | 65104 |
| 1000 | 5.00 | 10.00 | 440 | 69 | 1 | 65204 |
| 2000 | 10.00 | 20.00 | 482 | 97 | 1 | 65304 |



НеваРеактив



Volumetric cylinders, PMP, class A

Tall form, glass-clear, with a raised scale.

Ring marks at the primary scale points, hexagonal base, calibrated to contain, 'In'.

Tolerances class A according to DIN 12681 / ISO 6706.

Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 10 | 0.10 | 0.20 | 145 | 15 | 12 | 64695 |
| 25 | 0.25 | 0.50 | 170 | 22 | 12 | 64795 |
| 50 | 0.50 | 1.00 | 200 | 27 | 12 | 64895 |
| 100 | 0.50 | 1.00 | 250 | 33 | 12 | 64995 |
| 250 | 1.00 | 2.00 | 315 | 44 | 6 | 65095 |
| 500 | 2.50 | 5.00 | 360 | 58 | 6 | 65195 |
| 1000 | 5.00 | 10.00 | 440 | 69 | 6 | 65295 |
| 2000 | 10.00 | 20.00 | 482 | 97 | 3 | 65395 |



Volumetric cylinders, PP, class B



Tall form, highly transparent, with a raised blue scale.

Ring marks at the primary scale points, hexagonal base, calibrated to contain, 'In'.

Tolerances class B according to DIN 12681 / ISO 6706.

Exposure to temperatures above 60 °C may effect accuracy.

Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 10 | 0.20 | 0.20 | 145 | 15 | 12 | 646081 |
| 25 | 0.50 | 0.50 | 170 | 22 | 12 | 647081 |
| 50 | 1.00 | 1.00 | 200 | 27 | 12 | 648081 |
| 100 | 1.00 | 1.00 | 250 | 33 | 12 | 649081 |
| 250 | 2.00 | 2.00 | 315 | 44 | 6 | 650081 |
| 500 | 5.00 | 5.00 | 360 | 58 | 6 | 651081 |
| 1000 | 10.00 | 10.00 | 440 | 69 | 6 | 652081 |
| 2000 | 20.00 | 20.00 | 482 | 97 | 3 | 653081 |

Volume measurement

НеваРеактив

Volumetric cylinders, PP, class B



Tall form, highly transparent, with a raised scale.

Ring marks at the primary scale points, hexagonal base, calibrated to contain ,In'.

Tolerances class B according to DIN 12681 / ISO 6706.

Exposure to temperatures above 60 °C may effect accuracy.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 10 | 0.20 | 0.20 | 145 | 15 | 12 | 646941 |
| 25 | 0.50 | 0.50 | 170 | 22 | 12 | 647941 |
| 50 | 1.00 | 1.00 | 200 | 27 | 12 | 648941 |
| 100 | 1.00 | 1.00 | 250 | 33 | 12 | 649941 |
| 250 | 2.00 | 2.00 | 315 | 44 | 6 | 650941 |
| 500 | 5.00 | 5.00 | 360 | 58 | 6 | 651941 |
| 1000 | 10.00 | 10.00 | 440 | 69 | 6 | 652941 |
| 2000 | 20.00 | 20.00 | 482 | 97 | 3 | 653941 |



Volumetric cylinders, SAN, class B



Tall form, glass-clear, with a raised scale.

Ring marks at the primary scale points, hexagonal base, calibrated to contain ,In'.

Tolerances class B according to DIN 12681 / ISO 6706.

Exposure to temperatures above 60 °C may effect accuracy.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 10 | 0.20 | 0.20 | 140 | 16 | 12 | 64691 |
| 25 | 0.50 | 0.50 | 169 | 21 | 12 | 64791 |
| 50 | 1.00 | 1.00 | 199 | 28 | 12 | 64891 |
| 100 | 1.00 | 1.00 | 260 | 34 | 12 | 64991 |
| 250 | 2.00 | 2.00 | 315 | 47 | 6 | 65091 |
| 500 | 5.00 | 5.00 | 350 | 61 | 6 | 65191 |
| 1000 | 10.00 | 10.00 | 415 | 76 | 6 | 65291 |
| 2000 | 20.00 | 20.00 | 482 | 97 | 3 | 65391 |



НеваРеактив



Volumetric cylinders, PP, class B

Short form, highly transparent, with a raised scale.
Ring marks at the primary scale points, round base, calibrated to contain ,In'.
Exposure to temperatures above 60 °C may effect accuracy.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 25 | 0.50 | 0.50 | 122 | 22 | 12 | 640941 |
| 50 | 1.00 | 1.00 | 142 | 27 | 12 | 641941 |
| 100 | 2.00 | 2.00 | 163 | 37 | 12 | 642941 |
| 250 | 5.00 | 5.00 | 192 | 51 | 6 | 643941 |
| 500 | 10.00 | 10.00 | 218 | 67 | 6 | 644941 |
| 1000 | 20.00 | 20.00 | 285 | 78 | 6 | 645941 |



Volumetric cylinders, SAN, class B



Short form, glass-clear, with a raised scale.
Ring marks at the primary scale points, round base, calibrated to contain ,In'.
Exposure to temperatures above 60 °C may effect accuracy.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|---------|----|----------|
| 25 | 0.50 | 0.50 | 122 | 22 | 12 | 64091 |
| 50 | 1.00 | 1.00 | 142 | 27 | 12 | 64191 |
| 100 | 2.00 | 2.00 | 163 | 37 | 12 | 64291 |
| 250 | 5.00 | 5.00 | 192 | 51 | 6 | 64391 |
| 500 | 10.00 | 10.00 | 218 | 67 | 6 | 64491 |
| 1000 | 20.00 | 20.00 | 285 | 78 | 6 | 64591 |



Hydrometer cylinder, PP

Highly transparent, with a raised scale. With reservoir beaker and pouring lip. Ring marks at the primary scale points, hexagonal base, calibrated to contain ,In'.
Tolerances class B according to DIN 12681 / ISO 6706.
Exposure to temperatures above 60 °C may effect accuracy.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 500 | 5.00 | 351 | 73 | 1 | 760941 |

Volume measurement

Неварреактив

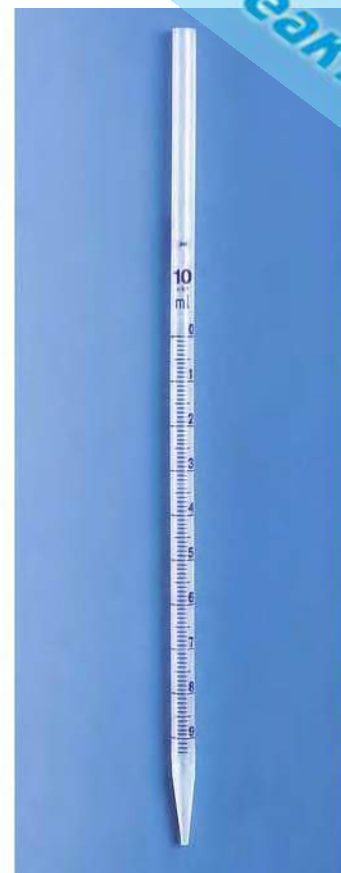
Measuring pipettes, PP

High clarity. Resistant to breakage. Suction tube outer Ø max. 8 mm. Calibrated to deliver ,Ex'.

Exposure to temperatures above 60 °C may effect accuracy. Recommended cleaning with mild alkaline detergents up to 60 °C.

| Volume ml | Tolerance ± ml | Graduation ml | Length mm | SP | Art. No. |
|-----------|----------------|---------------|-----------|----|----------|
| 1 | 0.02 | 0.1 | 300 | 12 | 163094 |
| 2 | 0.02 | 0.1 | 300 | 12 | 163194 |
| 5 | 0.05 | 0.1 | 330 | 12 | 163294 |
| 10* | 0.10 | 0.1 | 330 | 12 | 163394 |
| 10 | 0.10 | 0.1 | 320 | 12 | 163594 |

* Suction tube outer Ø10 mm



Bulb pipettes, PP

High clarity. Resistant to breakage. Calibrated to deliver ,Ex'.

Exposure to temperatures above 60 °C may affect accuracy. Recommended cleaning with mild alkaline detergents up to 60 °C.

| Volume ml | Tolerance ± ml | Length mm | SP | Art. No. |
|-----------|----------------|-----------|----|----------|
| 1 | 0.02 | 300 | 12 | 164094 |
| 2 | 0.02 | 300 | 12 | 164194 |
| 5 | 0.03 | 300 | 6 | 164294 |
| 10 | 0.04 | 440 | 6 | 164394 |
| | 0.05 | 450 | 6 | 164494 |
| 50 | 0.10 | 460 | 6 | 164594 |



Неварреактив



Disposable pipettes, PS, sterile

Translucent, graduated, individual sterile packaging, free of pyrogene.

| Volume ml | Graduation ml | Length mm | SP | Art. No. |
|--------------|------------------|--------------|----|----------|
| 1 | 0.01 | 272 | 25 | 160110 |
| 2 | 0.01 | 272 | 25 | 160210 |
| 5 | 0.10 | 320 | 25 | 160510 |
| 10 | 0.10 | 320 | 25 | 161010 |
| 25 | 0.20 | 345 | 1 | 162510 |



Disposable pipettes, PS, non-sterile

Translucent, graduated, non-sterile.

| Volume ml | Graduation ml | Length mm | SP | Art. No. |
|--------------|------------------|--------------|----|----------|
| 1 | 0.01 | 272 | 10 | 160119 |
| 2 | 0.01 | 272 | 10 | 160219 |
| 5 | 0.10 | 320 | 10 | 160519 |
| 10 | 0.10 | 320 | 10 | 161019 |



Pasteur pipettes, PE-LD

Disposable. Very good reproducibility of the number of drops per millilitre. Ideal for aliquots. Pasteur pipettes can be filled and deep-frozen, or changed into a closed vessel by heat-sealing the tip. The integrated pipetting bulb depresses easily, minimizing fatigue from frequent pipetting. Resistant to gas or gamma radiation sterilization.

| Graduation/ Subdivision ml | Withdraw volume max. ml | Outer-Ø tip mm | Length mm | Drop quantity of ml | SP | Art. No. |
|----------------------------------|-------------------------------|----------------------|--------------|---------------------------|------|----------|
| - | 3.0 | 2.8 | 152 | 25-27 | 5000 | 148893 |
| 1/0.25 | 3.5 | 3.4 | 151 | 25-30 | 5000 | 148993 |
| 3/0.5 | 3.5 | 3.2 | 152 | 21-28 | 5000 | 149093 |
| 2/0.5 | 2.0 | 3.3 | 152 | 22-26 | 5000 | 149193 |
| - | 4.0 | 1.0 | 148 | 52-65 | 5000 | 149293 |
| - | 1.0 | 1.0 | 105 | 50 | 3200 | 149393 |

Volume measurement

Неварреактив

Dropping pipettes, PE-LD

With integrated bellows.
For sampling and decanting of infectious or toxic liquids. Graduated.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|-----|----------|
| 1.5 | 133 | 100 | 149893 |
| 5 | 194 | 100 | 149993 |



Dropping pipettes, PE-LD

With integrated pipetting bulb.
For sampling and decanting of infectious or toxic liquids.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|-----|----------|
| 1.8 | 98 | 250 | 149693 |



Pipette tips, PP

The pipette tips are conformity-certified. CE-marked according to IVD-Directive 98/79 EG and tested for pipettes made by BRAND. They are suitable for a wide range of pipettes from different manufacturers.

| Volume μ l | Tip | Package | SP | Art. No. |
|-------------------|--------|-----------------|-------|----------|
| 2 - 200 | yellow | 1 bag of 1000 | 1000 | 145594 |
| 2 - 200 | yellow | 10 bags of 1000 | 10000 | 145694 |
| 50 - 1000 | blue | 2 bags of 500 | 1000 | 145894 |
| 50 - 1000 | blue | 10 bags of 500 | 5000 | 145994 |



Неварреактив



Pipette racks, PP

Rotary rack, consisting of a baseplate and vertical rod accommodating a rotary unit composed of two end-plates and a spacer-tube. The upper end-plate has a total of 94 openings of various diameters, while the lower end-plate has grooves and drainage holes. Supplied flat-packed, readily assembled.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 230 | 470 | 2 | 79194 |



Pipette tray, PVC

Holds pipettes from 120 mm length.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 285 x 215 x 40 | 1 | 80996 |



Pipette tray, PVC

For drawers. Incorporates 4 compartments.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 420 x 300 x 30 | 1 | 80252 |



Pipette washer, PE-HD

An automatic system ensuring rapid washing and high-quality results. Suitable for the use of pipette baskets (art.-no. 80219 and 80222).

| Ø mm | Height mm | Usable length mm | SP | Art. No. |
|---------|--------------|---------------------|----|----------|
| 165 | 740 | 600 | 1 | 80217 |
| 165 | 1000 | 840 | 1 | 80215 |

Volume measurement

Pipette jars, PE-HD

For pre-cleaning pipettes in cleaning agents.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 125 | 250 | 1 | 80223 |
| 165 | 500 | 1 | 80221 |
| 165 | 650 | 1 | 80218 |



Pipette baskets, PE-HD

For dipping pipettes into the pipette jar or pipette-washer and for transferring pipettes. The pipette carrier basket art. 80219 can be prolonged from 650 mm to 870 mm with the help of the extension.

| Description | Ø mm | Overall Height mm | Carrier Height mm | SP | Art. No. |
|---|---------|----------------------|----------------------|----|----------|
| Pipette Basket | 130 | 650 | 300 | 1 | 80219 |
| Pipette Basket | 130 | 495 | 300 | 1 | 80222 |
| Extension for the handle (Pipet Basket 80219) | | | | 2 | 81219 |



Burettes VITLAB type Dr. Schilling



Burette made of borosilicate glass 3.3. Class B. Conformity with DIN ISO 384. With easily readable black scaling. Calibrated to deliver 'Ex'. Automatic zeroing.

The stopcock of the burette is made of high quality plastic. Its PTFE plug turns easily and allows fine titration.

A small bumper has been attached to the upper end of the upright measuring tube. This feature reduces the change of breakage.

Material: burette of borosilicate glass 3.3, filling tube PP, burette stopcock PMP/PTFE, reservoir bottle PE-LD.

| Volume ml | Tolerance ± ml | Graduation ml | Height mm | Bottle ml | SP | Art. No. |
|--------------|-------------------|------------------|--------------|--------------|----|----------|
| 25* | 0.05 | 0.05 | 900 | 1000 | 1 | 106599 |
| 50* | 0.10 | 0.10 | 900 | 1000 | 1 | 106699 |
| 25** | 0.05 | 0.05 | 900 | 1000 | 1 | 106399 |
| 50** | 0.10 | 0.10 | 900 | 1000 | 1 | 106499 |
| 25*** | 0.05 | 0.05 | 900 | 1000 | 1 | 106799 |
| 50*** | 0.10 | 0.10 | 900 | 1000 | 1 | 106899 |

* Glass tube with temperature-resilient plastic coating and Schellbach stripes (blue/white)

** With Schellbach stripes (blue/white)

*** Burette made of brown glass





Burettes

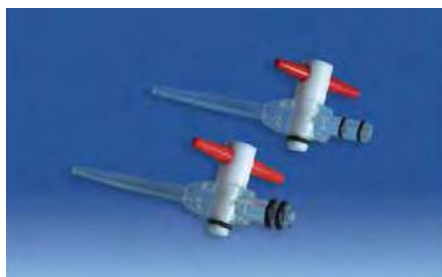
Plastic-coated burette made of borosilicate glass 3.3. Class B. Conformity with DIN ISO 384. With Schellbach stripes (blue/white) and easily readable black scaling. Calibrated to deliver 'Ex'.

The stopcock of the burette is made of high quality plastic. Its PTFE plug turns easily and allows fine titration.

The temperature-resilient plastic coating helps the entire device to resist breakage and glass fragments are confined within the sheath.

Material: burette of borosilicate glass 3.3, burette stopcock PMP/PTFE.

| Volume ml | Tolerance ± ml | Graduation ml | Length mm | SP | Art. No. |
|--------------|-------------------|------------------|--------------|----|----------|
| 25 | 0.05 | 0.05 | 800 | 2 | 105599 |
| 50 | 0.10 | 0.10 | 800 | 2 | 105699 |



Burette stopcocks, PMP/PTFE

Stopcocks made of PMP. Plugs of PTFE with polished surface turn easily but fit tightly. Insert with two seals.

Art. no. 105799: For burette tubes inner diam. 7.75 ± 0.1 mm.

Art. no. 105899: For burette tubes inner diam. 11.5 ± 0.1 mm.

| For Burettes ml | Height mm | Inner-Ø tip mm | Immersion depth mm | SP | Art. No. |
|--------------------|--------------|-------------------|-----------------------|----|----------|
| 25 | 90 | 1.25 | 17 | 5 | 105799 |
| 50 | 90 | 1.25 | 17 | 5 | 105899 |



Burette clamps, PP

Fit rods with diameters of 8 to 14 mm. Clamp arms have rubber-coated tips for secure gripping of burettes.

Graduations and meniscus are visible at all times. Comes supplied with a stainless steel spring.

| Type | SP | Art. No. |
|--------|----|----------|
| single | 5 | 80139 |
| double | 5 | 80140 |

Volume measurement

НеваРеактив

Graduated pitchers, PP



Highly transparent with raised, blue embossed scale.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 50 | 2 | 70 | 40 | 24 | 446081 |
| 100 | 2 | 80 | 50 | 24 | 447081 |
| 250 | 5 | 120 | 70 | 12 | 440081 |
| 500 | 10 | 133 | 91 | 12 | 441081 |
| 1000 | 10 | 170 | 116 | 6 | 442081 |
| 2000 | 20 | 215 | 150 | 6 | 443081 |
| 3000 | 50 | 242 | 170 | 6 | 444081 |
| 5000 | 100 | 270 | 210 | 6 | 445081 |



Graduated pitchers, PP



Highly transparent with raised scale.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 50 | 2 | 70 | 40 | 24 | 446941 |
| 100 | 2 | 80 | 50 | 24 | 447941 |
| 250 | 5 | 120 | 70 | 12 | 440941 |
| 500 | 10 | 133 | 91 | 12 | 441941 |
| 1000 | 10 | 170 | 116 | 6 | 442941 |
| 2000 | 20 | 215 | 150 | 6 | 443941 |
| 3000 | 50 | 242 | 170 | 6 | 444941 |
| 5000 | 100 | 270 | 210 | 6 | 445941 |



Graduated pitchers, SAN



Glass-clear, with raised scale.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 250 | 5 | 120 | 70 | 12 | 44091 |
| 500 | 10 | 133 | 91 | 12 | 44191 |
| 1000 | 10 | 170 | 116 | 6 | 44291 |
| 2000 | 20 | 215 | 150 | 6 | 44391 |
| 3000 | 50 | 242 | 170 | 6 | 44491 |



НеваРеактив



Graduated pitchers, nesting, PP

Highly transparent with printed, blue scale.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|-----------|---------------|-----------|------|----|----------|
| 250 | 5 | 115 | 75 | 12 | 480941 |
| 500 | 10 | 140 | 100 | 12 | 481941 |
| 1000 | 10 | 167 | 125 | 12 | 482941 |
| 2000 | 20 | 212 | 148 | 12 | 483941 |
| 3000 | 50 | 242 | 170 | 12 | 484941 |



Collectors, PP or SAN



With raised scale, graduation 20 ml, with white lid made of PC. Volume 2000 ml, Ø 150 mm, height 220 mm.

| Description | SP | Art. No. |
|---------------------------------|----|----------|
| SAN, raised scale | 6 | 97891 |
| PP, raised scale | 6 | 978941 |
| PP, raised, blue embossed scale | 6 | 978081 |
| Accessories for collectors | | |
| Lid, PC | 6 | 97791 |



Graduated beakers, PP

Highly transparent, with raised scale, wide round base.

| Volume ml | Graduation ml | Height mm | SP | Art. No. |
|-----------|---------------|-----------|----|----------|
| 100 | 2 | 120 | 12 | 80422 |
| 250 | 5 | 160 | 18 | 80423 |
| 500 | 10 | 180 | 8 | 80424 |
| 1000 | 20 | 270 | 3 | 80425 |

Volume measurement

НеваРеактив

Griffin beakers, PFA



Transparent, with raised scale. High temperature and chemical resistance.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 25 | 5 | 50 | 32 | 1 | 110205 |
| 50 | 10 | 59 | 39 | 1 | 110305 |
| 100 | 20 | 72 | 50 | 1 | 110405 |
| 250 | 50 | 96 | 67 | 1 | 110605 |
| 500 | 100 | 122 | 88 | 1 | 110905 |
| 1000 | 100 | 141 | 109 | 1 | 111005 |



Griffin beakers, ETFE



Transparent, with printed black scale. High temperature and chemical resistance.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 25 | 5 | 50 | 32 | 1 | 110204 |
| 50 | 10 | 59 | 39 | 1 | 110304 |
| 100 | 20 | 72 | 50 | 1 | 110404 |
| 250 | 50 | 96 | 67 | 1 | 110604 |
| 400 | 50 | 109 | 77 | 1 | 110704 |
| 500 | 100 | 122 | 88 | 1 | 110904 |
| 600 | 100 | 125 | 91 | 1 | 110804 |
| 1000 | 100 | 143 | 105 | 1 | 111004 |



Griffin beakers, PTFE



Opaque, virtually totally chemically inert, withstand high temperatures.

| Volume ml | Thickness mm | Height mm | Ø mm | SP | Art. No. |
|--------------|-----------------|--------------|---------|----|----------|
| 5 | 2 | 24 | 22 | 1 | 112197 |
| 10 | 2 | 39 | 25 | 1 | 112297 |
| 25 | 2 | 47 | 32 | 1 | 112397 |
| 50 | 2 | 55 | 42 | 1 | 112497 |
| 100 | 3 | 68 | 55 | 1 | 112597 |
| 250 | 3 | 93 | 62 | 1 | 112697 |
| 500 | 4 | 126 | 81 | 1 | 112797 |
| 1000 | 4 | 157 | 102 | 1 | 112897 |



НеваРеактив



Griffin beakers, PMP

Glass-clear, with printed red scale.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 10 | 2 | 35 | 25 | 12 | 60503 |
| 25 | 5 | 47 | 31 | 12 | 60603 |
| 50 | 10 | 60 | 40 | 12 | 60703 |
| 100 | 20 | 70 | 49 | 12 | 60803 |
| 150 | 20 | 80 | 56 | 12 | 60903 |
| 250 | 50 | 94 | 68 | 6 | 61003 |
| 400 | 50 | 109 | 77 | 6 | 61103 |
| 500 | 100 | 122 | 88 | 6 | 61803 |
| 600 | 100 | 125 | 91 | 6 | 61203 |
| 800 | 100 | 136 | 98 | 6 | 61303 |
| 1000 | 100 | 149 | 102 | 6 | 61403 |
| 2000 | 200 | 183 | 133 | 6 | 61503 |
| 3000 | 200 | 214 | 174 | 4 | 61603 |
| 5000 | 500 | 248 | 185 | 4 | 61703 |



Griffin beakers, PP



Highly transparent with printed blue scale.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 10 | 2 | 35 | 25 | 12 | 605081 |
| 25 | 5 | 47 | 31 | 12 | 606081 |
| 50 | 10 | 60 | 40 | 12 | 607081 |
| 100 | 20 | 70 | 49 | 12 | 608081 |
| 150 | 20 | 80 | 56 | 12 | 609081 |
| 250 | 50 | 94 | 68 | 6 | 610081 |
| 400 | 50 | 109 | 77 | 6 | 611081 |
| 500 | 100 | 122 | 88 | 6 | 618081 |
| 600 | 100 | 125 | 91 | 6 | 612081 |
| 800 | 100 | 136 | 98 | 6 | 613081 |
| 1000 | 100 | 149 | 102 | 6 | 614081 |
| 2000 | 200 | 183 | 133 | 6 | 615081 |
| 3000 | 200 | 214 | 174 | 4 | 616081 |
| 5000 | 500 | 248 | 185 | 4 | 617081 |

Volume measurement

НеваРеактив

Erlenmeyer flasks, PMP



Glass-clear, wide neck, with screw cap made of PP, NS-stoppers can also be used (not included).

| Volume ml | Graduation ml | Thread GL | Neck size NS | SP | Art. No. |
|--------------|------------------|--------------|-----------------|----|----------|
| 50 | 10 | 40 | 34/35 | 6 | 66695 |
| 100 | 20 | 40 | 34/35 | 6 | 66795 |
| 250 | 50 | 52 | 45/40 | 6 | 66895 |
| 500 | 100 | 52 | 45/40 | 6 | 66995 |
| 1000 | 200 | 52 | 45/40 | 4 | 67095 |



Erlenmeyer flasks, PP



Highly transparent, wide neck, with screw cap made of PP, NS-stoppers can also be used (not included).

| Volume ml | Graduation ml | Thread GL | Neck size NS | SP | Art. No. |
|--------------|------------------|--------------|-----------------|----|----------|
| 50 | 10 | 40 | 34/35 | 6 | 666941 |
| 100 | 20 | 40 | 34/35 | 6 | 667941 |
| 250 | 50 | 52 | 45/40 | 6 | 668941 |
| 500 | 100 | 52 | 45/40 | 6 | 669941 |
| 1000 | 200 | 52 | 45/40 | 4 | 670941 |



Sedimentation cone, SAN



Glass-clear, raised scale, low break risk, transparent. Produced according to Imhoff. With a threaded tip to allow easy cleaning.

Graduation:

| | | | |
|------|---------|---|--------|
| 0- | 2 ml | = | 0.1 ml |
| 2- | 10 ml | = | 0.5 ml |
| 10- | 40 ml | = | 1 ml |
| 40- | 100 ml | = | 2 ml |
| 100- | 1000 ml | = | 50 ml |



| Volume ml | SP | Art. No. |
|--------------|----|----------|
| 1000 | 3 | 75991 |

НеваРеактив

Sedimentation rack, PMMA



Holds two sedimentation cones.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 150 x 300 x 290 | 1 | 81056 |

Measuring beakers, PP



Transparent, with raised scale, suitable lid made of PE.

| Description | Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|------------------|--------------|------------------|--------------|---------|-----|----------|
| Measuring beaker | 30 | 1 | 42 | 37 | 100 | 69394 |
| Lid, PE | | | | | 100 | 69493 |

Competence in Lab Plastics

SAVING AND STORING

НеваРеактив



НеваРеактив

VITLAB [®]
Competence in Labware

VITsafe™ – the safety wash

Working with chemical substances, which are sometimes dangerous, requires a high level of responsibility and concentration. VITLAB provides laboratory equipment that fulfils safety requirements in the form of the VITsafe™ safety wash-bottles.

The VENT-CAP virtually prevents leaking, dripping or escaping of liquid from the dispensing tube, which sometimes can occur because of temperature changes in the laboratory.

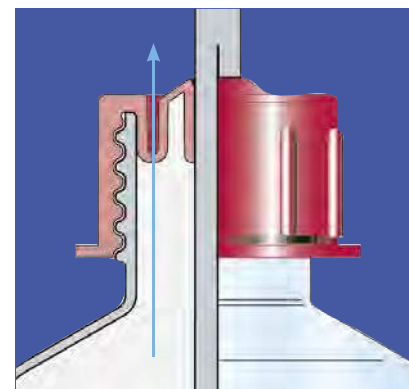
Permanent imprints for solvent labels, full hazard symbols and other individual information ensure the highest level of safety. You can choose from a variety of 18 laboratory solvents.



-bottle

VENT-CAP

The proprietary design of the metal-free VENT-CAP, red coloured, reduces excess static pressure according to the principle of gas permeability, or respectively steam permeability. Leakage or dripping is almost completely eliminated.



Narrow-mouth or wide-mouth

All VITsafe™ safety wash-bottles are available in two variations. To MTLAB's traditional narrow-mouth wash-bottles we have added a new line of wide-mouth wash-bottles that simplify filling, even without a funnel.



Safety imprint

All VITsafe™ safety wash-bottles have permanent imprints stating the statutory information required in accordance with GHS, as well as other important information: Chemical name in German, English, French and Spanish, hazard pictogram and labelling, chemical formula, CAS number, hazard statements H-phrases, precautionary statements P-phrases, as well as the GHS code.





VITsafe™ safety wash-bottles, narrow-mouth

Made of PE-LD with safety imprint in accordance with regulation (EC) No. 1272/2008 (GHS) and VENT-CAP screw cap.

Dispensing tube with pointed end made of PP to optimize the backflow of the medium. The lack of a spray insert and the even molding of the inner-diameter make it possible to avoid almost all turbulence in the liquid.

Permanent imprints stating the statutory information required in accordance with GHS, as well as all important information: quadrilingual chemical name in German, English, French and Spanish, chemical formula, CAS number, hazard pictogram, signal word, hazard statements H-phrases, precautionary statements P-phrases plus NFPA code.

Available in 3 sizes: 250, 500 and 1000 ml.

| Volume ml | Thread GL | Imprint | Material | SP | Art. No. |
|--------------|--------------|---------------------------|----------|----|----------|
| 250 | 25 | Acetone | PE-LD | 12 | 1431829 |
| 500 | 25 | Acetone | PE-LD | 12 | 1432829 |
| 1000 | 32 | Acetone | PE-LD | 12 | 1433829 |
| 500 | 25 | Acetonitril | PE-LD | 6 | 1332969 |
| 250 | 25 | Distilled Water | PE-LD | 12 | 1331819 |
| 500 | 25 | Distilled Water | PE-LD | 12 | 1332819 |
| 1000 | 32 | Distilled Water | PE-LD | 12 | 1333819 |
| 500 | 25 | Acetic acid conc. | PE-LD | 6 | 1332979 |
| 250 | 25 | Ethanol | PE-LD | 12 | 1331869 |
| 500 | 25 | Ethanol | PE-LD | 12 | 1332869 |
| 1000 | 32 | Ethanol | PE-LD | 12 | 1333869 |
| 250 | 25 | Ethyl acetate | PE-LD | 12 | 1331859 |
| 500 | 25 | Ethyl acetate | PE-LD | 12 | 1332859 |
| 1000 | 32 | Ethyl acetate | PE-LD | 12 | 1333859 |
| 250 | 25 | Isopropanol | PE-LD | 12 | 1331849 |
| 500 | 25 | Isopropanol | PE-LD | 12 | 1332849 |
| 1000 | 32 | Isopropanol | PE-LD | 12 | 1333849 |
| 250 | 25 | Methanol | PE-LD | 12 | 1331839 |
| 500 | 25 | Methanol | PE-LD | 12 | 1332839 |
| 1000 | 32 | Methanol | PE-LD | 12 | 1333839 |
| 500 | 25 | Methylene dichloride | PE-LD | 6 | 1332879 |
| 500 | 25 | Methyl ethyl ketone (MEK) | PE-LD | 6 | 1432989 |
| 500 | 25 | Heptane | PE-LD | 6 | 1432909 |
| 500 | 25 | Hexane | PE-LD | 6 | 1432899 |
| 500 | 25 | N,N-Dimethylformamid | PE-LD | 6 | 1332889 |
| 500 | 25 | Pentane | PE-LD | 6 | 1432959 |
| 500 | 25 | Tetrahydrofurane (THF) | PE-LD | 6 | 1432939 |
| 500 | 25 | Toluene | PE-LD | 6 | 1432949 |
| 500 | 25 | Xylene | PE-LD | 6 | 1332959 |

Please see wash bottles PE-LD/PP for height and diameter

Further imprints on request.

VITsafe™ safety wash-bottles, wide-mouth



Made of PE-LD with safety imprint in accordance with regulation (EC) No. 1272/2008 (GHS) and VENT-CAP screw cap.

Dispensing tube with pointed end made of PP to optimize the backflow of the medium. The lack of a spray insert and the even molding of the inner-diameter make it possible to avoid almost all turbulence in the liquid.

Permanent imprints stating the statutory information required in accordance with GHS, as well as all important information: quadrilingual chemical name in German, English, French and Spanish, chemical formula, CAS number, hazard pictogram, signal word, hazard statements H-phrases, precautionary statements P-phrases plus NFPA code.

Available in 3 sizes: 250, 500 and 1000 ml.



| Volume ml | Thread GL | Imprint | Material | SP | Art. No. |
|-----------|-----------|---------------------------|----------|----|----------|
| 250 | 45 | Acetone | PE-LD | 12 | 1451829 |
| 500 | 45 | Acetone | PE-LD | 12 | 1452829 |
| 1000 | 63 | Acetone | PE-LD | 12 | 1453829 |
| 500 | 45 | Acetonitrile | PE-LD | 6 | 1352969 |
| 250 | 45 | Distilled Water | PE-LD | 12 | 1351819 |
| 500 | 45 | Distilled Water | PE-LD | 12 | 1352819 |
| 1000 | 63 | Distilled Water | PE-LD | 12 | 1353819 |
| 500 | 45 | Acetic acid conc. | PE-LD | 6 | 1352979 |
| 250 | 45 | Ethanol | PE-LD | 12 | 1351869 |
| 500 | 45 | Ethanol | PE-LD | 12 | 1352869 |
| 1000 | 63 | Ethanol | PE-LD | 12 | 1353869 |
| 250 | 45 | Ethyl acetate | PE-LD | 12 | 1351859 |
| 500 | 45 | Ethyl acetate | PE-LD | 12 | 1352859 |
| 1000 | 63 | Ethyl acetate | PE-LD | 12 | 1353859 |
| 250 | 45 | Isopropanol | PE-LD | 12 | 1351849 |
| 500 | 45 | Isopropanol | PE-LD | 12 | 1352849 |
| 1000 | 63 | Isopropanol | PE-LD | 12 | 1353849 |
| 250 | 45 | Methanol | PE-LD | 12 | 1351839 |
| 500 | 45 | Methanol | PE-LD | 12 | 1352839 |
| 1000 | 63 | Methanol | PE-LD | 12 | 1353839 |
| 500 | 45 | Methylene dichloride | PE-LD | 6 | 1352879 |
| 500 | 45 | Methyl ethyl ketone (MEK) | PE-LD | 6 | 1452989 |
| 500 | 45 | Heptane | PE-LD | 6 | 1452909 |
| 500 | 45 | Hexane | PE-LD | 6 | 1452899 |
| 500 | 45 | N,N-Dimethyl formamide | PE-LD | 6 | 1352889 |
| 500 | 45 | Pentane | PE-LD | 6 | 1452959 |
| 500 | 45 | Tetrahydrofurane (THF) | PE-LD | 6 | 1452939 |
| 500 | 45 | Toluene | PE-LD | 6 | 1452949 |
| 500 | 45 | Xylene | PE-LD | 6 | 1352959 |

Please see wash bottles PE-LD/PP for height and diameter

Further imprints on request.



VENT-CAP wash-bottle caps, PP

Screw cap and dispensing tube with pointed end made of PP to optimize the backflow of the medium. The lack of a spray insert and the even molding of the inner-diameter make it possible to avoid almost all turbulence in the liquid.

| Thread GL | SP | Art. No. |
|--------------|----|----------|
| 25 | 12 | 833019 |
| 32 | 12 | 833029 |
| 45 | 12 | 833039 |
| 63 | 12 | 833049 |



Wash-bottles, with imprint



Narrow-/Wide-mouth wash bottles made of PP or PE-LD, transparent. Dispensing tube with pointed end made of PP to optimize the backflow of the medium. The lack of a spray insert and the even molding of the inner diameter make it possible to avoid almost all turbulence in the liquid. Imprint upon request, for non-hazardous substances in accordance with the Ordinance on Hazardous Substances.

| Volume ml | Thread GL | Imprint | Material | SP | Art. No. |
|--------------|--------------|-------------|----------|----|----------|
| 250 | 25 | Dist. Water | PE-LD | 12 | 133181 |
| 250 | 45 | Dist. Water | PE-LD | 12 | 135181 |
| 500 | 25 | Dist. Water | PE-LD | 12 | 133281 |
| 500 | 45 | Dist. Water | PE-LD | 12 | 135281 |
| 1000 | 32 | Dist. Water | PE-LD | 12 | 133381 |
| 1000 | 63 | Dist. Water | PE-LD | 12 | 135381 |

Other imprints are available on request.

Please see wash bottles PE-LD/PP for height and diameter



Wash-bottles, PFA-economy



Narrow-mouth wash bottles, transparent, with ETFE screw cap and dispensing tube made of FEP. Withstand high temperatures and chemical attack.

| Volume ml | Thread GL | Height* mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------------|---------|----|----------|
| 250 | 25 | 157 | 61 | 1 | 108792 |
| 500 | 25 | 189 | 76 | 1 | 108892 |
| 1000 | 32 | 233 | 96 | 1 | 108992 |

* without wash-bottle cap

Wash-bottles, PP



Narrow-/Wide-mouth bottles made of PP, transparent.
 Dispensing tube with pointed end made from PP to optimize the backflow of the medium.
 The lack of a spray insert and the even molding of the inner-diameter make it possible to avoid almost all turbulence in the liquid.

| Volume ml | Thread GL | Height* mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------------|---------|----|----------|
| 250 | 25 | 135 | 58 | 12 | 94993 |
| 250 | 45 | 146 | 58 | 12 | 93793 |
| 500 | 25 | 180 | 74 | 12 | 95093 |
| 500 | 45 | 166 | 76 | 12 | 93993 |
| 1000 | 32 | 215 | 92 | 12 | 95193 |
| 1000 | 63 | 226 | 91 | 12 | 94193 |

* without wash-bottle cap



Wash-bottles, PE-LD/PP

Narrow-/Wide-mouth bottles made of PE-LD, transparent.
 Dispensing tube with pointed end and screw cap made from PP to optimize the backflow of the medium. The lack of a spray insert and the even molding of the inner-diameter make it possible to avoid almost all turbulence in the liquid.

| Volume ml | Thread GL | Height* mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------------|---------|----|----------|
| 50 | 18 | 73 | 37 | 24 | 94588 |
| 100 | 18 | 95 | 43 | 24 | 94688 |
| 250 | 25 | 135 | 58 | 12 | 94988 |
| 250 | 45 | 146 | 58 | 12 | 93788 |
| 500 | 25 | 180 | 74 | 12 | 95088 |
| 500 | 45 | 166 | 76 | 12 | 93988 |
| 1000 | 32 | 221 | 92 | 12 | 95188 |
| 1000 | 63 | 226 | 91 | 12 | 94188 |

* without wash-bottle cap



Wash-bottles, PE-LD

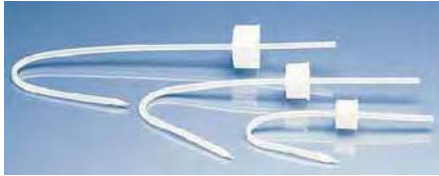


Narrow-mouth bottles, transparent, with screw cap and dispensing tube made of PE-LD.

| Volume ml | Thread GL | Height* mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------------|---------|----|----------|
| 100 | 18 | 106 | 45 | 50 | 134293 |
| 250 | 25 | 140 | 59 | 50 | 134393 |
| 500 | 25 | 180 | 75 | 50 | 134493 |
| 1000 | 28 | 212 | 94 | 25 | 134593 |

* without bottle cap





Wash-bottle caps, PP

Screw cap and dispensing tube made of PP with drawn-out tip.

| Thread GL | SP | Art. No. |
|--------------|----|----------|
| 18 | 24 | 83300 |
| 25 | 12 | 83301 |
| 32 | 12 | 83302 |
| 45 | 12 | 83303 |
| 63 | 12 | 83304 |



Wash-bottles, colour coded, PE-LD



Narrow-mouth bottles made of PE-LD, four colours.

| Volume ml | Colour | Thread GL | Height* | Ø mm | SP | Art. No. |
|--------------|--------|--------------|---------|---------|----|----------|
| 250 | red | 25 | 135 | 58 | 5 | 132603 |
| 250 | green | 25 | 135 | 58 | 5 | 132605 |
| 250 | yellow | 25 | 135 | 58 | 5 | 132606 |
| 250 | blue | 25 | 135 | 58 | 5 | 132608 |
| 500 | red | 25 | 180 | 74 | 5 | 132703 |
| 500 | green | 25 | 180 | 74 | 5 | 132705 |
| 500 | yellow | 25 | 180 | 74 | 5 | 132706 |
| 500 | blue | 25 | 180 | 74 | 5 | 132708 |

* without wash-bottle cap



Integral wash-bottles, PE-LD

Transparent, with integrally moulded tube. No need to take it off when refilling.

| Volume ml | Thread GL | Height mm | SP | Art. No. |
|--------------|--------------|--------------|----|----------|
| 250 | 32 | 143 | 10 | 81633 |
| 500 | 32 | 181 | 10 | 81634 |

Dropping bottles, PE-LD/PE-HD



Narrow-mouth bottles made of PE-LD, transparent, with dropper insert and mating screw cap, PE-HD.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 50 | 18 | 117 | 37 | 24 | 94587 |
| 100 | 18 | 142 | 43 | 24 | 94687 |
| 250 | 25 | 183 | 58 | 12 | 94987 |
| 500 | 25 | 228 | 74 | 12 | 95087 |
| 1000 | 32 | 269 | 92 | 12 | 95187 |



Caps with dropper inserts, PE-HD



| Thread GL | SP | Art. No. |
|--------------|----|----------|
| 18 | 24 | 83306 |
| 25 | 12 | 83307 |
| 32 | 12 | 83308 |



Dropping bottles, PE-LD



Narrow-mouth bottles, transparent, with dropper insert and locking cap made of PE-LD.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|-----|----------|
| 20 | 14 | 88 | 31 | 100 | 132193 |
| 30 | 14 | 96 | 34 | 100 | 132293 |
| 50 | 18 | 115 | 39 | 100 | 132393 |
| 100 | 18 | 136 | 45 | 50 | 132493 |
| 250 | 25 | 170 | 59 | 50 | 132593 |
| 500 | 25 | 209 | 75 | 50 | 132693 |





Spray bottles, PP

Hand operated pump-spray-bottles. Spray-nozzle adjustable from a fine mist to a narrow jet reaching 3 m to 4 m.



| Volume ml | Colour | SP | Art. No. |
|-----------|-------------|----|----------|
| 400 | white | 5 | 53510 |
| 850 | white | 5 | 53610 |
| 1000 | transparent | 5 | 95286 |



Narrow-mouth bottles, PFA



Transparent, supplied with screw cap with buttress thread made of and a moulded-in sealing ring. Ideal as packaging bottle for pure chemicals. High temperature resistance from -200 °C to +250 °C.

| Volume ml | Thread* | Height mm | Ø mm | SP | Art. No. |
|-----------|---------|-----------|------|----|----------|
| 50 | S 28 | 86 | 37 | 1 | 109297 |
| 100 | S 28 | 120 | 45 | 1 | 109397 |
| 250 | S 28 | 160 | 61 | 1 | 108297 |
| 500 | S 28 | 190 | 76 | 1 | 108397 |
| 1000 | S 28 | 240 | 96 | 1 | 108497 |

* Buttress thread



Narrow-mouth bottles, PFA-economy



Transparent, supplied with hermetically sealing screw cap made of ETFE and a moulded-in sealing ring. Withstand high temperatures and chemical attack.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 50 | 18 | 90 | 37 | 1 | 108092 |
| 100 | 18 | 114 | 45 | 1 | 108192 |
| 250 | 25 | 157 | 61 | 1 | 108292 |
| 500 | 25 | 189 | 76 | 1 | 108392 |
| 1000 | 32 | 233 | 96 | 1 | 108492 |

Narrow-mouth bottles, PE-HD



Transparent, with screw cap with moulded-in sealing ring made of PP, wide shoulder. Heavy duty.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 4 | 20 | 41 | 16 | 12 | 5583170 |
| 8 | 20 | 44 | 25 | 12 | 5583180 |
| 15 | 20 | 57 | 25 | 12 | 5583190 |
| 30 | 20 | 70 | 31 | 12 | 5583100 |
| 60 | 20 | 84 | 38 | 12 | 5583110 |
| 125 | 24 | 101 | 50 | 12 | 5583120 |
| 250 | 24 | 134 | 61 | 12 | 5583130 |
| 500 | 36 | 185 | 75 | 12 | 5583140 |
| 1000 | 36 | 206 | 92 | 6 | 5583150 |



Narrow-mouth bottles, PE-HD, brown



For storage of light-sensitive substances. With screw cap with moulded-in sealing ring, wide shoulder. Heavy duty.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 4 | 20 | 41 | 16 | 12 | 5581170 |
| 8 | 20 | 44 | 25 | 12 | 5581180 |
| 15 | 20 | 57 | 25 | 12 | 5581190 |
| 30 | 20 | 70 | 32 | 12 | 5581200 |
| 60 | 20 | 84 | 40 | 12 | 5581210 |
| 125 | 24 | 101 | 51 | 12 | 5581220 |
| 250 | 24 | 134 | 62 | 12 | 5581230 |
| 500 | 36 | 185 | 75 | 12 | 5581240 |
| 1000 | 36 | 206 | 92 | 6 | 5581250 |



Narrow-mouth bottles, PP



Transparent, with screw cap with moulded-in sealing ring, wide shoulder. Heavy duty.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 4 | 20 | 41 | 16 | 12 | 5582070 |
| 8 | 20 | 44 | 25 | 12 | 5582080 |
| 15 | 20 | 57 | 25 | 12 | 5582090 |
| 30 | 20 | 70 | 32 | 12 | 5582100 |
| 60 | 20 | 84 | 40 | 12 | 5582110 |
| 125 | 24 | 101 | 51 | 12 | 5582120 |
| 250 | 24 | 134 | 62 | 12 | 5582130 |
| 500 | 36 | 185 | 75 | 12 | 5582140 |
| 1000 | 36 | 206 | 92 | 6 | 5582150 |





Narrow-mouth bottles, PP

Transparent, with screw cap with moulded-in sealing ring made of PP, high shoulder.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 50 | 18 | 73 | 37 | 24 | 94594 |
| 100 | 18 | 95 | 43 | 24 | 94694 |
| 250 | 25 | 135 | 58 | 12 | 94994 |
| 500 | 25 | 180 | 74 | 12 | 95094 |
| 1000 | 32 | 215 | 92 | 12 | 95194 |



Narrow-mouth bottles, PE-LD



Transparent, with screw cap with moulded-in sealing ring made of PP, high shoulder.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 10 | 11 | 42 | 22 | 24 | 94389 |
| 20 | 11 | 59 | 24 | 24 | 94489 |
| 50 | 18 | 73 | 37 | 24 | 94589 |
| 100 | 18 | 95 | 43 | 24 | 94689 |
| 250 | 25 | 135 | 58 | 12 | 94989 |
| 500 | 25 | 180 | 74 | 12 | 95089 |
| 1000 | 32 | 221 | 92 | 12 | 95189 |



Narrow-mouth bottles, PE-LD



Transparent, with screw cap made of PE-LD, flat shoulder.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|-----|----------|
| 10 | 14 | 50 | 26 | 100 | 138093 |
| 20 | 14 | 58 | 31 | 100 | 138193 |
| 30 | 14 | 66 | 34 | 100 | 138293 |
| 50 | 18 | 85 | 39 | 100 | 138393 |
| 100 | 18 | 106 | 45 | 50 | 138493 |
| 250 | 25 | 140 | 59 | 50 | 138593 |
| 500 | 25 | 180 | 75 | 50 | 138693 |
| 1000 | 28 | 212 | 94 | 25 | 138793 |
| 2000 | 28 | 264 | 117 | 25 | 138893 |

Narrow-mouth bottles, PE-HD

Transparent, square, with screw cap made of PP.

| Volume ml | Thread GL | Height mm | Size mm | Inner Ø neck mm | SP | Art. No. |
|-----------|-----------|-----------|---------|-----------------|-----|----------|
| 100 | 25 | 76 | 43 x 43 | 17,5 | 24 | 91789 |
| 100 | 25 | 76 | 43 x 43 | 17,5 | 500 | 128493 |
| 150* | 18 | 93 | 47 x 47 | 12 | 24 | 91889 |
| 250 | 28 | 80 | 80 x 80 | 21 | 24 | 91989 |
| 250 | 28 | 80 | 80 x 80 | 21 | 250 | 128593 |
| 500 | 32 | 106 | 90 x 90 | 24 | 12 | 92089 |
| 500 | 32 | 106 | 90 x 90 | 24 | 100 | 128693 |
| 1000 | 32 | 187 | 80 x 80 | 24 | 12 | 92189 |
| 1000 | 32 | 187 | 80 x 80 | 24 | 50 | 128793 |

* Made of PE-LD



Wide-mouth bottles, PFA



Transparent, supplied with screw cap with buttress thread made of PFA and a moulded-in sealing ring. Ideal as packaging bottle for pure chemicals. High temperature resistance from -200 °C to +250 °C.

| Volume ml | Thread* | Height mm | Ø mm | SP | Art. No. |
|-----------|---------|-----------|------|----|----------|
| 250 | S 40 | 150 | 61 | 1 | 109497 |
| 500 | S 40 | 179 | 76 | 1 | 109597 |
| 1000 | S 40 | 217 | 96 | 1 | 109697 |
| 2000 | S 40 | 245 | 130 | 1 | 109797 |
| 2500 | S 40 | 290 | 130 | 1 | 109897 |
| 5000 | S 40 | 320 | 175 | 1 | 109997 |

* Buttress thread



Wide-mouth bottles, PTFE



Opaque with caps made of PTFE.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 10 | 12 | 50 | 26 | 1 | 122597 |
| 25 | 19 | 61 | 33 | 1 | 122697 |
| 50 | 25 | 76 | 43 | 1 | 122797 |
| 100 | 35 | 88 | 52 | 1 | 122897 |





Wide-mouth bottles, PE-HD

Transparent, with screw cap with moulded-in sealing ring made of PP. Heavy duty.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 30 | 28 | 70 | 32 | 12 | 5584200 |
| 60 | 28 | 84 | 40 | 12 | 5584210 |
| 125 | 38 | 101 | 51 | 12 | 5584220 |
| 250 | 43 | 134 | 62 | 12 | 5584230 |
| 500 | 53 | 185 | 75 | 12 | 5584240 |
| 1000 | 63 | 206 | 92 | 6 | 5584250 |



Wide-mouth bottles, PE-HD, brown



For storage of light-sensitive substances.
With screw cap with moulded-in sealing ring.
Heavy duty.

| Volume ml | Thread mm | Ø mm | Height mm | SP | Art. No. |
|-----------|-----------|------|-----------|----|----------|
| 30 | 28 | 70 | 31 | 12 | 5581300 |
| 60 | 28 | 84 | 38 | 12 | 5581310 |
| 125 | 38 | 98 | 50 | 12 | 5581320 |
| 250 | 43 | 131 | 61 | 12 | 5581330 |
| 500 | 53 | 180 | 75 | 12 | 5581340 |
| 1000 | 63 | 200 | 92 | 6 | 5581350 |



Wide-mouth bottles, PP



Transparent, with screw cap with moulded-in sealing ring.
Heavy duty.

| Volume | Thread mm | Height mm | Ø mm | SP | Art. No. |
|--------|-----------|-----------|------|----|----------|
| 30 | 28 | 70 | 31 | 12 | 5582200 |
| 60 | 28 | 84 | 38 | 12 | 5582210 |
| 125 | 38 | 98 | 50 | 12 | 5582220 |
| 250 | 43 | 131 | 61 | 12 | 5582230 |
| 500 | 56 | 180 | 75 | 12 | 5582240 |
| 1000 | 63 | 200 | 92 | 6 | 5582250 |

Saving and storing

НеваРеактив

Wide-mouth bottles, PP



Transparent, with screw cap with moulded-in sealing ring made of PP.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 50 | 32 | 87 | 39 | 24 | 93394 |
| 100 | 32 | 94 | 47 | 24 | 93494 |
| 250 | 45 | 146 | 58 | 12 | 93794 |
| 500 | 45 | 166 | 76 | 12 | 93994 |
| 1000 | 63 | 226 | 91 | 12 | 94194 |



Wide-mouth bottles, PE-LD



Transparent, with screw cap with moulded-in sealing ring made of PP.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 50 | 32 | 87 | 39 | 24 | 93389 |
| 100 | 32 | 94 | 47 | 24 | 93489 |
| 250 | 45 | 146 | 58 | 12 | 93789 |
| 500 | 45 | 166 | 76 | 12 | 93989 |
| 1000 | 63 | 226 | 91 | 12 | 94189 |



Wide-mouth bottles, PE-LD



Transparent, with screw cap with moulded-in sealing ring made of PE-LD.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|-----|----------|
| 50 | 32 | 80 | 38 | 100 | 139393 |
| 100 | 32 | 94 | 48 | 50 | 139493 |
| 250 | 40 | 126 | 62 | 50 | 139593 |
| 500 | 50 | 155 | 76 | 50 | 139693 |
| 1000 | 65 | 208 | 93 | 25 | 139793 |
| 2000 | 65 | 246 | 120 | 25 | 139893 |



НеваРеактив



Wide-mouth bottles, PE-HD

Transparent, square, with screw cap made of PP.

| Volume ml | Thread GL | Height mm | Size mm | SP | Art. No. |
|-----------|-----------|-----------|---------|-----|----------|
| 100 | 32 | 78 | 46 x 46 | 24 | 92489 |
| 100 | 32 | 78 | 46 x 46 | 500 | 129493 |
| 250 | 50 | 83 | 80 x 80 | 24 | 92689 |
| 250 | 50 | 83 | 80 x 80 | 250 | 129593 |
| 500 | 65 | 120 | 90 x 90 | 12 | 92789 |
| 500 | 65 | 120 | 90 x 90 | 100 | 129693 |
| 1000 | 65 | 168 | 90 x 90 | 12 | 92889 |
| 1000 | 65 | 168 | 90 x 90 | 50 | 129793 |



Wide-mouth bottles, PE-LD

Transparent, with leakproof caps with seal. Improved design having eyes for attaching tags or seals.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 50 | 24 | 75 | 40 | 25 | 80408 |
| 100 | 24 | 90 | 50 | 25 | 80409 |
| 250 | 36 | 130 | 60 | 25 | 80410 |
| 500 | 36 | 160 | 75 | 10 | 80411 |
| 1000 | 50 | 200 | 95 | 10 | 80412 |
| 2000 | 50 | 250 | 115 | 10 | 80413 |



Screw caps, PFA

With moulded-in sealing ring.

| Thread | SP | Art. No. |
|--------|----|----------|
| GL 18 | 12 | 102597 |
| GL 25 | 12 | 102397 |
| S*28 | 12 | 102697 |
| S*40 | 12 | 102897 |

* Buttress thread

Saving and storing

НеваРеактив

Screw caps, PP

With moulded-in sealing ring.

| Thread GL | SP | Art. No. |
|--------------|----|----------|
| 18 | 24 | 83310 |
| 25 | 12 | 83311 |
| 32 | 12 | 83312 |
| 40 | 12 | 83315 |
| 45 | 12 | 83313 |
| 52 | 12 | 83316 |
| 56 | 12 | 83317 |
| 63 | 12 | 83314 |



Reagent bottles, PP

Narrow-mouth.

Transparent, with screw cap made of PP.

Size 5000 ml with 1, size 10000 ml with 2 handles.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 100 | 18 | 100 | 52 | 20 | 100389 |
| 250 | 25 | 132 | 70 | 20 | 100489 |
| 500 | 25 | 165 | 87 | 10 | 100589 |
| 1000 | 32 | 202 | 108 | 10 | 100689 |
| 2000 | 32 | 245 | 131 | 6 | 100789 |
| 5000 | 45 | 315 | 178 | 1 | 100889 |
| 10000 | 63 | 394 | 222 | 1 | 100989 |



Reagent bottles, PP

Narrow-mouth.

Transparent, with NS stopper made of PP.

Size 5000 ml with 1 handle.

| Volume ml | Neck size NS | Height mm | Ø mm | SP | Art. No. |
|--------------|-----------------|--------------|---------|----|----------|
| 100 | 14/23 | 106 | 52 | 20 | 100394 |
| 250 | 19/26 | 138 | 70 | 20 | 100494 |
| 500 | 24/29 | 172 | 87 | 10 | 100594 |
| 1000 | 29/32 | 213 | 108 | 10 | 100694 |
| 2000 | 29/32 | 255 | 131 | 6 | 100794 |
| 5000 | 45/40 | 325 | 178 | 1 | 100894 |



НеваРеактив



Reagent bottles, PP

Wide-mouth.
Transparent, with screw caps made of PP.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 100 | 32 | 96 | 55 | 20 | 101589 |
| 250 | 45 | 132 | 73 | 20 | 101689 |
| 500 | 45 | 172 | 87 | 10 | 101789 |
| 1000 | 63 | 204 | 108 | 10 | 101889 |
| 2000 | 63 | 243 | 131 | 6 | 101989 |



Reagent bottles, PP

Wide-mouth.
Transparent, with NS stopper made of PP.

| Volume ml | Neck size NS | Height mm | Ø mm | SP | Art. No. |
|-----------|--------------|-----------|------|----|----------|
| 100* | 29/32 | 111 | 55 | 20 | 101594 |
| 250 | 34/35 | 144 | 73 | 20 | 101694 |
| 500 | 45/40 | 183 | 87 | 10 | 101794 |
| 1000 | 60/46 | 214 | 108 | 10 | 101894 |
| 2000 | 60/46 | 263 | 131 | 6 | 101994 |

* Not in the picture
with square NS stopper, red



Reagent bottles opaque, PP



Wide-mouth, made of opaque pigmented plastic PP for light-sensitive substances in accordance to DIN 12039.

Transparent, with NS stopper made of PP.

| Volume ml | Neck size NS | Height mm | Ø mm | SP | Art. No. |
|-----------|--------------|-----------|------|----|----------|
| 500 | 45/40 | 183 | 87 | 10 | 1017940 |
| 1000 | 60/46 | 214 | 108 | 10 | 1018940 |
| 2000 | 60/46 | 263 | 131 | 6 | 1019940 |

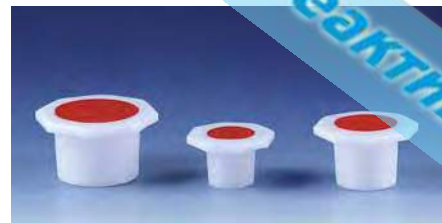
Saving and storing

НеваРеактив

Standard joint stoppers, PP

| NS | SP | Art. No. |
|---------|----|----------|
| 7/16* | 1 | 90594 |
| 10/19* | 1 | 90694 |
| 12/21* | 1 | 90794 |
| 14/23* | 1 | 90894 |
| 19/26* | 1 | 90994 |
| 24/29* | 1 | 91094 |
| 29/32* | 1 | 91194 |
| 34/35** | 1 | 91294 |
| 45/40** | 1 | 91394 |
| 60/46** | 1 | 91494 |

* square, red
** hexagonal, black



Urinals, PP and PC



Bottle made of PP or PC, raised scale, graduation 50 ml. Available with or without attached lid made of PE-LD. Bottles are autoclavable at temperatures up to 121 °C.

| Type | Volume ml | SP | Art. No. |
|------------------------|-----------|----|----------|
| Urinal without lid, PP | 1000 | 6 | 97494 |
| Urinal with lid, PP | 1000 | 6 | 00394 |
| Urinal without lid, PC | 1000 | 6 | 97496 |
| Urinal with lid, PC | 1000 | 6 | 00396 |
| Lid, PE-LD | | 6 | 97593 |



Storage bottles, PE-LD, with tap

Supplied with screw caps and carrying bails, exchangeable tap with 3/4" pipe fitting.

| Volume l | Thread mm | Height mm | Ø mm | SP | Art. No. |
|----------|-----------|-----------|------|----|----------|
| 5 | 45 | 335 | 165 | 1 | 81660 |
| 10 | 55 | 415 | 210 | 1 | 81662 |
| 25 | 55 | 525 | 280 | 1 | 81664 |
| 50 | 55 | 605 | 365 | 1 | 81666 |



НеваРеактив



Storage bottles, PE-LD, without tap

Supplied completely with screw caps and carrying bails.

| Volume l | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-------------|--------------|--------------|---------|----|----------|
| 5 | 90 | 315 | 165 | 1 | 81640 |
| 5 | 45 | 335 | 165 | 1 | 81644 |
| 10 | 120 | 390 | 210 | 1 | 81642 |
| 10 | 55 | 415 | 210 | 1 | 81646 |
| 25 | 55 | 525 | 280 | 1 | 81648 |
| 50 | 55 | 605 | 365 | 1 | 81650 |



Tap for storage bottles, PP

| Description | SP | Art. No. |
|---|----|----------|
| Tap, PP, for narrow-neck storage bottles, art. no 81660 to 81666. | 1 | 80375 |



Container, PP

Save valuable space with this compact container system. Each container is supplied with screw cap and volume scale. The unique stopcock is absolutely water-tight when not in use. By inverting the special spout, any residual dropping after closing is prevented. Supplied without stopcock.

Capacity 6 l

Measurements 65 x 335 x 335 mm

Top Ø 41 mm

| Description | SP | Art. No. |
|---------------------------------|----|----------|
| Compact container | 10 | 155094 |
| Vented screw cap | 1 | 155594 |
| Safety support for 2 containers | 1 | 155699 |
| Safety support for 3 containers | 1 | 155799 |
| Stopcock | 1 | 156094 |

Sample containers, PFA



With screw cap made of PFA.
For sample collection, transport and storage of samples.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 30 | 40 | 54 | 38 | 1 | 130297 |
| 60 | 40 | 90 | 38 | 1 | 130397 |
| 90 | 56 | 62 | 54 | 1 | 130497 |
| 180 | 56 | 112 | 54 | 1 | 130597 |



Sample containers, PE-HD

With screw cap made of PE-HD.
For sample collection, transport and storage of samples.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 5 | 23 | 36 | 21 | 10 | 80910 |
| 10 | 23 | 58 | 21 | 10 | 80911 |



Sample containers, PP



With screw cap made of PP.
For sample collection, transport and storage of samples.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|--------------|---------|----|----------|
| 30 | 40 | 54 | 38 | 10 | 130294 |
| 60 | 40 | 90 | 38 | 10 | 130394 |
| 90 | 56 | 62 | 54 | 10 | 130494 |
| 180 | 56 | 112 | 54 | 10 | 130594 |





Sample vials, PP

Transparent, with snap-on lid made of PE-LD.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|------|----|----------|
| 5 | 25 | 20 | 25 | 68594 |
| 8 | 37 | 20 | 25 | 68694 |
| 12 | 37 | 22 | 25 | 68794 |
| 18 | 57 | 22 | 25 | 68894 |
| 28 | 52 | 30 | 10 | 68994 |
| 35 | 67 | 30 | 10 | 69094 |
| 50 | 97 | 30 | 10 | 69194 |
| 160 | 110 | 50 | 10 | 69294 |



Sample vials, PE-LD

Transparent, with attached snap-on lid made of PE-LD.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|------|-----|----------|
| 1 | 32 | 9 | 500 | 80730 |
| 2 | 32 | 14 | 100 | 80731 |
| 5 | 50 | 15 | 100 | 80737 |
| 8 | 56 | 17 | 100 | 80732 |
| 10 | 32 | 22 | 100 | 80733 |
| 25 | 72 | 24 | 100 | 80734 |
| 30 | 52 | 31 | 50 | 80736 |
| 50 | 74 | 30 | 50 | 80735 |



Sample vials, PFA



With or without individually calibrated ring mark at 10 ml with screw cap GL 25 made of PFA (on the left side in the picture).

| Type | Volume ml | Height mm | Ø mm | SP | Art. No. |
|------------------------|-----------|-----------|------|----|----------|
| With ring mark at 10ml | 15 | 110 | 22 | 1 | 103897 |
| Without ring mark | 15 | 110 | 22 | 1 | 1038971 |

Saving and storing

НеваРеактив

Sample vials, PFA



For sample preparation, centrifugation and for autosampler racks.

| Type | Volume ml | Height mm | Ø mm | SP | Art. No. |
|---|--------------|--------------|---------|----|----------|
| With ring mark at 10 ml and stopper, PE | 12 | 110 | 16 | 1 | 1037979 |
| Without ring mark | 12 | 110 | 16 | 1 | 103797 |



Microcentrifuge tubes, PP

With frosted marking area and raised graduation for volume determination. The lid membrane has a uniform thickness and is easily pierceable by an analyzer. The attached lid seals tightly, yet reopens easily. The reaction tubes possess a consistent wall thickness and a high clarity.

- Withstands up to 20 000 RCF at 20 °C for up to 20 mins
- Lid membrane Ø 8 mm, approx. 0.35 mm thick
- Outer Ø x H: 11 x 41 mm

| Volume ml | Pack size pcs. | SP | Art. No. |
|--------------|-------------------|------|----------|
| 1.5 | 1x500 | 500 | 145094 |
| 1.5 | 6x500 | 3000 | 145194 |



Multi-purpose container, SAN

Glass-clear, with lid.

| Volume ml | L x W x H mm | SP | Art. No. |
|--------------|-----------------|----|----------|
| 4000 | 340 x 230 x 94 | 1 | 36491 |



Storage boxes, PS

With lid, for 25, 50 or 100 slides of 76 x 26, handy, stackable, break-proof and easy to clean. The seats are numbered individually. With index card.

| Positions | L x W x H mm | SP | Art. No. |
|-----------|-----------------|----|----------|
| 25 | 122 x 96 x 34 | 4 | 80276 |
| 50 | 229 x 96 x 34 | 1 | 80277 |
| 100 | 229 x 181 x 34 | 1 | 80278 |



НеваРеактив



Storage boxes, nesting, PS

Storage boxes for staining racks. Optional with or without 4 staining racks available.

| Description | L x W x H mm | SP | Art. No. |
|------------------------|-----------------|----|----------|
| With 4 staining racks | 192 x 169 x 39 | 3 | 99390 |
| Without staining racks | 192 x 169 x 39 | 3 | 99490 |



Staining rack, POM

For simultaneously staining up to 25 slides. Fits in Art. No. 99199 staining jar.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 91 x 79 x 38 | 10 | 99299 |



Staining jar, POM

Staining jar, handles up to 25 slides. Accommodates a single rack, art. no. 99299 rack.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 100 x 87 x 51 | 5 | 99199 |



Staining cuvette, POM

Consists of staining jar and rack for 25 standard slides 76 x 26 mm.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 100 x 87 x 51 | 5 | 99099 |



Staining jar, PMP

Glass-clear, for use with art. No. 80354. Supplied with two lids. One for use when no staining dish is in use, precluding evaporative loss of staining liquids during storage. A second lid with an opening for the handle of the staining dish.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 103 x 82 x 70 | 4 | 80353 |

Saving and storing

НеваРеактив

Staining cuvette ,Hellendahl', PMP

Glass-clear, supplied complete with lid. Holds 8 slides stacked vertically or 16 slides stacked back to back 76 x 26 mm.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 58 x 53.5 x 86 | 4 | 80355 |



Staining dish, PP

Holds 20 slides of 76 x 26 mm. Removable snap-on handle. For the use with art. no. 80353.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 86 x 70 x 21 | 2 | 80354 |



Staining cuvette ,Coplin', PP

With screw cap, for simultaneously staining 10 slides of 76 x 26 mm.

| Height mm | External-Ø screw cap mm | Inner-Ø mm | SP | Art. No. |
|--------------|----------------------------|---------------|----|----------|
| 94 | 50 | 34 | 10 | 136693 |



НеваРеактив



Desiccators with stopcock, PC

Glass-clear, with stopcock for evacuation. Lower sections can be filled with desiccants. A perforated disk of PP supports materials to be dried. Lids are sealed by a neoprene gasket. Ideal for use in schools, universities, and student laboratories.

| Ø mm | Disc Ø mm | SP | Art. No. |
|---------|--------------|----|----------|
| 171 | 140 | 1 | 326496 |
| 230 | 190 | 1 | 326596 |
| 273 | 230 | 1 | 326696 |



Desiccators, PP/PC

Lower section made of PP can be filled with desiccants. A perforated disk of PP supports materials to be dried. Lids made of PC are sealed by a neoprene gasket. Ideal for use in schools, universities, and student laboratories.

| Ø mm | Disc Ø mm | SP | Art. No. |
|---------|--------------|----|----------|
| 171 | 140 | 1 | 326094 |
| 230 | 190 | 1 | 326194 |
| 273 | 230 | 1 | 326294 |



Desiccators with stopcock, PP/PC

Evacuatable desiccators. Base sections in PP. Hot crucibles should be put on a porcelain plate only. Cover made of transparent PC. O-ring provides excellent sealing. Vacuum valve of PC with PE stopper allows for gradual admission of air in order to prevent damage to crucibles. A removable pan holds calcium chloride or other choice of desiccant. Supplied without desiccator plates.

| Ø mm | SP | Art. No. |
|---------|----|----------|
| 150 | 1 | 80550 |
| 200 | 1 | 80230 |
| 250 | 1 | 80554 |

Saving and storing

НеваРеактив

Desiccator plates, PP and porcelain

PP-Plate usable up to max. 120 °C.

| Material | for Desiccator -Ø mm | Ø mm | SP | Art. No. |
|-----------|-------------------------|---------|----|----------|
| PP | 150 | 141 | 1 | 80551 |
| PP | 200 | 190 | 1 | 80231 |
| PP | 250 | 239 | 1 | 80553 |
| Porcelain | 150 | 140 | 1 | 65965 |
| Porcelain | 200 | 190 | 1 | 65975 |
| Porcelain | 250 | 240 | 1 | 65980 |



Spare parts for desiccators

Spare O-rings and valves for desiccators (art. no. 80550, 80230, 80554).

| Description | SP | Art. No. |
|---|----|----------|
| O-ring for desiccator no. 80550 | 1 | 80555 |
| O-ring for desiccator no. 80230 | 1 | 80556 |
| O-ring for desiccator no. 80554 | 1 | 80557 |
| Valve, PC, for desiccator no. 80550, 80230, 80554 | 1 | 80229 |



Seed germinating kids, PS

Kit for checking seed germination. A strip of filter paper is inserted through the slot in the annular support, a circular sheet of filter paper is placed on the support. Seeds are laid out on this sheet of filter paper. Includes a top bell equipped with an air vent. Conforms to DBGM 1671453.

| Description | SP | Art. No. |
|--|----|----------|
| Seed germinating kit, 250 ml | 10 | 98590 |
| Annular support for seed germinating kit no. 98590 | 10 | 98690 |
| Top bell for seed germinating kit no. 98590 | 10 | 98790 |
| Water Jar, 250 ml for seed germinating kit no. 98590 | 10 | 98890 |



НеваРеактив



Instrument trays, MF

White. Fitting lid made of PS please order separately.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 190 x 150 x 40 | 5 | 72098 |
| 290 x 160 x 35 | 5 | 72198 |
| 290 x 160 x 60 | 5 | 72398 |
| 340 x 245 x 100 | 5 | 72498 |
| 350 x 250 x 40 | 5 | 72298 |



Lids for instrument trays, PS

Glass-clear, with handle.

| Size mm | For Container no. | SP | Art. No. |
|------------|----------------------|----|----------|
| 190 x 150 | 72098 | 5 | 79790 |
| 290 x 160 | 72198, 72398 | 5 | 79890 |
| 340 x 245 | 72498 | 5 | 79990 |



Instrument trays, flat, MF

White, flat.

| L x W x H mm | SP | Art. No. |
|-----------------|----|----------|
| 190 x 150 x 17 | 5 | 71598 |
| 240 x 180 x 17 | 5 | 71698 |
| 268 x 208 x 17 | 5 | 71798 |
| 355 x 240 x 17 | 5 | 71898 |
| 428 x 288 x 17 | 5 | 71998 |



Laboratory trays, PP

All-purpose trays, robust, high chemical resistance.

| Bottom size inner mm | Rim measurement mm | Height mm | SP | Art. No. |
|-------------------------|-----------------------|--------------|----|----------|
| 130 x 180 | 180 x 230 | 42 | 1 | 165094 |
| 180 x 240 | 250 x 310 | 65 | 1 | 165194 |
| 240 x 300 | 310 x 370 | 75 | 1 | 165294 |
| 300 x 400 | 420 x 520 | 120 | 1 | 165394 |
| 400 x 500 | 534 x 634 | 140 | 1 | 165494 |
| 500 x 700 | 648 x 846 | 160 | 1 | 165594 |

Deep trays, PVC

White, universal usable.

| Bottom size inner mm | Height mm | SP | Art. No. |
|-------------------------|--------------|----|----------|
| 200 x 150 | 50 | 1 | 80280 |
| 250 x 200 | 60 | 1 | 80281 |
| 320 x 260 | 70 | 1 | 80282 |
| 350 x 300 | 85 | 1 | 80283 |
| 430 x 330 | 95 | 1 | 80284 |
| 520 x 420 | 95 | 1 | 80285 |
| 675 x 540 | 100 | 1 | 80286 |
| 550 x 430 | 190 | 1 | 80288 |



Compartment tray, PVC

With 9 cavities, for bottles up to Ø 25 mm.

| Size mm | Height mm | SP | Art. No. |
|------------|--------------|----|----------|
| 355 x 300 | 45 | 1 | 80952 |



Compartment tray, PVC

With 12 cavities, for small parts.

| Size mm | Height mm | SP | Art. No. |
|------------|--------------|----|----------|
| 410 x 300 | 65 | 1 | 80953 |



Compartment tray, PVC

With 5 cavities of different sizes for pipettes, thermometers, connectors etc.

| Size mm | Height mm | SP | Art. No. |
|------------|--------------|----|----------|
| 410 x 300 | 70 | 1 | 80954 |





Buckets, PE-HD

White, graduated.

Suitable tight snap-lid, transparent, made of PE-LD. Please order separately.

| Description | Volume l | Graduation l | Height mm | Ø mm | SP | Art. No. |
|-------------|-------------|-----------------|--------------|---------|----|----------|
| Bucket | 5 | 1 | 240 | 250 | 1 | 96093 |
| Bucket | 10 | 1 | 300 | 290 | 1 | 96393 |
| Lid | for 5 l | | | | 1 | 96293 |
| Lid | for 10 l | | | | 1 | 96593 |



Buckets with spout, PP



Transparent, graduated, without lid. Highly resistant to chemicals.

| Volume l | Gradation l | Height mm | Ø mm | SP | Art. No. |
|-------------|----------------|--------------|---------|----|----------|
| 12 | 1 | 330 | 310 | 1 | 96694 |
| 15 | 1 | 370 | 310 | 1 | 96794 |



Bowls, round, PP



White, round.

| Volume l | Height mm | Ø mm | SP | Art. No. |
|-------------|--------------|---------|----|----------|
| 1 | 70 | 160 | 5 | 42594 |
| 2 | 80 | 200 | 5 | 42694 |
| 3 | 100 | 240 | 5 | 42794 |
| 4 | 120 | 280 | 5 | 42894 |
| 7 | 130 | 320 | 3 | 42994 |
| 9 | 150 | 360 | 3 | 43094 |
| 13 | 180 | 400 | 3 | 43194 |



Mixing vessel, MF

White, with both spout and handle, non-slip.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------|----|----------|
| 3000 | 140 | 220 | 1 | 73298 |

Saving and storing

Неварреактив

Bowl, PP



White, for steel sinks.

| Volume l | L x W x H mm | SP | Art. No. |
|-------------|-----------------|----|----------|
| 14 | 320 x 340 x 190 | 5 | 43510 |



Carrying trays, PE-HD

Easy stackable.

| Volume l | L x W x H mm | SP | Art. No. |
|-------------|-----------------|----|----------|
| 20 | 380 x 280 x 200 | 1 | 80602 |
| 46 | 560 x 330 x 250 | 1 | 80603 |
| 72 | 660 x 400 x 300 | 1 | 80604 |



Multi-purpose containers, PP

With 2 carrying grips. Volume 30 l, outer-Ø 400 mm, height 450 mm.

| Colour | SP | Art. No. |
|--------|----|----------|
| green | 1 | 47705 |
| yellow | 1 | 47706 |
| orange | 1 | 47707 |
| blue | 1 | 47708 |
| grey | 1 | 47716 |



Microcentrifuge tube racks, coloured, PP

Sturdy construction. Stackable racks with alphanumeric positions. Operating temperature -20 to 90 °C. Autoclavable (121 °C). Density 1.2 g/cm³. Will not float in waterbath. Racks are supplied in two-pieces (Ø 11 mm, for microcentrifuge tubes) or three-pieces (Ø 13 mm, for cryo tubes) for convenient and permanent assembly.

| for Ø up to mm | Positions | Colour | L x W x H mm | SP | Art. No. |
|-------------------|-----------|--------|-----------------|----|----------|
| 11 | 8 x 16 | white | 265 x 126 x 38 | 5 | 3197940 |
| 13 | 6 x 14 | white | 265 x 126 x 38 | 5 | 3198940 |
| 11 | 8 x 16 | blue | 265 x 126 x 38 | 5 | 3197948 |
| 13 | 6 x 14 | blue | 265 x 126 x 38 | 5 | 3198948 |
| 11 | 8 x 16 | red | 265 x 126 x 38 | 5 | 3197943 |
| 13 | 6 x 14 | red | 265 x 126 x 38 | 5 | 3198943 |



Неварреактив

Test tube racks, coloured, PP



Sturdy construction, stackable, light, colour-coded. Ideal for use in water baths. Alphabetical positions. For refrigerated storage of samples, and for incubations conducted in climatic chambers. Racks are supplied in two-pieces for convenient and permanent assembly. Operating temperature - 20 to 90 °C. Autoclavable at temperatures up to 121 °C. L x W: 265 x 126 mm.

| For Ø up to mm | Positions | Height mm | Colour | SP | Art. No. |
|----------------|-----------|-----------|--------|----|----------|
| 13 | 6 x 14 | 75 | white | 5 | 3190940 |
| 16 | 5 x 11 | 75 | white | 5 | 3191940 |
| 18 | 5 x 11 | 75 | white | 5 | 3192940 |
| 20 | 4 x 10 | 75 | white | 5 | 3193940 |
| 25 | 4 x 8 | 88 | white | 5 | 3194940 |
| 30 | 3 x 7 | 88 | white | 5 | 3195940 |
| 13 | 6 x 14 | 75 | blue | 5 | 3190948 |
| 16 | 5 x 11 | 75 | blue | 5 | 3191948 |
| 18 | 5 x 11 | 75 | blue | 5 | 3192948 |
| 20 | 4 x 10 | 75 | blue | 5 | 3193948 |
| 25 | 4 x 8 | 88 | blue | 5 | 3194948 |
| 30 | 3 x 7 | 88 | blue | 5 | 3195948 |
| 13 | 6 x 14 | 75 | red | 5 | 3190943 |
| 16 | 5 x 11 | 75 | red | 5 | 3191943 |
| 18 | 5 x 11 | 75 | red | 5 | 3192943 |
| 20 | 4 x 10 | 75 | red | 5 | 3193943 |
| 25 | 4 x 8 | 88 | red | 5 | 3194943 |
| 30 | 3 x 7 | 88 | red | 5 | 3195943 |

Test tube racks, PE



White, allow the control of reagents.

| For Ø up to mm | Positions | L x W x H mm | SP | Art. No. |
|----------------|-----------|---------------|----|----------|
| 16 | 10 | 200 x 55 x 65 | 4 | 80130 |
| 18 | 9 | 200 x 55 x 65 | 4 | 80131 |

Saving and storing

НеваРеактив

Test tube racks, PP

White, for test tubes Ø 21 mm

| For Ø up to mm | Positions | L x W x H mm | SP | Art. No. |
|-------------------|-----------|-----------------|----|----------|
| 21 | 2 x 6 | 190 x 60 x 80 | 5 | 80560 |
| 21 | 2 x 12 | 375 x 65 x 85 | 5 | 80562 |



Drying rack

Polyethylene-coated steel rack on a PVC backplate and trough.

| Size mm | SP | Art. No. |
|------------|----|----------|
| 450 x 630 | 1 | 76299 |



Drying rack, PS

With draining trough and draining tubing. Rack with 72 pegs 100 x 15 mm. Pegs can be insert as required.

| Description | Size mm | SP | Art. No. |
|------------------|------------|----|----------|
| Drying rack | 450 x 630 | 1 | 80213 |
| Replacement pegs | 95 x Ø 6 | 11 | 81213 |



НеваРеактив

Competence in Lab Plastics

BOTTLING AND WEIGHING

НеваРеактив



НеваРеактив

VITLAB 
Competence in Labware



Measuring scoops, PP

White, flat bottoms and tops, volume-marked.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|----|----------|
| 2 | 60 | 12 | 39194 |
| 5 | 82 | 12 | 39294 |
| 10 | 100 | 12 | 39394 |
| 25 | 135 | 12 | 39494 |
| 50 | 160 | 12 | 39594 |
| 100 | 200 | 12 | 39694 |
| 250 | 260 | 6 | 39794 |
| 500 | 315 | 6 | 39894 |
| 1000 | 385 | 6 | 39994 |



Measuring scoops, PE-HD



Natural colouring.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|----|----------|
| 15 | 115 | 12 | 40093 |
| 25 | 135 | 12 | 40193 |
| 65 | 185 | 12 | 40293 |
| 110 | 215 | 12 | 40393 |
| 150 | 250 | 12 | 40493 |
| 350 | 310 | 6 | 40593 |
| 750 | 350 | 6 | 40693 |
| 1250 | 400 | 6 | 40793 |



Spatula, PA

Glass-fibre reinforced.

| Description | Length mm | SP | Art. No. |
|----------------|--------------|----|----------|
| Double-spatula | 150 | 10 | 80594 |
| Double-spatula | 180 | 10 | 80595 |
| Spatula-spoon | 180 | 10 | 80596 |
| Spatula-spoon | 210 | 10 | 80593 |

Bottling and weighing

НеваРеактив

Forceps, POM

Yellow, flat bottoms and tops, self-sprung.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 115 | 5 | 68099 |
| 145 | 5 | 68199 |
| 180 | 5 | 68299 |
| 250 | 5 | 68399 |



Forceps, PMP

White, pointed, self-sprung.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 115 | 10 | 67895 |
| 145 | 10 | 67995 |



Watch glasses, PTFE

| Ø mm | SP | Art. No. |
|---------|----|----------|
| 50 | 1 | 113197 |
| 75 | 1 | 113297 |
| 100 | 1 | 113397 |
| 125 | 1 | 113497 |



Watch glasses, PP

Transparent, with base.

| Ø mm | SP | Art. No. |
|---------|----|----------|
| 60 | 10 | 80452 |
| 80 | 10 | 80454 |
| 100 | 10 | 80455 |
| 125 | 10 | 80456 |



НеваРеактив



Weighing jars, PP

Transparent, with hermetic-seal lids.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------|----|----------|
| 25 | 30 | 40 | 10 | 80342 |
| 30 | 50 | 30 | 10 | 80340 |
| 50 | 30 | 50 | 10 | 80345 |
| 65 | 35 | 60 | 10 | 80346 |
| 65 | 60 | 40 | 10 | 80343 |
| 200 | 90 | 60 | 10 | 80347 |
| 400 | 120 | 70 | 10 | 80348 |

Competence in Lab Plastics

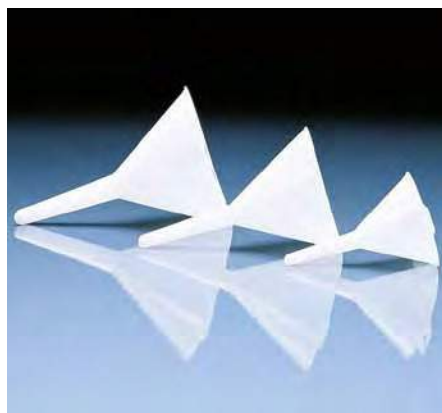
FILTERING AND DECANTING

НеваРеактив



НеваРеактив

VITLAB 
Competence in Labware



Funnels, PP

Transparent.

| Ø mm | Length mm | Stem Ø mm | Stem length mm | SP | Art. No. |
|---------|--------------|--------------|-------------------|----|----------|
| 30 | 45 | 1.5 | 25 | 24 | 40894 |
| 30 | 47 | 4 | 25 | 24 | 41094 |
| 40 | 65 | 4 | 35 | 24 | 41194 |
| 50 | 85 | 7 | 43 | 24 | 41294 |
| 75 | 110 | 6 | 55 | 12 | 41394 |
| 100 | 155 | 8 | 77 | 12 | 41494 |
| 120 | 180 | 11 | 90 | 12 | 41594 |
| 150 | 220 | 15 | 95 | 12 | 41694 |



Urbanti funnels, PMP

Glass-clear, spiral ribbing precludes trapping of air between filter paper and funnel, providing more rapid filtration.

| Ø mm | Length mm | Stem Ø mm | Stem length mm | SP | Art. No. |
|---------|--------------|--------------|-------------------|----|----------|
| 51 | 195 | 3 | 150 | 6 | 325095 |
| 70 | 210 | 3 | 150 | 6 | 325195 |
| 100 | 198 | 7 | 108 | 4 | 325295 |
| 140 | 247 | 10 | 132 | 3 | 325395 |
| 196 | 315 | 20 | 155 | 2 | 325495 |



Analytical funnels, PP

Transparent.

| Ø mm | Length mm | Stem Ø mm | Stem length mm | SP | Art. No. |
|---------|--------------|--------------|-------------------|----|----------|
| 50 | 194 | 5 | 150 | 10 | 80162 |
| 72 | 208 | 5 | 142 | 10 | 80164 |
| 91 | 227 | 5 | 142 | 10 | 80165 |

Büchner funnels, PP

Two detachable pieces facilitate cleaning.

| Filter Ø mm | Length mm | Holes Ø mm | SP | Art. No. |
|----------------|--------------|---------------|----|----------|
| 45 | 95 | 1.0 | 1 | 80437 |
| 55 | 113 | 1.0 | 1 | 80438 |
| 70 | 145 | 1.5 | 1 | 80439 |
| 80 | 165 | 1.5 | 1 | 80440 |
| 90 | 180 | 1.5 | 1 | 80441 |
| 110 | 210 | 2.0 | 1 | 80442 |
| 160 | 280 | 3.0 | 1 | 80443 |
| 240 | 350 | 3.0 | 1 | 80445 |



Large funnels, PP/PE-HD

Transparent.

Stainless steel/aluminium mesh sieve/filter.

| Ø mm | Length mm | Stem Ø mm | Material | SP | Art. No. |
|---|--------------|--------------|----------|----|----------|
| 200 | 200 | 22 | PP | 6 | 41794 |
| 250 | 260 | 30 | PP | 6 | 41894 |
| 350 | 440 | 35 | PP | 1 | 41994 |
| 400 | 365 | 42 | PE-HD | 1 | 42294 |
| 430 | 420 | 37 | PE-HD | 1 | 42393 |
| Brass mesh Ø 50 mm for funnels no. 41794, 41894 | | | | 1 | 42099 |



Half-round funnels, PP



Transparent, special ST-funnels for use on multi-neck flasks and labware.

| NS | Length mm | Stem width mm | Stem length mm | SP | Art. No. |
|-------|--------------|------------------|-------------------|----|----------|
| 14/23 | 75 | 40 | 17 | 10 | 70494 |
| 19/26 | 95 | 50 | 23 | 10 | 70594 |
| 29/32 | 135 | 75 | 30 | 5 | 70694 |





Powder funnels, PP

Transparent.

| Ø mm | Length mm | Stem Ø mm | Stem length mm | SP | Art. No. |
|---------|--------------|--------------|-------------------|----|----------|
| 65 | 68 | 15 | 25 | 10 | 70794 |
| 80 | 75 | 21 | 25 | 10 | 70894 |
| 100 | 94 | 22 | 20 | 10 | 70994 |
| 120 | 110 | 26 | 20 | 10 | 71094 |
| 150 | 138 | 28 | 22 | 5 | 71194 |



Funnel holders, PP

Available to hold funnels with diameters from 50-120 mm, to connect to rods with diameters from 8-14 mm.

| Positions | SP | Art. No. |
|-----------|----|----------|
| 1 | 5 | 80268 |
| 2 | 5 | 80269 |



Support for separatory funnels, PP

For separatory funnels from 125-500 ml, with clamp for rods Ø 8-14 mm.

| Positions | SP | Art. No. |
|-----------|----|----------|
| 1 | 5 | 80970 |

Filtering and decanting

Filter funnel supports

PP-plates with aluminium support rod. \varnothing x length in mm: 12.7 x 595. To support 2 or 4 funnels with top outer- \varnothing of 50 to 120 mm. Adjustable funnel height.

| Positions | Base plate mm | SP | Art. No. |
|-----------|------------------|----|----------|
| 2 | 250 x 140 | 1 | 78394 |
| 4 | 450 x 140 | 1 | 78294 |



Chemical waste system, PE/PP

For disposal of liquid chemical waste. The funnel of PE-HD contains an automatic valve to avoid overflow. The valve closes the container of PP and minimizes evaporation.

| Volume l | Height mm | \varnothing mm | SP | Art. No. |
|-------------|--------------|---------------------|----|----------|
| 10 | 560 | 222 | 1 | 151594 |



НеваРеактив

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Water-jet vacuum pump, PP

For generation of a vacuum and to siphon off liquids and steam (Suction main or condensation trap may need to be made available.)

Pump fluid: water

Overall length: approx. 210 mm (R 3/4" connector fitted)

Weight: approx. 33g (R 3/4" connector fitted)

- High chemical resistance, fluid path consists of PP, FKM and PTFE.
- Operating temperature up to max. 80 °C.
- Integrated non-return valve increases safety.
- Simple operation and easy to clean.
- Detachable vacuum connection.

Variety of supplied adapters simplify connections to most water sources. Optional reducing adapters are available.

Very low water consumption:

The flow configuration has been optimized, resulting in a 33% reduction of water consumption (190 liters/h at 3.5 bar water supply pressure).

Constant ultimate pressure:

The ultimate pressure of 16 mbar (water temperature: 12 °C) is reached across a wide range of water supply pressures (from 3 to 6 bar).

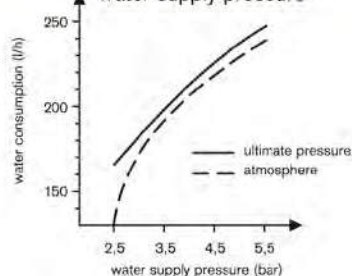
High suction capacity:

Flow rate of approx. 400 litres/h of air (against atmospheric pressure, at a water supply pressure of 3.5 bar at 12 °C water temperature).

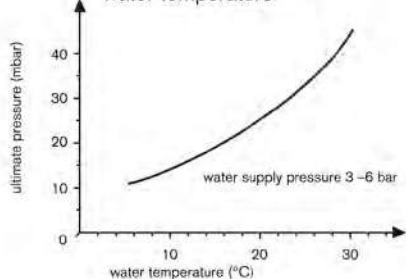
Water jet filter pump includes:

- Water connection sleeve nut R 3/4", reducing adapter R 1/2", and tubing connector (hose nozzle) of 10-12 mm outer-Ø.
- Suction line connection: Detachable hose nozzle of 6-9 mm outer-Ø, with screw cap GL 14.

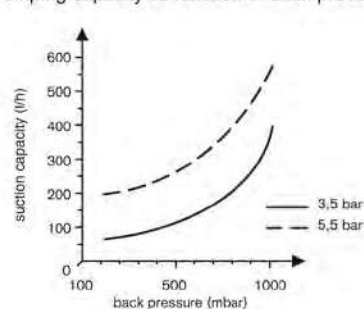
Water consumption as function of water supply pressure



Ultimate pressure as function of water temperature



Pumping capacity as function of back pressure



Description

SP Art. No.

Water-jet pump

1 77094

Accessories:

Adapter R3/4 inch to R3/8 inch

1 159665

Adapter R3/4 inch to M 22x1, faucet thread

1 159670

Competence in Lab Plastics

STIRRING AND MIXING

НеваРеактив



НеваРеактив

VITLAB 
Competence in Labware



Magnetic stirring-bars polygon, PTFE

With permanent-magnet cores.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 2 | 5 | 5 | 300497 |
| 2 | 7 | 5 | 300597 |
| 3 | 8 | 5 | 300897 |
| 3 | 10 | 5 | 301097 |
| 3 | 13 | 5 | 301197 |
| 4 | 12 | 10 | 301597 |
| 6 | 10 | 10 | 301697 |
| 6 | 15 | 10 | 301797 |
| 7 | 20 | 10 | 301897 |
| 7 | 25 | 10 | 301997 |
| 7 | 30 | 10 | 302097 |
| 7 | 40 | 10 | 302197 |
| 7 | 50 | 10 | 302297 |
| 7 | 60 | 10 | 302397 |
| 10 | 70 | 5 | 302497 |
| 10 | 80 | 5 | 302597 |
| 27 | 57 | 1 | 303097 |
| 27 | 108 | 1 | 303197 |
| 27 | 159 | 1 | 303297 |



Magnetic stirring-bars octagon, PTFE

With center-rings and permanent-magnet cores.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 8 | 13 | 3 | 307697 |
| 8 | 16 | 3 | 307797 |
| 8 | 22 | 3 | 307897 |
| 8 | 25 | 3 | 307997 |
| 8 | 28 | 3 | 308097 |
| 8 | 38 | 3 | 308197 |
| 8 | 41 | 3 | 308297 |
| 8 | 51 | 3 | 308397 |
| 8 | 64 | 3 | 308497 |
| 10 | 13 | 3 | 308597 |
| 10 | 15 | 3 | 308697 |
| 10 | 22 | 3 | 308797 |
| 10 | 25 | 3 | 308897 |
| 10 | 35 | 3 | 308997 |
| 10 | 38 | 3 | 309097 |
| 10 | 48 | 3 | 309197 |
| 10 | 51 | 3 | 309297 |
| 10 | 64 | 3 | 309397 |
| 13 | 38 | 1 | 309497 |
| 13 | 75 | 1 | 309597 |

Stirring and mixing

НеваРеактив

Magnetic stirring-bars oval, PTFE

With permanent-magnet cores for use in round bottom flasks.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 5 | 10 | 3 | 311097 |
| 6 | 15 | 3 | 311197 |
| 10 | 20 | 3 | 311297 |
| 12 | 25 | 3 | 311397 |
| 16 | 30 | 3 | 311497 |
| 16 | 35 | 3 | 311597 |
| 20 | 40 | 1 | 311697 |
| 20 | 50 | 1 | 311797 |
| 20 | 64 | 1 | 311897 |
| 20 | 70 | 1 | 311997 |



Magnetic stirring-bars double-spinfin, PTFE



With permanent-magnet cores.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 14 | 10 | 1 | 314097 |
| 17 | 13 | 1 | 314197 |
| 22 | 15 | 1 | 314297 |



Magnetic stirring-bars spinplus, PTFE



With permanent-magnet cores.

| Size mm | SP | Art. No. |
|------------|----|----------|
| 10 x 10 | 1 | 316097 |
| 20 x 20 | 1 | 316197 |
| 25 x 25 | 1 | 316297 |
| 30 x 30 | 1 | 316397 |
| 38 x 38 | 1 | 316497 |



НеваРеактив



Magnetic stirring-bars triangular, PTFE

With permanent-magnet cores.

| Sides mm | Length mm | SP | Art. No. |
|-------------|--------------|----|----------|
| 6 | 12 | 3 | 310197 |
| 8 | 25 | 3 | 310297 |
| 14 | 40 | 3 | 310397 |
| 12 | 50 | 3 | 310497 |



Magnetic stirring-bars spin, PTFE



With permanent-magnet cores. For use in sample cells and reagent tubes.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 9 | 6 | 1 | 317297 |



Magnetic stirring-bars circulus, PTFE

With permanent-magnet cores. 20-mm circle Ø, 8-mm shaft Ø.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 32 | 3 | 3125970 |
| 52 | 3 | 3126970 |

Stirring and mixing

Magnetic stirrer retrievers, PE

With permanent magnet on one end and hang-up ring.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 300 | 3 | 318293 |
| 450 | 3 | 318393 |



Magnetic stirrer retrievers, flexible, PTFE



With a powerful permanent-magnet at one end. For retrieving stirring bars from beakers, flasks, and similar. Flexible.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 330 | 1 | 318597 |

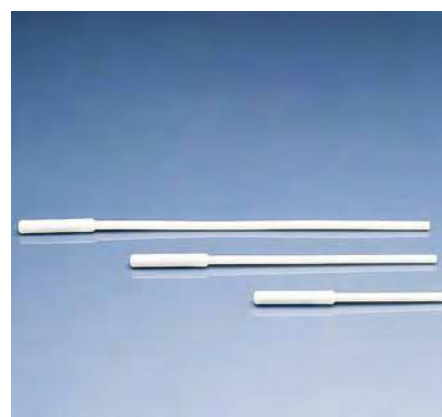


Magnetic stirrer retrievers, PTFE



PTFE encapsulated magnetic core.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 150 | 1 | 122097 |
| 250 | 1 | 122197 |
| 350 | 1 | 122297 |



НеваРеактив

НеваРеактив



Mortars, MF

White, with spout

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------|----|----------|
| 300 | 75 | 125 | 5 | 72898 |
| 500 | 90 | 150 | 5 | 72998 |



Pestles, MF

White, heavy, strong.

| Length mm | Top Ø mm | Weight g | SP | Art. No. |
|--------------|-------------|-------------|----|----------|
| 125 | 30 | 55 | 5 | 73498 |
| 145 | 35 | 85 | 5 | 73598 |
| 160 | 40 | 120 | 5 | 73698 |
| 215 | 42 | 175 | 1 | 73898 |



Mixing vessel, MF

White, with both spout and handle, non-slip.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------|----|----------|
| 3000 | 140 | 220 | 1 | 73298 |



Stirring rod, PP

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 245 | 10 | 80828 |

Competence in Lab Plastics

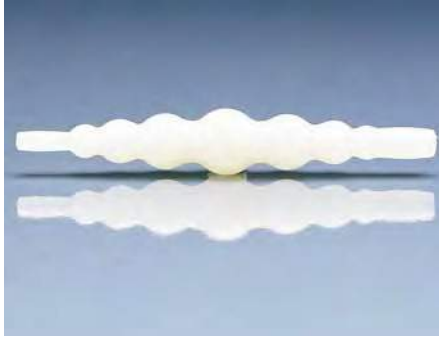
CONNECTING AND CONTROLLING

НеваРеактив



НеваРеактив

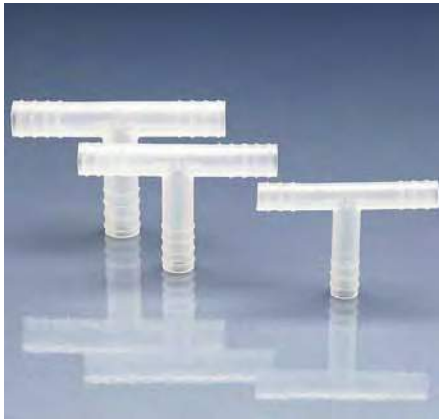
VITLAB 
Competence in Labware



Connector universal, PP

Transparent.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 5 - 15 | 10 | 78794 |



Connectors T-form, PP

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 3 | 20 | 80459 |
| 4 - 5 | 20 | 80460 |
| 6 - 7 | 20 | 80461 |
| 8 - 9 | 20 | 80462 |
| 10 - 11 | 20 | 80463 |
| 12 - 13 | 20 | 80520 |
| 14 - 15 | 20 | 80521 |



Connectors Y-form, PP

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 3 | 20 | 80464 |
| 4 - 5 | 20 | 80465 |
| 6 - 7 | 20 | 80466 |
| 8 - 9 | 20 | 80467 |
| 10 - 11 | 20 | 80468 |
| 12 - 13 | 20 | 80525 |
| 14 - 15 | 20 | 80526 |

Connectors straight, PP

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 3 - 5 | 20 | 80510 |
| 5 - 7 | 20 | 80511 |
| 7 - 10 | 20 | 80512 |
| 9 - 12 | 20 | 80513 |
| 11 - 14 | 20 | 80514 |
| 13 - 16 | 20 | 80515 |



Connectors straight, PP

Tube adaptors for various diameters.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 4 - 8 / 8 - 12 | 20 | 80877 |
| 4 - 8 / 12 - 16 | 20 | 80878 |
| 8 - 12 / 12 - 16 | 20 | 80879 |



Connectors 90°, PP

For connecting items of tubing.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 3 - 4 | 20 | 81250 |
| 4 - 5 | 20 | 81251 |
| 6 - 7 | 20 | 81252 |
| 8 - 9 | 20 | 81253 |
| 10 - 11 | 20 | 81254 |
| 12 - 13 | 20 | 81255 |
| 14 - 15 | 20 | 81256 |





Connectors 2-parts, PE-HD

These quick disconnectors are useful for joining tubing of glass, rubber or plastic. Connectors fit tightly together. Replace expensive adaptors. Not suitable for pressure applications.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 3 - 5 | 20 | 80434 |
| 5 - 7 | 20 | 80435 |
| 7 - 9 | 20 | 80436 |
| 9 - 12 | 20 | 80535 |
| 11 - 14 | 20 | 80536 |
| 13 - 16 | 20 | 80537 |



Non-return valve, PE-HD

With valve discs of FKM. Max. working pressure 2 bar.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 6 - 9 | 10 | 78593 |



Non-return valves, PP

With valve discs of nitril-rubber (NBR).

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 8 - 10 | 10 | 80418 |
| 10 - 15 | 10 | 80419 |

Stopcocks, PE

With ribbed handles and large tubing fittings. Not suitable for pressure applications.

| For tubing with inner Ø Zoll/mm | SP | Art. No. |
|------------------------------------|----|----------|
| 1/2 / 12 | 10 | 75093 |
| 3/8 / 9 | 10 | 75193 |



Valves, 2/3-Way, PE/PP

Fittings to connect to tubing. Provide flow shutoff and choice of 2-way, or 3-way flow direction. Max. working pressure 1 bar.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| Valves 2-way | | |
| 5 | 1 | 137094 |
| 7 | 1 | 137294 |
| 9 | 1 | 137494 |
| Valves 3-way | | |
| 5 | 1 | 137194 |
| 7 | 1 | 137394 |
| 9 | 1 | 137594 |



Flow monitor, SAN

Glass-clear. Provides a visual indication of flow of liquids or gases through tubing. Vane rotates to indicate fluid flow at flow rates as low as 150 ml/min. in either direction. Compact dimensions (just 88 mm overall length, including tubing fittings, and only 40 mm wide and 15 mm deep) allow internal installation in laboratory equipment and other apparatus.

| For tubing with inner Ø mm | SP | Art. No. |
|-------------------------------|----|----------|
| 6.5 - 11 | 10 | 138591 |





Drying tubes, PE-HD

Calcium-chloride drying tubes, ideal for drying gases. Tapered fittings on each end accept tubing having internal diameters of 8 mm to 10 mm.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 20 | 100 | 5 | 80446 |
| 20 | 150 | 5 | 80447 |
| 20 | 200 | 5 | 80448 |

Fluorocarbon PFA

INDISPENSABLE IN TRACE ANALYSIS

НеваРеактив

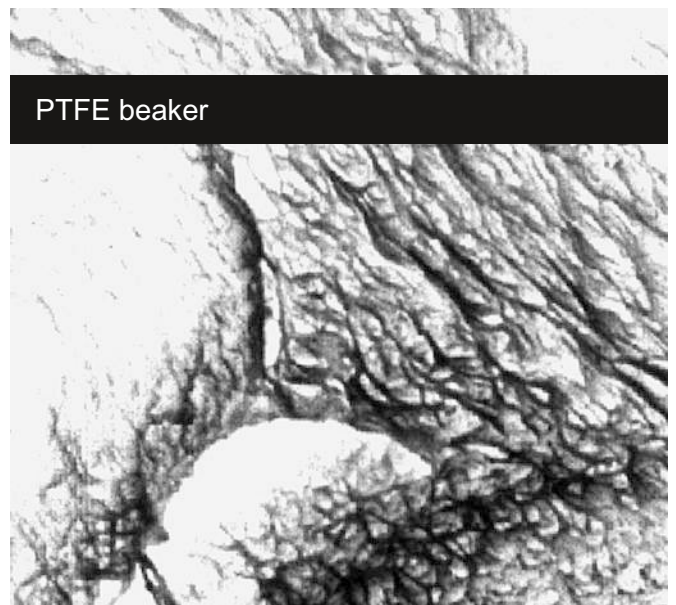


НеваРеактив

VITLAB 
Competence in Labware

Fluorocarbon PFA labware

In addition to the polyolefines (e.g. PP, HDPE and LDPE), fluoropolymers, especially PFA and PTFE, have found their firm place in modern laboratories, since they possess an extremely high resistance to chemicals and an unusual temperature resistance of $-200\text{ }^{\circ}\text{C}$ to $+250\text{ }^{\circ}\text{C}$ (PFA). The use of PFA in combination with injection moulding and extrusion blow moulding makes it possible to manufacture transparent products with extremely smooth and sealed surfaces.



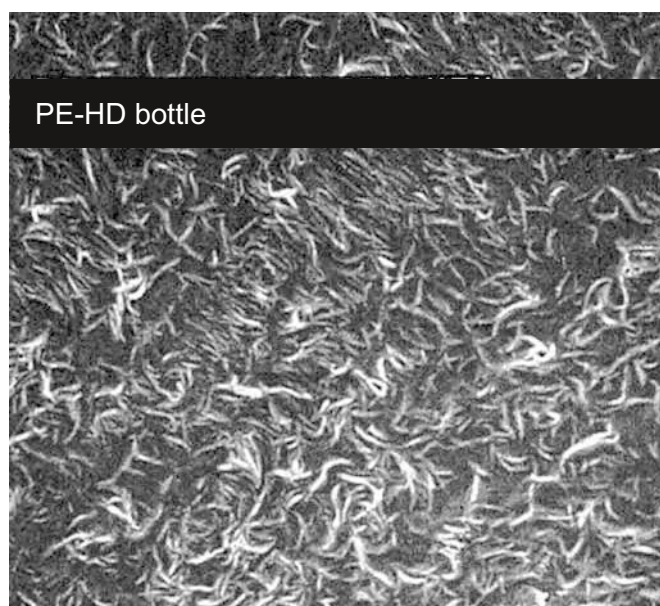
PTFE beaker

The pictures were taken in a scanning electron microscope, 8000-times magnified.

The ever-increasing need to lower the detection limit of elemental trace analysis necessitates the use of appropriate container materials. Today, trace analysis works with concentrations in the range of ng/g (ppb) and pg/g (ppt). Other materials, which have not been specially pretreated, may cause a change of concentration due to an interaction of the container wall with the sample and thus adulterate the result of the analysis. Studies have shown that a low concentration of element standards can be maintained for a longer time if containers used are made from PFA.

The selection of containers made of high-purity PFA is not only safer regarding the analysis, it is also economical due to the rationalization of laboratory processes.

For all PFA products, VITLAB uses high-purity PFA only, which is particularly well-suited for trace analysis. For less critical uses, e.g. if the main requirement is a high chemical resistance, VITLAB offers bottles of “PFA-economy” grade, which are partly made of recycled PFA. These bottles are very reasonably priced and environmentally sound.



PFA – Fluorocopolymer for secure result

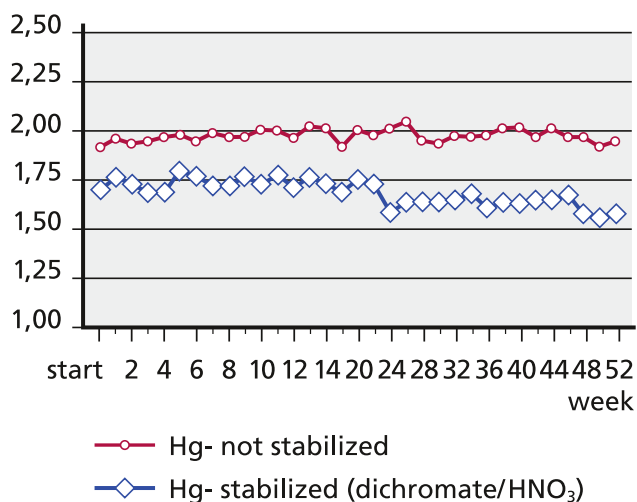
Use within the scope of trace analysis

The easy-to-clean surfaces without any memory effects complement the valuable attributes of PFA laboratory equipment for sampling, preparation and analysis in the field of elemental trace analysis.

Use within trace analysis

Storage of an Hg standard in high-purity PFA containers (concentration 2 ppb (ng/g) each).

Concentration 2 ppb (ng/g) each



Source: GIT Labor-Fachzeitschrift 1/95

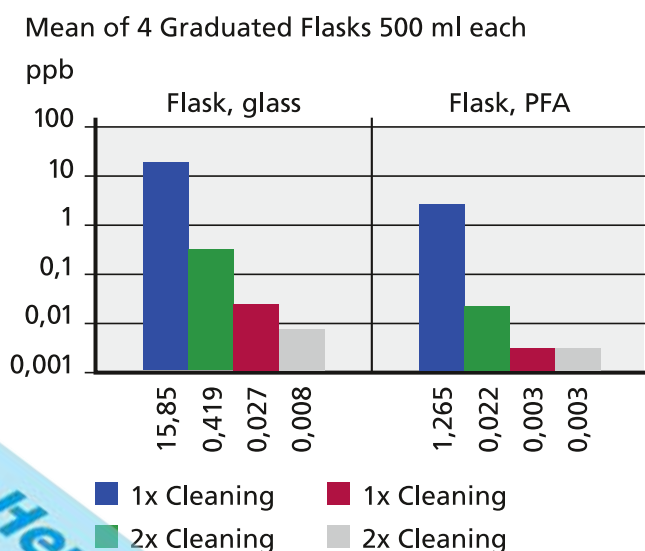
bon S

Cleaning after contamination

The cleaning of glass and PFA graduated flasks after contamination, for example with a Pb solution in the concentration of 1000 ppb (ng/g), occurs by rinsing them out with a 65% HNQ* Suprapur® (Pb < 0.005 ppm) solution at room temperature. The marginal concentration of 0.003 ppb is already reached after rinsing the PFA graduated flasks three times. Thus, the time-consuming boiling process can be eliminated.

The most important PFA characteristics

- High thermal stability from -200 °C to +250 °C
- Chemical inertness against almost all chemicals
- Extremely hydrophobic and antiadhesive
- Good clarity and form stability, suitable for volume measurement devices
- Long maintenance of reference material with low concentrations in PFA containers
- Extremely smooth surfaces – easy to clean (see graphic)
- No memory effects
- High purity of the basic material
- Very suitable for use within elemental trace analysis



Source: Karlsruhe Forschungsinstitut, K. Mangold

*Suprapur® is a brand name of Merck KGaA.



Volumetric flasks, PFA, class A

High transparency, individually calibrated ring-mark.
Tolerances class A according to DIN EN ISO 1042. With lot certificate.
Supplied with PFA screw cap. Screw caps provide hermetic seals and high safety from outside contamination. Withstand high temperatures and chemical attack.
Exposure to temperatures up to 121 °C (autoclaving) will not cause permanent exceeding of tolerance limits. Cleaning up to max. 60 °C is recommended to preserve marks and inscriptions.

| Volume ml | Tolerance ± ml | Height mm | Thread GL | SP | Art. No. |
|--------------|-------------------|--------------|--------------|----|----------|
| 10 | 0.04 | 90 | 18 | 1 | 107097 |
| 25 | 0.04 | 115 | 18 | 1 | 107197 |
| 50 | 0.06 | 150 | 18 | 1 | 107297 |
| 100 | 0.10 | 180 | 18 | 1 | 107397 |
| 250 | 0.15 | 235 | 25 | 1 | 107497 |
| 500 | 0.25 | 270 | 25 | 1 | 107597 |



Griffin beakers, PFA



Transparent, with raised scale. High temperature and chemical resistance.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 25 | 5 | 50 | 32 | 1 | 110205 |
| 50 | 10 | 59 | 39 | 1 | 110305 |
| 100 | 20 | 72 | 50 | 1 | 110405 |
| 250 | 50 | 96 | 67 | 1 | 110605 |
| 500 | 100 | 122 | 88 | 1 | 110905 |
| 1000 | 100 | 141 | 109 | 1 | 111005 |



Griffin beakers, ETFE



Transparent, with printed black scale. High temperature and chemical resistance.

| Volume ml | Graduation ml | Height mm | Ø mm | SP | Art. No. |
|--------------|------------------|--------------|---------|----|----------|
| 25 | 5 | 50 | 32 | 1 | 110204 |
| 50 | 10 | 59 | 39 | 1 | 110304 |
| 100 | 20 | 72 | 50 | 1 | 110404 |
| 250 | 50 | 96 | 67 | 1 | 110604 |
| 400 | 50 | 109 | 77 | 1 | 110704 |
| 500 | 100 | 122 | 88 | 1 | 110904 |
| 600 | 100 | 125 | 91 | 1 | 110804 |
| 1000 | 100 | 143 | 105 | 1 | 111004 |

Fluoro plastic products

НеваРеактив

Griffin beakers, PTFE



Opaque, virtually totally chemically inert, withstand high temperatures.

| Volume ml | Thickness mm | Height mm | Ø mm | SP | Art. No. |
|-----------|--------------|-----------|------|----|----------|
| 5 | 2 | 24 | 22 | 1 | 112197 |
| 10 | 2 | 39 | 25 | 1 | 112297 |
| 25 | 2 | 47 | 32 | 1 | 112397 |
| 50 | 2 | 55 | 42 | 1 | 112497 |
| 100 | 3 | 68 | 55 | 1 | 112597 |
| 250 | 3 | 93 | 62 | 1 | 112697 |
| 500 | 4 | 126 | 81 | 1 | 112797 |
| 1000 | 4 | 157 | 102 | 1 | 112897 |



Wash-bottles, PFA-economy



Narrow-mouth wash bottles, transparent, with ETFE screw cap and dispensing tube made of FEP. Withstand high temperatures and chemical attack.

| Volume ml | Thread GL | Height* mm | Ø mm | SP | Art. No. |
|-----------|-----------|------------|------|----|----------|
| 250 | 25 | 157 | 61 | 1 | 108792 |
| 500 | 25 | 189 | 76 | 1 | 108892 |
| 1000 | 32 | 233 | 96 | 1 | 108992 |

* without wash-bottle cap



Narrow-mouth bottles, PFA



Transparent, supplied with screw cap with buttress thread made of and a moulded-in sealing ring. Ideal as packaging bottle for pure chemicals. High temperature resistance from -200 °C to +250 °C.

| Volume ml | Thread* | Height mm | Ø mm | SP | Art. No. |
|-----------|---------|-----------|------|----|----------|
| 50 | S 28 | 86 | 37 | 1 | 109297 |
| 100 | S 28 | 120 | 45 | 1 | 109397 |
| 250 | S 28 | 160 | 61 | 1 | 108297 |
| 500 | S 28 | 190 | 76 | 1 | 108397 |
| 1000 | S 28 | 240 | 96 | 1 | 108497 |

* Buttress thread



НеваРеактив



Narrow-mouth bottles, PFA-economy

Transparent, supplied with hermetically sealing screw cap made of ETFE and a moulded-in sealing ring. Withstand high temperatures and chemical attack.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 50 | 18 | 90 | 37 | 1 | 108092 |
| 100 | 18 | 114 | 45 | 1 | 108192 |
| 250 | 25 | 157 | 61 | 1 | 108292 |
| 500 | 25 | 189 | 76 | 1 | 108392 |
| 1000 | 32 | 233 | 96 | 1 | 108492 |



Wide-mouth bottles, PFA



Transparent, supplied with screw cap with buttress thread made of PFA and a moulded-in sealing ring. Ideal as packaging bottle for pure chemicals. High temperature resistance from -200 °C to +250 °C.

| Volume ml | Thread* | Height mm | Ø mm | SP | Art. No. |
|-----------|---------|-----------|------|----|----------|
| 250 | S 40 | 150 | 61 | 1 | 109497 |
| 500 | S 40 | 179 | 76 | 1 | 109597 |
| 1000 | S 40 | 217 | 96 | 1 | 109697 |
| 2000 | S 40 | 245 | 130 | 1 | 109797 |
| 2500 | S 40 | 290 | 130 | 1 | 109897 |
| 5000 | S 40 | 320 | 175 | 1 | 109997 |

* Buttress thread



Screw caps, PFA

With moulded-in sealing ring.

| Thread | SP | Art. No. |
|--------|----|----------|
| GL 18 | 12 | 102597 |
| GL 25 | 12 | 102397 |
| S*28 | 12 | 102697 |
| S*40 | 12 | 102897 |

* Buttress thread

Fluoro plastic products

НеваРеактив

Wide-mouth bottles, PTFE



Opaque with caps made of PTFE.

| Volume ml | Thread mm | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 10 | 12 | 50 | 26 | 1 | 122597 |
| 25 | 19 | 61 | 33 | 1 | 122697 |
| 50 | 25 | 76 | 43 | 1 | 122797 |
| 100 | 35 | 88 | 52 | 1 | 122897 |



Gas-wash bottles, PFA



Provided with a head-piece with buttress thread S 40. Frit, PTFE. The pores of the frit having a size of approx. 50 µm for an excellent gasification into the liquid. A wide field of application is possible thanks to the high quality fluoropolymer employed for these bottles.

| Volume ml | Height mm | Ø mm | Tube Connection I-Ø/O-Ø mm | SP | Art. No. |
|-----------|-----------|------|----------------------------|----|----------|
| 250 | 160 | 61 | 4 / 6 | 1 | 159497 |
| 500 | 190 | 76 | 4 / 6 | 1 | 159597 |
| 1000 | 240 | 96 | 5 / 8 | 1 | 159697 |



Sample containers, PFA



With screw cap made of PFA.
For sample collection, transport and storage of samples.

| Volume ml | Thread GL | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|-----------|------|----|----------|
| 30 | 40 | 54 | 38 | 1 | 130297 |
| 60 | 40 | 90 | 38 | 1 | 130397 |
| 90 | 56 | 62 | 54 | 1 | 130497 |
| 180 | 56 | 112 | 54 | 1 | 130597 |



НеваРеактив



Sample vials, PFA

With or without individually calibrated ring mark at 10 ml with screw cap GL 25 made of PFA (on the left side in the picture).

| Type | Volume ml | Height mm | Ø mm | SP | Art. No. |
|------------------------|-----------|-----------|------|----|----------|
| With ring mark at 10ml | 15 | 110 | 22 | 1 | 103897 |
| Without ring mark | 15 | 110 | 22 | 1 | 1038971 |



Sample vials, PFA

For sample preparation, centrifugation and for autosampler racks.

| Type | Volume ml | Height mm | Ø mm | SP | Art. No. |
|---|-----------|-----------|------|----|----------|
| With ring mark at 10 ml and stopper, PE | 12 | 110 | 16 | 1 | 1037979 |
| Without ring mark | 12 | 110 | 16 | 1 | 103797 |



Evaporating dishes, PFA

With snap-on lid, PE. For contamination free sample preparation and efficient transportation. Due to a conical depression in the middle of the base very small amounts of a solvent are adequate to absorb the evaporated samples.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|-----------|-----------|------|----|----------|
| 25 | 25 | 50 | 1 | 103297 |
| 50 | 54 | 50 | 1 | 103397 |

Fluoro plastic products

НеваРеактив

Round-bottom flasks, PFA



Transparent, with standard ground socket NS 29/32. For Rotary Evaporators and distillation of high pure chemicals.

Withstand high temperatures and chemical attack.

| Volume ml | Height mm | Ø mm | SP | Art. No. |
|--------------|--------------|---------|----|----------|
| 100 | 117 | 65 | 1 | 107797 |
| 250 | 147 | 88 | 1 | 107897 |
| 500 | 177 | 107 | 1 | 107997 |



Round-bottom flask support, PP

White, for round-bottom flasks, enhancing laboratory safety, durable for temperatures up to 121 °C.

| Ø mm | SP | Art. No. |
|---------|----|----------|
| 160 | 5 | 80271 |



Watch glasses, PTFE

| Ø mm | SP | Art. No. |
|---------|----|----------|
| 50 | 1 | 113197 |
| 75 | 1 | 113297 |
| 100 | 1 | 113397 |
| 125 | 1 | 113497 |



НеваРеактив



Magnetic stirring-bars polygon, PTFE

With permanent-magnet cores.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 2 | 5 | 5 | 300497 |
| 2 | 7 | 5 | 300597 |
| 3 | 8 | 5 | 300897 |
| 3 | 10 | 5 | 301097 |
| 3 | 13 | 5 | 301197 |
| 4 | 12 | 10 | 301597 |
| 6 | 10 | 10 | 301697 |
| 6 | 15 | 10 | 301797 |
| 7 | 20 | 10 | 301897 |
| 7 | 25 | 10 | 301997 |
| 7 | 30 | 10 | 302097 |
| 7 | 40 | 10 | 302197 |
| 7 | 50 | 10 | 302297 |
| 7 | 60 | 10 | 302397 |
| 10 | 70 | 5 | 302497 |
| 10 | 80 | 5 | 302597 |
| 27 | 57 | 1 | 303097 |
| 27 | 108 | 1 | 303197 |
| 27 | 159 | 1 | 303297 |



Magnetic stirring-bars octagon, PTFE

With center-rings and permanent-magnet cores.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 8 | 13 | 3 | 307697 |
| 8 | 16 | 3 | 307797 |
| 8 | 22 | 3 | 307897 |
| 8 | 25 | 3 | 307997 |
| 8 | 28 | 3 | 308097 |
| 8 | 38 | 3 | 308197 |
| 8 | 41 | 3 | 308297 |
| 8 | 51 | 3 | 308397 |
| 8 | 64 | 3 | 308497 |
| 10 | 13 | 3 | 308597 |
| 10 | 15 | 3 | 308697 |
| 10 | 22 | 3 | 308797 |
| 10 | 25 | 3 | 308897 |
| 10 | 35 | 3 | 308997 |
| 10 | 38 | 3 | 309097 |
| 10 | 48 | 3 | 309197 |
| 10 | 51 | 3 | 309297 |
| 10 | 64 | 3 | 309397 |
| 13 | 38 | 1 | 309497 |
| 13 | 75 | 1 | 309597 |

Magnetic stirring-bars oval, PTFE

With permanent-magnet cores for use in round bottom flasks.

| Ø mm | Length mm | SP | Art. No. |
|---------|--------------|----|----------|
| 5 | 10 | 3 | 311097 |
| 6 | 15 | 3 | 311197 |
| 10 | 20 | 3 | 311297 |
| 12 | 25 | 3 | 311397 |
| 16 | 30 | 3 | 311497 |
| 16 | 35 | 3 | 311597 |
| 20 | 40 | 1 | 311697 |
| 20 | 50 | 1 | 311797 |
| 20 | 64 | 1 | 311897 |
| 20 | 70 | 1 | 311997 |



Magnetic stirring-bars double-spinfin, PTFE



With permanent-magnet cores.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 14 | 10 | 1 | 314097 |
| 17 | 13 | 1 | 314197 |
| 22 | 15 | 1 | 314297 |



Magnetic stirring-bars spinplus, PTFE



With permanent-magnet cores.

| Size mm | SP | Art. No. |
|------------|----|----------|
| 10 x 10 | 1 | 316097 |
| 20 x 20 | 1 | 316197 |
| 25 x 25 | 1 | 316297 |
| 30 x 30 | 1 | 316397 |
| 38 x 38 | 1 | 316497 |

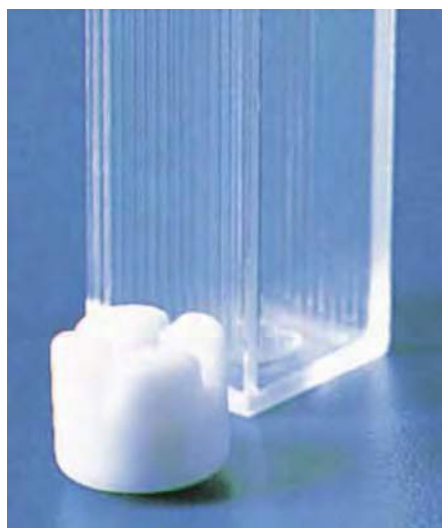




Magnetic stirring-bars triangular, PTFE

With permanent-magnet cores.

| Sides mm | Length mm | SP | Art. No. |
|-------------|--------------|----|----------|
| 6 | 12 | 3 | 310197 |
| 8 | 25 | 3 | 310297 |
| 14 | 40 | 3 | 310397 |
| 12 | 50 | 3 | 310497 |



Magnetic stirring-bars spin, PTFE



With permanent-magnet cores. For use in sample cells and reagent tubes.

| Ø mm | Height mm | SP | Art. No. |
|---------|--------------|----|----------|
| 9 | 6 | 1 | 317297 |



Magnetic stirring-bars circulus, PTFE

With permanent-magnet cores. 20-mm circle Ø, 8-mm shaft Ø.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 32 | 3 | 3125970 |
| 52 | 3 | 3126970 |

Fluoro plastic products

НеваРеактив

Magnetic stirrer retrievers, PE

With permanent magnet on one end and hang-up ring.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 300 | 3 | 318293 |
| 450 | 3 | 318393 |



Magnetic stirrer retrievers, flexible, PTFE



With a powerful permanent-magnet at one end. For retrieving stirring bars from beakers, flasks, and similar. Flexible.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 330 | 1 | 318597 |

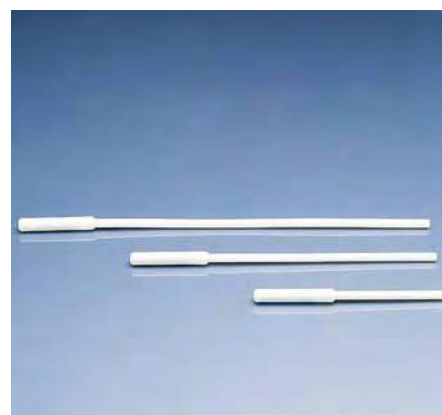


Magnetic stirrer retrievers, PTFE



PTFE encapsulated magnetic core.

| Length mm | SP | Art. No. |
|--------------|----|----------|
| 150 | 1 | 122097 |
| 250 | 1 | 122197 |
| 350 | 1 | 122297 |



НеваРеактив



PTFE-tape

Ultra thin (just 0.10 mm thick), flexible, non-adhering tape. Readily conforms to threads and irregularities. Use to improve sealing of threads, or to increase diameters of mating components for better sealing. Withstands temperatures up to 250 °C.

| Length | Width | SP | Art. No. |
|--------|-------|----|----------|
| m | mm | | |
| 12 | 12 | 10 | 131097 |

Plastic Products in Sterile Packaging

SAVES TIME AND MONEY

НеваРеактив



НеваРеактив

VITLAB [®]
Competence in Labware



Forceps, PMP, β -sterile

White, pointed and self-sprung.

Individually packaged in blister packaging. The outer cardboard box (SP) is marked with a batch number, an indicator point and the expiry date. Sterilization certificate included.

| Length mm | SP | Art. No. |
|--------------|-----|----------|
| 115 | 100 | 6789500 |
| 145 | 100 | 6799500 |



Sample vials, PP, β -sterile



With snap-on lid made of PE-LD. Transparent.

Individually packaged in blister packaging. The outer cardboard box (SP) is marked with a batch number, an indicator point and the expiry date. Sterilization certificate included.

| Volume ml | Height mm | \varnothing mm | SP | Art. No. |
|--------------|--------------|---------------------|----|----------|
| 18 | 57 | 22 | 30 | 6889400 |
| 50 | 97 | 30 | 25 | 6919400 |



Measuring scoops, PP, β -sterile



White, flat bottoms and tops, volume-marked. The scoops are individually packaged in blister packaging (5ml) or in evacuated, sealed poly bags (50, 100 and 500 ml).

Every single sterilized product as well as the outer cardboard box (SP) are marked with a batch number, an indicator point and the expiry date (except art. no. 3929400 – only the cardboard is marked). Sterilization certificate included.

| Volume ml | Length mm | SP | Art. No. |
|--------------|--------------|-----|----------|
| 5 | 82 | 100 | 3929400 |
| 50 | 160 | 50 | 3959400 |
| 100 | 200 | 25 | 3969400 |
| 500 | 315 | 20 | 3989400 |

You can get almost all products in this catalogue in sterile packaging.

VITLAB Promotional

ADVERTISE WITH YOUR GOOD NAME

НеваРеактив



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VITLAB 
Competence in Labware

VITLAB Promoti advertise with y



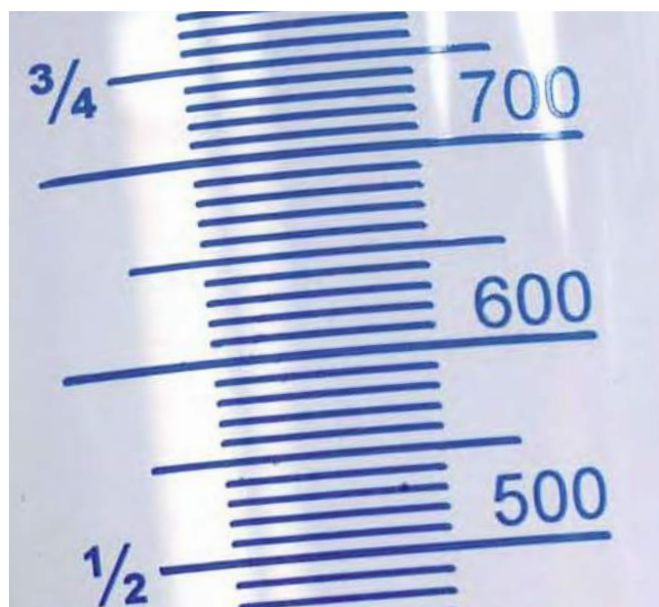
By printing your name and logo on plastic labware, you have the opportunity to reach your customers directly. VITLAB plastic labware assures you of the very best production quality with the highest functionality and consequently with high levels of acceptance. Whether graduated beakers, cylinders, scoops, bottles or buckets, we produce our quality products with your good name printed on them.

onal our good name

Promotional made to measure

VITLAB offers you a special service with its volumetric containers: the volumetric scale can be individually designed according to your needs. However, it is also possible to print other things on our products, for example logos. So they can be used as sales material articles or as giveaways when your products are purchased. VITLAB provides advertising materials of the very highest quality with round, conical or flat printing, using screen or pad printing systems and with particularly durable and luminescent colours according to the Pantone and HKS colour table. Various marking techniques, such as laser printing and heat embossing, provide you with an unmistakable design.

Please do not hesitate to contact us for further information on the available selection, designs and colours of the plastic labware products. A personal contact will ensure that you receive competent advice from the very first conversation to the delivery of your order.



General and technical information

Plastics and their properties

- Classification and type description
- Physical properties
- Chemical resistance
- Cleaning and sterilisation

Accuracy of volume measuring instruments

Suitability for foodstuffs

Products in sterile packaging

Classification and type description of plastics

In general, plastics can be divided into the three groups. Abbreviations of the described plastics according to DIN 7728.

Thermoplastics

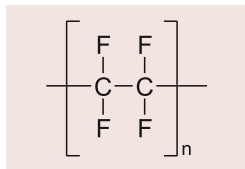
Polymers with a linear molecular structure with or without side branches are transformed into objects during molding operations without changing their thermoplastic properties. Thermoplastics are the materials commonly used in plastic labware production. Hence we provide a brief description of some individual plastics explaining their structural, mechanical, chemical and physical properties. The most popular thermoplastics are polyolefins like polyethylene and polypropylene.

Thermosets

Polymers with tightly cross-linked molecules are very hard and brittle at room temperature; heating causes irreversible curing. These plastics are rarely used for plastic labware. The best known thermosets are the melamine resins. Melamine resin is produced by polycondensation of melamine with formaldehyde.

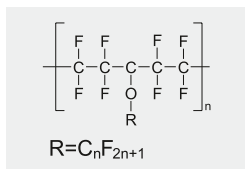
Elastomers

Polymers with loosely cross-linked molecules, exhibiting rubber-like elasticity at room temperature. Heating causes irreversible curing (vulcanization). The most popular Elastomers are natural rubber and silicone rubber.



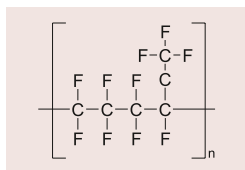
PTFE Polytetrafluoroethylene

PTFE is a fluorinated carbon with a high-molecular, partly crystalline structure. PTFE is resistant to virtually all chemicals. It offers the widest working temperature range, from $-200\text{ }^{\circ}\text{C}$ to $+260\text{ }^{\circ}\text{C}$. Its surface is adhesion resistant. The slip properties and electrical insulation capacity of the material are better than those of FEP and PFA. The only disadvantage is that it can only be molded by sintering processes. PTFE is opaque. It is suitable for use in microwave ovens.



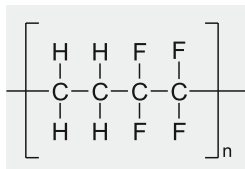
PFA Perfluoroalkoxy copolymer

This is a fluorinated carbon with a high-molecular, partly crystalline structure. Its surface is adhesion-resistant. Mechanical properties and chemical inertness are comparable with those of PTFE. Temperature use is restricted to range $-200\text{ }^{\circ}\text{C}$ to $+250\text{ }^{\circ}\text{C}$. PFA is translucent. PFA is manufactured without the addition of catalysts or plasticizers, and can be molded to produce an extremely smooth, readily cleanable surface, and is therefore particularly well suited for trace analysis.



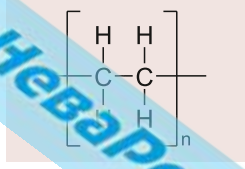
FEP Perfluoroethylene-propylene copolymer

This is a fluorinated carbon with a high-molecular, partly crystalline structure. Its surface is adhesion-resistant. Mechanical properties and chemical inertness are comparable with those of PTFE. Temperature use is restricted to range $-100\text{ }^{\circ}\text{C}$ to $+205\text{ }^{\circ}\text{C}$. The water absorption of FEP is extremely low. FEP is translucent.



ETE Ethylene-Tetrafluoroethylene copolymer

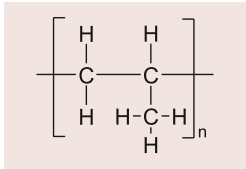
These are ethylene copolymers of chlor-trifluoroethylene and tetrafluoroethylene respectively. Both are plastics of high chemical inertness, but lower temperature resistance than PTFE (max. $150\text{ }^{\circ}\text{C}$).



PE-LD Low Density Polyethylene / PE-HD High Density Polyethylene

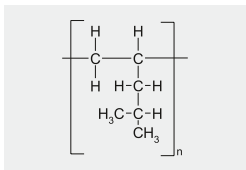
The polymerization of ethylene under high-pressure results in a certain number of branches in the chain. PE-LD exhibits a less compact molecular structure than PE-HD, with very good flexibility and good chemical resistance, but less chemical resistance to organic solvents than PE-HD. Use is limited to temperatures below $80\text{ }^{\circ}\text{C}$. If the polymerization of ethylene is controlled by a catalytic process (PE-HD), a very small number of branches in the chain are obtained. The result is a more rigid and compact structure with enhanced chemical resistance and usability up to $105\text{ }^{\circ}\text{C}$.

Classification and type description of plastics



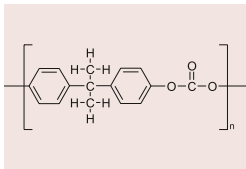
PP Polypropylene

PP has a similar structure to Polyethylene, but with methyl groups at every second carbon atom of the chain. The major advantage, compared with PE, is its higher temperature resistance. It can be repeatedly autoclaved at 121 °C. Like the above mentioned polyolefins, PP has good mechanical properties and good chemical resistance but is slightly more susceptible to be attacked by strong oxidizing agents than PE-HD.



PMP Polymethylpentene

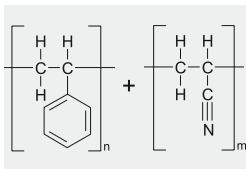
PMP is similar to PP but has isobutyl groups instead of the methyl groups. Chemical resistance is comparable to PP but tends to suffer from tension cracks when exposed to ketones or chlorinated solvents. The most important qualities of PMP are its excellent transparency and good mechanical properties at temperatures up to 150 °C.



PC Polycarbonate

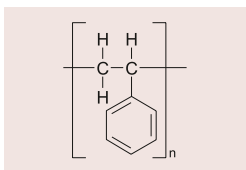
These are thermoplastic linear carboxylic acid polyesters combining many of the properties of metals, glass and plastics. The materials are transparent and have good thermal properties between -130 °C to +125 °C.

Note: PC may be weakened by autoclaving or exposure to alkaline detergents.



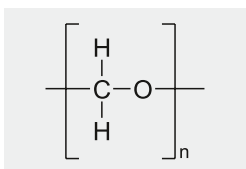
SAN Styrene-acrylonitrile copolymer

This is a glass-clear material with good resistance to stress-cracking. It has slightly better chemical resistance than PP.



PS Polystyrene

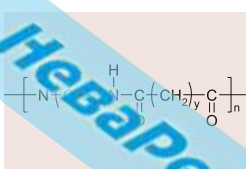
Polystyrene is glass-clear, hard, brittle, and dimensionally stable due to its amorphous structure. PS has good chemical resistance to aqueous solutions but limited resistance to solvents. Disadvantages include low thermal stability and its tendency to suffer from stress-cracks.



POM Polyoxymethylene

POM has superior properties with regard to hardness, rigidity, strength, durability, chemical resistance and favorable slip and abrasion characteristics. POM can replace metals in many applications.

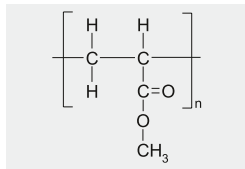
POM can withstand temperatures up to 130 °C.



PA Polyamide

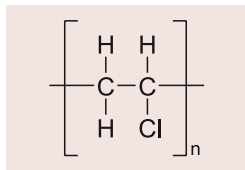
Polyamides are linear polymers with repeating amide chain linkages. With their favorable strength characteristics and high durability, polyamides can often be used as structural materials and for surface coating metals. They have good chemical resistance against organic solvents, but are easily attacked by acids and oxidizing agents.

Classification and type description of plastics



PMMA Polymethylmethacrylate

Rigid, glass-clear („organic glass“). Resistant to atmospheric agents. Replaces glass in many applications where temperatures are below 90 °C and low chemical resistance is required. PMMA has excellent UV radiation stability.



PVC Vinyl chloride polymers

The vinyl chloride polymers are mainly amorphous thermoplastics with very good chemical resistance. Their combination with plasticizers opens up many useful applications, ranging from artificial leather to injection molding components. PVC has good chemical resistance, especially with oils.

Physical properties of plastics

| Plastics | Max. Operating Temperature °C | Brittle-Temperature °C | Micro wave suitability* | Density g/cm |
|----------|-------------------------------|------------------------|-------------------------|--------------|
| PS | 70 | -20 | no | 1,05 |
| SAN | 70 | -40 | no | 1,03 |
| PC | 125 | -130 | yes | 1,20 |
| POM | 130 | -40 | no | 1,42 |
| PMP | 150 | 0 | yes | 0,83 |
| PE-LD | 80 to 90 | -50 | yes | 0,92 |
| PE-HD | 105 | -50 | yes | 0,95 |
| PP | 125 | 0 | yes | 0,90 |
| ETFE | 150 | -100 | yes | 1,70 |
| PFA | 250 | -200 | yes | 2,17 |
| PTFE | 260 | -200 | yes | 2,17 |
| FEP | 205 | -100 | yes | 2,15 |
| PVC | 80 | -20 | no | 1,35 |
| NR | 80 | -40 | no | 1,20 |
| PMMA | 65 to 95 | -50 | no | 1,18 |
| MF | 120 | -80 | yes | 1,50 |

* Observe chemical and temperature resistance

Chemical resistance

With regard to chemical resistance, plastics are classified as follows:

+

Excellent chemical resistance

Continuous exposure to the substance does not cause damage within 30 days. The plastic may remain resistant for years.

0

Good to limited resistance

Continuous exposure to the substance causes minor damages, some of which is reversible, within 7-30 days (e.g. swelling, softening, decrease of mechanical strength, discoloration).

—

Poor chemical resistance

Not suitable for continuous medium exposure to the substance. Immediate damage may occur (loss of mechanical strength, deformation, discolouration, cracking, dissolution).

Chemical resistance

| Medium | PS | | SAN | | PC | | POM | | PMP | | PE-LD | | PE-HD | |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|------|
| | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C |
| Acetaldehyde | - | - | - | - | 0 | - | + | + | 0 | - | + | - | + | 0 |
| Acetic acid (glacial), 100% | - | - | - | - | - | - | - | - | + | 0 | + | 0 | + | + |
| Acetic acid, 96% | 0 | 0 | + | 0 | + | 0 | 0 | - | + | + | + | + | + | + |
| Acetic anhydride | - | - | - | - | - | - | - | - | + | 0 | - | - | 0 | 0 |
| Acetone | - | - | - | - | - | - | + | + | + | + | + | 0 | + | + |
| Acetonitrile | - | - | - | - | - | - | + | - | 0 | - | + | 0 | + | 0 |
| Acetophenone | - | - | - | - | - | - | + | - | 0 | - | - | - | 0 | 0 |
| Acetylacetone | - | - | - | - | - | - | + | - | + | - | - | - | + | + |
| Acetylchloride | - | - | - | - | - | - | - | - | - | - | + | - | + | + |
| Acrylic acid | - | - | - | - | - | - | - | - | + | - | + | - | + | + |
| Acrylonitrile | - | - | - | - | - | - | - | - | - | - | + | + | + | + |
| Adipic acid | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Allyl alcohol | + | 0 | - | - | + | 0 | + | + | + | 0 | + | + | + | + |
| Aluminium chloride | + | + | + | + | - | - | + | 0 | + | + | + | + | + | + |
| Aluminium hydroxide | 0 | 0 | 0 | 0 | 0 | - | + | + | + | 0 | + | + | + | + |
| Amino acids | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ammonium chloride | + | + | + | + | 0 | 0 | + | + | + | + | + | + | + | + |
| Ammonium fluoride | + | + | + | + | 0 | 0 | + | + | + | + | + | + | + | + |
| Ammonium hydroxide, 30% (Ammonia) | 0 | - | + | 0 | - | - | 0 | 0 | + | + | + | + | + | + |
| Ammonium sulfate | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| n-Amyl acetate | - | - | - | - | - | - | + | + | + | 0 | 0 | - | + | 0 |
| Amyl alcohol (Pentanol) | 0 | 0 | + | + | + | + | + | + | + | + | + | + | + | + |
| Amyl chloride (Chloropentane) | - | - | - | - | - | - | + | + | - | - | - | - | - | - |
| Aniline | - | - | - | - | 0 | - | 0 | 0 | + | 0 | + | 0 | + | + |
| Barium chloride | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Benzaldehyde | - | - | - | - | 0 | - | + | + | + | + | + | + | + | + |
| Benzene (Benzol) | - | - | - | - | - | - | + | 0 | 0 | 0 | 0 | - | + | + |
| Benzene (Gasoline) | - | - | - | - | 0 | - | + | + | 0 | 0 | 0 | - | + | + |
| Benzoyl chloride | - | - | - | - | - | - | + | 0 | 0 | 0 | 0 | - | + | + |
| Benzyl alcohol | - | - | - | - | 0 | 0 | + | + | 0 | - | 0 | - | 0 | - |

Chemical resistance of plastics to classes of substances

| Classes of substances at 20°C | PS | SAN | PC | POM | PMP | PE-LD | PE-HD | PP | ETFE | PFA | PTFE | FEP | PMMA | MFR | |
|-----------------------------------|----|-----|----|-----|-----|-------|-------|----|------|-----|------|-----|------|-----|---|
| Alcohols, aliphatic | + | + | + | + | + | + | + | + | + | + | + | + | + | - | + |
| Ether | - | - | - | + | - | 0 | 0 | 0 | + | + | + | + | - | - | - |
| Aldehydes | - | - | 0 | 0 | 0 | 0 | + | + | + | + | + | + | - | 0 | 0 |
| Ester | - | - | - | - | 0 | 0 | 0 | 0 | + | + | + | + | - | 0 | 0 |
| Hydrocarbons, aliphatic | - | - | 0 | + | 0 | 0 | + | + | + | + | + | + | + | - | + |
| Hydrocarbons, aromatic | - | - | - | + | - | 0 | + | 0 | + | + | + | + | - | - | - |
| Hydrocarbons, halogenated | - | - | - | + | - | 0 | 0 | 0 | + | + | + | + | - | - | - |
| Ketones | - | - | - | + | 0 | 0 | 0 | 0 | + | + | + | + | - | - | - |
| Alkalis | + | + | - | + | + | + | + | + | + | + | + | + | + | + | - |
| Acids, strong or concentrated | 0 | - | - | - | + | + | + | + | + | + | + | + | + | - | - |
| Acids, weak or diluted | 0 | 0 | 0 | - | + | + | + | + | + | + | + | + | + | 0 | - |
| Oxidizing acids, oxidizing agents | - | - | - | - | - | - | - | - | + | + | + | + | - | - | - |

The recommendations listed here are based on technical literature and information provided by the manufacturers of raw materials. They were prepared carefully and are intended to inform and advise. However, they cannot replace suitability testing performed by the user under actual working conditions.

Chemical resistance

| PP | | ECTFE/ETFE | | PFA/FEP | | PTFE | | FKM | | PVC | | NR | | SI | | MF |
|------|------|------------|------|---------|------|------|------|------|------|------|------|------|------|------|------|------|
| 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C |
| + | - | + | 0 | + | + | + | + | - | - | - | - | 0 | 0 | | | |
| + | 0 | + | + | + | + | + | + | - | - | | | 0 | | - | - | 0 |
| + | + | + | + | + | + | + | + | - | - | + | 0 | 0 | 0 | - | - | + |
| 0 | 0 | + | + | + | + | + | + | - | - | - | - | 0 | | 0 | - | |
| + | + | + | 0 | + | + | + | + | - | - | - | - | 0 | 0 | 0 | 0 | + |
| + | 0 | + | + | + | + | + | + | - | - | - | - | - | - | - | - | |
| 0 | 0 | + | + | + | + | + | + | - | - | - | - | - | - | - | - | + |
| + | | + | + | + | + | + | + | - | - | - | - | - | - | - | - | |
| + | | + | + | + | + | + | + | - | - | - | - | - | - | - | - | |
| 0 | - | + | + | + | + | + | + | - | - | - | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | 0 | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | | 0 | - | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | | + | 0 | + | + | + | + | + |
| + | + | + | + | + | + | + | + | + | | + | + | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | + | + | 0 | + | + | + | + | |
| + | + | + | + | + | + | + | + | 0 | | + | 0 | | | | | |
| + | + | + | + | + | + | + | + | - | - | + | 0 | - | - | + | + | + |
| + | + | | | | | + | + | - | - | + | + | 0 | | 0 | | |
| 0 | - | + | + | + | + | + | + | - | - | - | - | + | 0 | - | - | |
| + | + | + | + | + | + | + | + | 0 | | 0 | 0 | + | + | - | - | |
| - | - | + | + | + | + | + | + | + | | - | - | - | - | - | - | |
| + | + | + | 0 | + | + | + | + | - | - | - | - | - | - | + | 0 | |
| + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| + | + | + | 0 | + | 0 | + | + | - | - | - | - | - | - | - | - | |
| + | 0 | + | + | + | + | + | + | 0 | - | - | - | - | - | - | - | + |
| + | 0 | + | + | + | + | + | + | + | 0 | 0 | - | - | - | - | - | + |
| + | 0 | + | + | | | + | + | + | | - | - | - | - | - | - | |
| 0 | + | + | + | + | + | + | + | + | | 0 | 0 | + | + | + | + | |

Chemical resistance

| Medium | PS | | SAN | | PC | | POM | | PMP | | PE-LD | | PE-HD | |
|----------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|------|
| | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C |
| Benzylamine | - | - | - | - | - | - | + | | 0 | | 0 | - | 0 | |
| Benzylchloride | - | - | | | | | + | | | | | | | |
| Boric acid, 10% | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Bromine | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bromobenzene | - | - | - | - | - | - | | | - | - | - | - | - | - |
| Bromoform | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bromonaphthalene | - | - | - | - | | | | | | | | | | |
| Butanediol | - | - | - | - | | | + | + | + | + | + | + | + | + |
| 1-Butanol | 0 | - | + | 0 | 0 | 0 | + | + | + | 0 | + | + | + | + |
| n-Butyl acetate | - | - | - | - | - | - | + | 0 | + | 0 | 0 | 0 | + | + |
| Butyl methyl ether | - | - | - | - | - | - | + | + | + | - | 0 | - | 0 | - |
| Butylamine | - | - | - | - | | | + | + | | | | | | |
| Butyric acid | - | - | - | - | 0 | - | | | | | - | - | 0 | - |
| Calcium carbonate | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Calcium chloride | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Calcium hydroxide | + | 0 | + | + | - | - | + | + | + | + | + | + | + | + |
| Calcium hypochlorite | + | + | + | 0 | 0 | - | + | + | + | 0 | + | + | + | + |
| Calomel | + | 0 | + | + | + | + | 0 | 0 | + | + | + | + | + | + |
| Carbon disulfide | - | - | - | - | - | - | + | + | - | - | - | - | - | - |
| Carbon tetrachloride | - | - | - | - | - | - | 0 | 0 | - | - | - | - | 0 | - |
| Chloro naphthalene | | | | | | | - | - | | | | | | |
| Chloroacetaldehyde, 45% | - | - | - | - | | | | | | | | | | |
| Chloroacetic acid | - | - | - | - | 0 | - | - | - | + | + | + | + | + | + |
| Chloroacetone | - | - | - | - | | | | | | | | | | |
| Chlorobenzene | - | - | - | - | - | - | | | - | - | - | - | - | - |
| Chlorobutane | - | - | - | - | | | | | 0 | - | 0 | - | 0 | - |
| Chloroform | - | - | - | - | - | - | - | - | 0 | - | - | - | + | 0 |
| Chlorosulfonic acid | | | | | | | - | - | | | | | | |
| Chromic acid, 10% | - | - | - | - | + | 0 | 0 | 0 | + | + | + | + | + | + |
| Chromic acid, 50% | - | - | 0 | 0 | 0 | - | - | - | 0 | 0 | + | 0 | + | 0 |
| Chromosulfuric acid | 0 | 0 | 0 | 0 | - | - | - | - | 0 | - | - | - | - | - |
| Copper sulfate | + | + | + | 0 | + | + | + | + | + | + | + | + | + | + |
| Cresol | - | - | | | - | - | | | - | - | - | - | 0 | - |
| Cumene (Isopropyl benzene) | - | - | - | - | - | - | + | - | - | - | 0 | - | + | 0 |
| Cyclohexane | - | - | | | + | 0 | + | + | - | - | 0 | - | 0 | - |
| Cyclohexanone | - | - | | | - | - | | | 0 | 0 | - | - | 0 | - |
| Cyclopentane | - | - | | | - | - | | | 0 | - | - | - | 0 | - |
| Decane | | | | | 0 | | + | | 0 | | | | 0 | - |
| 1-Decanol | 0 | | 0 | | 0 | | + | | + | | | | + | |
| Dibenzylether | - | - | - | - | | | + | | 0 | | | | + | |
| Dibromoethane | | | | | | | | | | | | | | |
| Dibutyl phthalate | - | - | - | - | - | - | + | + | + | 0 | 0 | - | 0 | - |
| Dichloroacetic acid | 0 | - | | | 0 | - | | | + | + | 0 | - | 0 | 0 |
| Dichlorobenzene | - | - | - | - | - | - | - | - | - | - | 0 | - | 0 | - |
| Dichloroethane | | | | | | | - | - | 0 | - | 0 | - | 0 | - |
| Dichloromethane | - | - | | | - | - | | | 0 | - | 0 | - | 0 | - |
| Diesel oil (Heating oil) | - | - | - | - | - | - | + | + | 0 | - | 0 | - | + | 0 |
| Diethanolamine | - | - | - | - | - | - | | | | | | | 0 | |
| Diethyl ether | - | - | - | - | - | - | + | + | - | - | - | - | 0 | - |
| Diethylamine | 0 | 0 | | | - | - | | | 0 | 0 | - | - | 0 | - |
| 1,2-Diethylbenzene | - | - | | | 0 | - | | | - | - | - | - | 0 | - |
| Diethylene glycol | 0 | - | + | + | 0 | 0 | + | + | + | + | + | + | + | + |
| Dimethyl sulfoxide (DMSO) | - | - | - | - | - | - | | | + | + | + | + | + | + |
| Dimethylamine | - | - | - | - | - | - | | | | | | | | |

Chemical resistance

| PP | | ECTFE/ETFE | | PFA/FEP | | PTFE | | FKM | | PVC | | NR | | SI | | MF |
|------|------|------------|------|---------|------|------|------|------|------|------|------|------|------|------|------|------|
| 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C |
| 0 | | + | + | + | + | + | + | + | | - | - | - | - | 0 | | |
| | | + | + | | | + | + | + | | | | | | - | - | |
| + | + | + | + | + | + | + | + | + | | + | + | + | + | + | + | |
| - | - | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| - | - | 0 | - | + | + | + | + | + | | - | - | - | - | - | - | |
| - | - | + | + | + | + | + | + | | | - | - | - | - | - | - | |
| | | + | + | + | + | + | + | | | | | | | | | |
| + | + | + | + | + | + | + | + | - | - | | | 0 | | - | - | |
| + | + | + | + | + | + | + | + | + | | 0 | 0 | + | + | + | + | |
| 0 | 0 | + | + | + | + | + | + | - | - | - | - | 0 | - | - | - | |
| + | 0 | + | 0 | + | + | + | + | - | - | - | - | - | - | - | - | |
| | | + | + | | | + | + | - | - | | | - | - | | | |
| - | - | + | + | + | + | + | + | 0 | | | | - | - | | | |
| + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | | 0 | - | + | + | 0 | 0 | |
| + | + | + | + | + | + | + | + | + | | + | + | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | + | 0 | - | + | + | + | 0 | |
| + | + | + | + | + | + | + | + | + | | - | - | + | + | | | |
| - | - | + | 0 | + | + | + | + | + | | - | - | - | - | + | + | |
| - | - | + | + | + | + | + | + | + | | - | - | - | - | - | - | + |
| | | + | + | | | + | + | + | | | | - | - | | | |
| | | + | + | | | + | + | | | | | | | | | |
| + | + | + | + | + | + | + | + | 0 | | + | 0 | - | - | - | - | |
| | | + | + | | | + | + | - | - | | | 0 | | | | |
| 0 | - | + | 0 | + | + | + | + | 0 | - | - | - | - | - | - | - | |
| 0 | - | + | + | + | + | + | + | 0 | - | - | - | - | - | - | - | |
| - | - | + | 0 | + | 0 | + | + | 0 | | - | - | - | - | - | - | + |
| | | 0 | - | + | + | + | + | - | - | | | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | 0 | - | - | 0 | - | |
| 0 | 0 | + | + | + | + | + | + | + | | + | - | - | - | - | - | |
| - | - | + | + | + | + | + | + | + | | + | 0 | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | 0 | + | + | + | + | |
| 0 | 0 | + | 0 | + | + | + | + | + | | - | - | - | - | | | |
| 0 | - | + | + | + | + | + | + | + | | - | - | - | - | - | - | |
| 0 | - | + | 0 | + | + | + | + | + | | - | - | - | - | - | - | + |
| 0 | - | + | + | + | + | + | + | - | - | - | - | - | - | - | - | |
| 0 | - | + | + | + | + | + | + | + | | - | - | - | - | - | - | |
| 0 | | + | + | + | + | + | + | + | | 0 | | - | - | - | - | |
| + | | + | + | + | + | + | + | + | | + | | 0 | | 0 | | |
| + | | + | + | + | + | + | + | - | - | | | - | - | | | |
| | | 0 | | + | | + | + | | | | | | | | | |
| + | 0 | + | + | + | + | + | + | 0 | | - | - | - | - | 0 | - | |
| 0 | - | + | 0 | + | + | + | + | - | - | 0 | - | - | - | - | - | |
| 0 | - | + | 0 | + | + | + | + | + | | - | - | - | - | - | - | |
| 0 | - | + | + | + | + | + | + | 0 | | | | - | - | - | - | |
| 0 | - | 0 | 0 | + | + | + | + | 0 | | - | - | - | - | - | - | |
| + | 0 | + | + | + | + | + | + | + | | 0 | - | - | - | - | - | |
| 0 | | | | | | + | + | | | | | | | | | |
| 0 | - | + | + | + | + | + | + | - | - | - | - | - | - | - | - | |
| 0 | - | + | 0 | + | + | + | + | - | - | - | - | 0 | | 0 | | |
| | | + | + | + | + | + | + | + | | - | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | - | - | + | + | + | + | |
| + | | + | + | + | + | + | + | | | - | - | | | + | + | |
| | | + | + | + | + | + | + | 0 | | | | - | - | 0 | | |

Chemical resistance

| Medium | PS | | SAN | | PC | | POM | | PMP | | PE-LD | | PE-HD | |
|---|------|------|------|------|------|------|------|------|------|------|-------|------|-------|------|
| | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C |
| Dimethylformamide (DMF) | - | - | - | - | - | - | + | + | + | + | + | + | + | + |
| 1.4 Dioxane | - | - | - | - | 0 | 0 | 0 | 0 | 0 | 0 | + | 0 | + | + |
| Diphenyl ether | - | - | - | - | | | 0 | | | | | | | |
| Ethanol | - | - | 0 | - | + | 0 | + | + | + | 0 | + | + | + | + |
| Ethanolamine | | | | | | | | | | | | | | |
| Ethyl acetate | - | - | | | - | - | | | 0 | - | + | + | + | + |
| Ethyl methyl ketone | - | - | - | - | - | - | - | - | - | - | 0 | - | 0 | - |
| Ethylbenzene | - | - | - | - | - | - | | | - | - | - | - | - | - |
| Ethylene glycol (glycol) | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ethylene oxide | - | - | - | - | 0 | - | + | + | 0 | - | 0 | 0 | 0 | 0 |
| Fluoroacetic acid | - | - | - | - | - | - | - | - | | | | | | |
| Formaldehyde, 40% | - | - | + | + | + | 0 | + | + | + | + | + | + | + | + |
| Formamide | | | | | | | - | - | + | + | + | + | + | + |
| Formic acid, 100% | + | 0 | 0 | 0 | + | 0 | - | - | + | 0 | + | + | + | + |
| Glycerol | + | + | + | + | + | + | 0 | 0 | + | + | + | + | + | + |
| Glycolic acid, 50% | | | | | | | | | + | + | + | + | + | + |
| Heating oil (Diesel oil) | - | - | - | - | - | - | + | + | 0 | - | 0 | - | + | 0 |
| Heptane | - | - | | | + | 0 | | | 0 | 0 | 0 | - | 0 | 0 |
| Hexane | 0 | - | + | + | - | - | + | + | 0 | - | 0 | - | + | 0 |
| Hexanoic acid | | | | | | | | | | | | | | |
| Hexanol | | | | | | | | | + | + | + | + | + | + |
| Hydriodic acid | | | | | | | | | + | + | + | + | + | + |
| Hydrobromic acid | 0 | - | | | + | + | - | - | + | + | + | + | + | + |
| Hydrochloric acid, 10% | + | + | 0 | - | - | - | - | - | + | + | + | + | + | + |
| Hydrochloric acid, 20% | + | + | 0 | - | 0 | 0 | - | - | + | + | + | + | + | + |
| Hydrochloric acid, 20-37 % | 0 | 0 | 0 | - | - | - | - | - | + | + | + | + | + | + |
| Hydrofluoric acid, 40% | + | + | + | 0 | - | - | - | - | + | + | + | + | + | + |
| Hydrofluoric acid, 70% | - | - | - | - | - | - | - | - | + | 0 | + | - | + | 0 |
| Hydrogen peroxide, 35% | + | + | + | + | + | + | + | - | + | + | + | + | + | + |
| Isoamyl alcohol | | | | | | | + | + | + | + | + | + | + | + |
| Isobutanol | 0 | 0 | 0 | - | + | + | + | + | + | + | + | + | + | + |
| Isooctane | 0 | - | 0 | - | 0 | | | | | | | | | |
| Isopropanol (2-Propanol) | 0 | 0 | + | - | + | + | + | + | + | + | + | + | + | + |
| Isopropyl ether | - | - | | | - | - | | | - | - | - | - | - | - |
| Lactic acid | + | + | + | + | + | + | + | - | + | + | + | + | + | + |
| Lugol's solution (iodine-potassium iodide solution) | 0 | - | 0 | - | 0 | - | 0 | 0 | + | 0 | - | - | - | - |
| Mercury | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Methanol | 0 | - | 0 | - | + | 0 | + | + | + | + | + | 0 | + | + |
| Methoxybenzene | - | - | - | - | - | - | 0 | | | | | | | |
| Methyl formate | - | - | - | - | - | - | + | | | | | | | |
| Methyl propyl ketone | - | - | - | - | - | - | + | + | 0 | 0 | + | 0 | + | + |
| Methylene chloride | - | - | - | - | - | - | - | - | - | - | 0 | - | 0 | - |
| Mineral oil (Engine oil) | + | | + | | + | | + | + | + | + | + | 0 | + | + |
| Monochloroacetic acid | - | - | - | - | 0 | - | - | - | + | + | + | + | + | + |
| Nitric acid, 10% | - | - | + | 0 | + | 0 | - | - | + | + | + | + | + | + |
| Nitric acid, 30% | - | - | 0 | - | + | 0 | - | - | 0 | - | 0 | 0 | 0 | - |
| Nitric acid, 70% | - | - | - | - | - | - | - | - | 0 | - | - | - | - | - |
| Nitrobenzene | - | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - |
| Nitrohydrochloric acid | 0 | - | 0 | - | - | - | - | - | 0 | 0 | - | - | - | - |
| Oleic acid | - | - | - | - | | | | | | | | | | |
| Oleic acid | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ozone | 0 | 0 | 0 | 0 | - | - | - | - | + | + | 0 | - | 0 | - |
| n-Pentane | | | | | | | | | | | | | | |
| Peracetic acid | | | | | - | - | - | - | | | | | | |

Chemical resistance

| PP | | ECTFE/ETFE | | PFA/FEP | | PTFE | | FKM | | PVC | | NR | | SI | | MF |
|------|------|------------|------|---------|------|------|------|------|------|------|------|------|------|------|------|------|
| 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C |
| + | + | + | + | + | + | + | + | - | - | 0 | - | - | - | + | + | |
| + | 0 | + | 0 | + | + | + | + | | | - | - | - | - | - | - | |
| | | | | | | + | + | 0 | | | | - | - | - | - | |
| + | + | + | + | + | + | + | + | 0 | + | 0 | + | + | + | + | + | + |
| + | | + | + | + | + | + | + | | | | | | | | | |
| + | 0 | + | + | + | + | + | + | - | - | - | - | - | - | | | + |
| + | 0 | 0 | 0 | + | + | + | + | - | - | - | - | - | - | | | |
| - | - | 0 | 0 | + | + | + | + | | | - | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | 0 | | + | + | + | + | + | + | + |
| 0 | - | + | + | + | + | + | + | | | 0 | - | - | - | - | - | |
| | | | | | | + | + | - | - | - | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | 0 | | 0 | - | + | + | | | |
| + | + | + | + | + | + | + | + | 0 | | | | + | | | | |
| + | + | + | + | + | + | + | + | - | - | - | - | 0 | 0 | + | + | + |
| + | + | + | + | + | + | + | + | 0 | | + | + | + | + | + | + | + |
| + | + | + | + | + | + | + | + | 0 | | | | + | | + | | |
| + | 0 | + | + | + | + | + | + | + | | 0 | - | - | - | - | - | |
| 0 | 0 | + | + | + | + | + | + | + | | - | - | - | - | - | - | |
| + | 0 | + | + | + | + | + | + | + | | 0 | - | - | - | - | - | |
| | | | | | | + | + | | | | | | | | | |
| + | + | + | + | + | + | + | + | + | | | | 0 | | 0 | | |
| + | + | + | + | + | + | + | + | + | | | | 0 | | | | |
| + | + | + | + | + | + | + | + | + | + | + | | 0 | | 0 | - | - |
| + | + | + | + | + | + | + | + | + | 0 | 0 | | 0 | | - | - | - |
| + | + | + | + | + | + | + | + | 0 | - | 0 | - | 0 | - | - | - | - |
| + | + | + | + | + | + | + | + | | | 0 | - | 0 | 0 | - | - | - |
| + | 0 | + | + | + | + | + | 0 | | | - | - | - | - | - | - | - |
| + | + | + | + | + | + | + | + | + | | + | 0 | - | - | 0 | 0 | 0 |
| + | + | + | + | + | + | + | + | + | | | | 0 | | 0 | | |
| + | + | + | + | + | + | + | + | + | + | + | 0 | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | | + | 0 | + | + | + | + | |
| | | + | + | + | + | + | + | - | - | | | - | - | | | |
| | | + | + | + | + | + | + | | | | | - | - | 0 | - | |
| + | 0 | + | + | + | + | + | + | | | - | - | - | - | 0 | - | |
| 0 | - | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | + | - | - | + | 0 | |
| + | + | + | + | + | + | + | + | 0 | | + | 0 | - | - | - | - | |
| + | + | + | + | + | + | + | + | 0 | - | + | 0 | - | - | - | - | - |
| 0 | - | + | + | + | + | + | + | 0 | - | 0 | - | - | - | - | - | - |
| - | - | + | + | + | + | + | + | 0 | - | - | - | - | - | - | - | - |
| - | - | + | + | + | + | + | + | - | - | - | - | - | - | - | - | - |
| 0 | - | + | + | + | + | + | + | - | - | 0 | 0 | - | - | - | - | - |
| | | + | + | + | + | + | + | 0 | | | | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | + | + | + | + | + | |
| | - | + | + | + | + | + | + | 0 | | + | 0 | - | - | 0 | 0 | |
| | | + | + | + | + | + | + | + | | | | - | - | - | - | |
| | | + | + | + | + | + | + | | | | | - | - | - | - | |

Chemical resistance

| Medium | PS | | SAN | | PC | | POM | | PMP | | PE-LD | | PE-HD | |
|--------------------------------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|------|
| | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C |
| Perchloric acid | - | - | - | - | - | - | - | - | 0 | - | + | - | + | - |
| Perchloroethylene | - | - | 0 | 0 | - | - | + | 0 | - | - | - | - | - | - |
| Petroleum | - | - | | | 0 | 0 | + | + | 0 | 0 | 0 | - | 0 | - |
| Petroleum ether | - | - | | | | | + | + | | | 0 | | | |
| Phenol | - | - | - | - | - | - | - | - | 0 | 0 | + | 0 | + | + |
| Phenylethanol | | | | | | | | | | | | | 0 | |
| Phenylhydrazine | | | | | | | | | | | | | 0 | |
| Phosphoric acid, 85% | + | 0 | + | + | + | + | + | - | + | + | + | + | + | + |
| Piperidine | | | | | | | | | | | | | + | |
| Potassium chloride | 0 | 0 | 0 | 0 | + | + | + | + | + | + | + | + | + | + |
| Potassium dichromate | | | | | | | | | | | | | | |
| Potassium hydroxide | 0 | 0 | 0 | 0 | - | - | + | + | + | + | + | + | + | + |
| Potassium permanganate | + | + | + | 0 | + | + | 0 | 0 | + | + | + | + | + | + |
| Propanol | 0 | | + | + | 0 | | + | + | + | + | + | + | + | + |
| Propionic acid | 0 | - | | | - | - | - | - | + | 0 | 0 | - | + | 0 |
| Propylene glycol (Propanediol) | + | + | - | - | + | 0 | + | + | + | + | + | + | + | + |
| Pyridine | - | - | - | - | - | - | + | 0 | + | 0 | + | 0 | + | 0 |
| Salicylaldehyde | - | - | - | - | 0 | 0 | | | + | + | + | + | + | + |
| Salicylic acid | + | + | + | + | | | - | - | + | + | + | + | + | + |
| Silver acetate | 0 | 0 | 0 | 0 | + | + | 0 | 0 | + | + | + | + | + | + |
| Silver nitrate | 0 | 0 | + | + | + | + | 0 | 0 | + | + | + | + | + | + |
| Sodium acetate | + | + | + | + | + | + | + | 0 | + | + | + | + | + | + |
| Sodium chloride | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Sodium dichromate | + | 0 | + | 0 | + | - | + | + | + | + | + | + | + | + |
| Sodium fluoride | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Sodium hydroxide, 30% | + | + | + | + | - | - | + | + | + | + | + | + | + | + |
| Sulfuric acid, 60% | - | - | + | 0 | 0 | 0 | - | - | + | + | + | + | + | + |
| Sulfuric acid, 98% | - | - | - | - | - | - | - | - | + | + | 0 | - | 0 | - |
| Tartaric acid | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Tetrachloroethylene | | | | | | | | | | | | | | |
| Tetrahydrofuran (THF) | - | - | - | - | - | - | 0 | 0 | 0 | - | 0 | - | 0 | - |
| Tetramethylammonium hydroxide | | | | | - | - | - | - | | | | | | |
| Toluene | - | - | - | - | - | - | + | + | 0 | - | 0 | - | 0 | 0 |
| Trichloroacetic acid | 0 | - | | | 0 | - | | | + | + | 0 | - | 0 | 0 |
| Trichlorobenzene | - | - | | | - | - | | | 0 | 0 | - | - | - | - |
| Trichloroethane | - | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - |
| Trichloroethylene | - | - | - | - | - | - | - | - | - | - | - | - | 0 | - |
| Trichlorotrifluoroethane | - | - | - | - | | | | | | | | | | |
| Triethanolamine | - | - | - | - | | | | | | | | | | |
| Triethylene glycol | + | 0 | + | + | + | 0 | + | 0 | + | + | + | + | + | + |
| Trifluoroethane | - | - | - | - | | | | | | | | | | |
| Trifluoroacetic acid (TFA) | - | - | - | - | | | - | - | | | | | | |
| Tripropylene glycol | + | + | + | + | + | 0 | + | 0 | + | + | + | + | + | + |
| Turpentine | - | - | 0 | 0 | - | - | + | + | 0 | 0 | 0 | - | 0 | - |
| Urea | + | + | + | + | - | - | + | + | + | + | + | + | + | + |
| Xylene | - | - | - | - | - | - | + | + | 0 | - | 0 | - | 0 | - |
| Zinc chloride, 10% | + | + | + | + | + | + | + | 0 | + | + | + | + | + | + |
| Zinc sulfate, 10% | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

Chemical resistance

| PP | | ECTFE/ETFE | | PFA/FEP | | PTFE | | FKM | | PVC | | NR | | SI | | MF |
|------|------|------------|------|---------|------|------|------|------|------|------|------|------|------|------|------|------|
| 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C | 50°C | 20°C |
| + | - | + | + | + | 0 | + | + | + | | 0 | - | 0 | - | 0 | - | |
| - | - | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| 0 | - | + | + | + | + | + | + | + | | + | - | - | - | 0 | | |
| | | + | + | + | + | + | + | + | | 0 | - | - | - | 0 | | |
| + | + | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| 0 | | + | + | + | + | + | + | | | | | | | | | |
| 0 | | + | + | + | + | + | + | 0 | | | | 0 | | | | |
| + | + | + | + | + | + | + | + | + | | + | 0 | - | - | 0 | 0 | - |
| + | | + | + | + | + | + | + | - | - | | | - | - | | | |
| + | + | + | + | + | + | + | + | | | + | 0 | + | + | + | + | |
| | | | | | | + | + | 0 | | | | 0 | | | | |
| + | + | + | + | + | + | + | + | - | - | 0 | 0 | + | + | - | - | - |
| + | + | + | + | + | + | + | + | + | | + | + | + | 0 | | | |
| + | + | + | + | + | + | + | + | + | | + | + | + | | 0 | | |
| + | 0 | + | 0 | + | + | + | + | + | | 0 | - | - | - | | | |
| + | + | + | + | + | + | + | + | + | + | 0 | - | + | | | | |
| 0 | 0 | - | - | + | + | + | + | - | - | 0 | - | - | - | - | - | |
| + | + | + | - | + | + | + | + | | | - | - | | | | | |
| + | + | + | + | + | + | + | + | + | + | 0 | - | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | + | 0 | 0 | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | | 0 | 0 | + | + | + | + | |
| + | + | + | + | + | + | + | + | - | - | 0 | 0 | + | + | + | 0 | |
| + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0 | | |
| + | + | + | + | + | + | + | + | + | + | + | + | + | + | 0 | 0 | |
| + | + | + | + | + | + | + | + | 0 | | + | + | + | + | 0 | 0 | - |
| - | - | + | + | + | + | + | + | + | | 0 | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | + | + | + | + | + | - |
| | | 0 | | + | | + | + | 0 | | | | - | - | | | |
| 0 | - | + | 0 | 0 | 0 | + | + | - | | - | - | - | - | - | - | + |
| | | + | + | + | + | + | + | - | | | | | | | | |
| 0 | - | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| 0 | - | + | 0 | + | + | + | + | - | - | 0 | - | 0 | | | | |
| - | - | + | 0 | + | + | + | + | | | - | - | | | | | |
| - | - | + | + | + | + | + | + | + | | - | - | - | - | - | - | |
| - | - | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| | | 0 | - | + | + | + | + | | | | | - | - | - | - | |
| | | | | + | + | + | + | - | - | | | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | + | 0 | - | + | + | + | + | |
| | | | | + | 0 | + | + | + | | | | - | - | - | - | |
| | | | | + | - | + | 0 | - | - | | | | | | | |
| + | + | + | + | + | + | + | + | | | 0 | - | + | + | + | + | |
| - | - | + | + | + | + | + | + | + | | + | + | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | 0 | - | + | + | + | + | + |
| - | - | + | + | + | + | + | + | 0 | | - | - | - | - | - | - | |
| + | + | + | + | + | + | + | + | + | | + | 0 | + | + | + | + | |
| + | + | + | + | + | + | + | + | + | | 0 | - | + | + | + | + | |

Cleaning and sterilization* of plastics

| Plastics | Autoclavable at 121 °C, t _e 20 min per DIN | Hot air at 160 °C (dry) | Gas (Ethyleneoxide) | Chemical (Formalin, Ethanol) | β-/γ-radiation 25kGy |
|----------|--|----------------------------|------------------------|---------------------------------|-------------------------|
| PS | no | no | no | yes | yes |
| SAN | no | no | yes | yes | no |
| PC | yes ¹⁾ | no | yes | yes | yes |
| POM | yes ¹⁾ | no | yes | yes | yes (restricted) |
| PMP | yes | no | yes | yes | yes |
| PE-LD | no | no | yes | yes | yes |
| PE-HD | no | no | yes | yes | yes |
| PP | yes | no | yes | yes | yes (restricted) |
| ETFE | yes | no | yes | yes | no |
| PFA | yes | yes | yes | yes | no |
| PTFE | yes | yes | yes | yes | no |
| FEP | yes | yes | yes | yes | no |
| PVC | no | no | yes | yes | no |
| NR | no | no | yes | yes | no |
| PMMA | no | no | no | yes | yes |
| MF | no | no | yes | no | no |

* Before sterilization labware must be carefully cleaned and rinsed with distilled water. Always remove covers from containers!

¹⁾ Frequent autoclaving may reduce mechanical stability!

Cleaning and sterilization of plastics laboratory equipment

All polyolefines, such as PE-LD, PE-HD, PP and PMP, as well as the fluoropolymers PTFE, PFA, FEP, ETFE and ECTFE have water-repellent surfaces that are very durable and easy to clean. Scrubbing agents or scouring pads should not be used for laboratory equipment made of plastics, but you may use generic alkaline cleaning agents. Equipment made from the materials mentioned above can be cleaned and dried in a lab washer, with other containers. Machine cleaning with a laboratory washing machine is more gentle to labware than cleaning in an immersion bath. The labware is only exposed to the cleaning solution for the relatively short flushing periods when sprayed by the jet or injector nozzles. Due to their low weight we recommend securing them with washing nets to avoid tumbling them in the water jet. Labware is protected against scratching when the wire baskets in the washing machine are plastic coated. Polycarbonate (PC) equipment should not be cleaned with alkaline cleaning agents (> pH 7).

Cleaning in trace analysis

To avoid contamination with cations and anions, you should leave plastics laboratory equipment with a 1N HCl or HNO₃ for a maximum of 6 hours at room temperature, and rinse it afterwards with purified distilled water. If trace analysis is conducted in the range of ng/g (ppb) or µg/g (ppt), containers made of PFA are particularly suitable, because they have a smooth surface, are easy to clean without memory effects and interaction with the container material.

Sterilization of laboratory equipment made of plastics

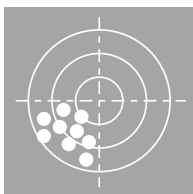
Autoclaving (steam sterilization) is defined as the destruction or irreversible inactivation of all reproducible microorganisms under exposure to „saturated steam at 120 °C Minimum.“ (DIN 58946-1, 1987). The following minimum exposure time (destruction time + safety span) is specified by DIN EN 285: Sterilizing temperature 121 °C – exposure time t_e = 20 minutes. For correct sterilization procedure, including biological security (DIN EN 285), please contact your sterilization officer. Prior to sterilization you have to ensure that there are no residual contaminations on the equipment. Otherwise, residue will bake on during sterilization. This could lead to the plastic's destruction during the autoclaving process (121 °C), or microorganisms may not be effectively destroyed if they are protected by the residue. For autoclaving, please note that containers with a screw-on lid or stopper have to be opened to ensure pressure equalization. Autoclaving of closed containers leads to deformation or destruction of the container. To prevent pressure build-up, containers or vessels must always be open. Not all plastics are resistant to steam sterilization. Polycarbonate, e.g., will lose its strength. Polycarbonate centrifuge tubes cannot be steam sterilized.

Precision

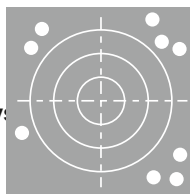
What do „tolerance, accuracy, coefficient of variation and precision“ mean in volumetric measuring?

An illustration of precision and accuracy

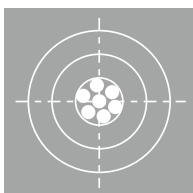
The dart board simulates the volume range around the centered specified value, the white dots simulate the different measured values of a specified volume.



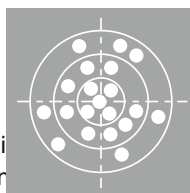
Poor accuracy Although all hits are close together, the center (true volume) is still missed.
Good reproducibility: All hits are close together.
Result: Improperly controlled production, with systematic variation. Instruments exceeding the permissible limit should be removed from service.



Poor accuracy Hits far off center.
Poor reproducibility: Hits widely scattered.
Result: These volumetric instruments are of inferior quality.



Good accuracy All hits are near the center, i.e., the specified value.
Good reproducibility: All hits are close together.
Result: The volumetric instruments have minute systematic errors, narrow scatter; the permissible limit is not exhausted. These instruments should remain in service.



Good accuracy On average, hits are evenly distributed around center
Poor reproducibility: No gross errors, but hits widely scattered.
Result: All deviations are „equally probable“. Instruments exceeding the permissible limit should be removed from service.

The precision of glass volumetric instruments is commonly defined by „Tolerance Limits“ whereas for liquid handling instruments the statistical terms „Accuracy [%]“ and „Coefficient of Variation [%]“ have been established.

Tolerance

$$\text{Tol.} \geq |V_{\text{measured}} - V_{\text{spec.}}|$$

The term „tolerance“ (tol.) in the corresponding standards defines the maximum permissible deviation from the specified value.

Accuracy

$$A[\%] = \frac{\bar{V} - V_{\text{spec.}}}{V_{\text{spec.}}} \cdot 100$$

Accuracy (A) indicates the closeness of measured mean volume to the specified value, i.e., systematic measurement variation. Accuracy is defined as the difference between the measured mean volume \bar{V} and the specified value ($V_{\text{spec.}}$), related to the specified value in percent.

Coefficient of Variation

$$CV[\%] = \frac{s \cdot 100}{\bar{V}}$$

Coefficient of variation (CV) indicates the closeness of values of repeated measurements, i.e., random measurement variation. Coefficient of variation is defined as standard deviation in percent, related to the mean volume.

Partial volumes

$$A_{\text{part.}}[\%] = \frac{V_{\text{nominal}}}{V_{\text{part.}}} \cdot A_{\text{nominal}}\%$$

(analog $CV_{\text{part.}}\%$)

Generally A and CV are related to the nominal volume (V_{nominal}). These values are in % and have to be converted for partial volumes ($V_{\text{part.}}$). In contrast, there is no conversion for partial volumes, if A and CV are stated in the same units (e.g., ml).

Tolerance of A and CV

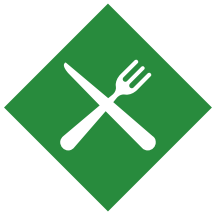
$$\text{Tol.} \geq \frac{|A\%| + 2CV\%}{100\%} \cdot V_{\text{nominal}}$$

A good estimate for the tolerance at nominal volume (V_{nominal}) can be calculated using the values for accuracy and coefficient of variation.

Precision (reproducibility)

It describes the closeness in volume units between the different values in a set of measurements.

Suitability for foodstuffs



Marked PP products are suitable for contact with all foodstuff categories in so far as a contact period of 24 hours and a contact temperature of 40 °C are not exceeded. Marked SAN products are suitable for contact with all aqueous, alcoholic and fatty foods, in so far as a contact period of 24 hours and a contact temperature of 40 °C are not exceeded.

Unfortunately we are unable to provide any information with regard to contact period in excess of 24 hours and contact temperatures in excess of 40 °C, as these did not constitute part of the testing.

Consequently, under the specified testing conditions, the marked products are in accordance with the requirements of Commission Directive 2002/72/EC (up to and including amending Directive 2007/19/EC) and Regulation (EC) No. 1935/2004. The marked products are also in accordance with the requirements of the Commodities Regulation (Bedarfsgegenstände-VO as of: 20.12.2006) and the German Food and Feed Code (Lebensmittel- und Futtermittelgesetzbuches, LFGB).

All source materials used in the manufacturing of the products are listed in the Commodities Regulation (Bedarfsgegenstände-VO as of: 20.12.2006), or respectively, Commission Directive 2002/72/EC (up to and including amending Directive 2007/19/EC), in accordance with the present attestation. Therefore, they represent permissible source materials in accordance with food law and may be used in the production of food commodities in accordance with the specified restrictions concerning migration threshold values and permissible residual content in the end product.

In addition to the testing of the adherence to the threshold values for the global migration (or respectively, the specific migration thresholds), a sensory testing for possible olfactory and flavour-related impairment of test foods was also implemented. All testing and analysis was performed by an independent, accredited institute.

Products in sterile packaging

The use of sterile, individually packaged VITLAB plastic labware, for example volumetric instruments or measuring scoops, means that time-consuming cleaning and autoclaving processes are no longer necessary. As a result you save time and money.

Sterile, individually packaged VITLAB plastic labware reduces the risk of contamination. This makes your processes more secure.

Sterility requirements exist in many industrial sectors, such as the medical, pharmaceuticals or microelectronics sectors. A sterile product must not contain any viable microorganisms that are capable of reproduction. The manufacturing of a product, including its packaging, under the very best hygienic conditions does not automatically result in a sterile condition. The product must be sterilised after its production and packaging.

The packaging is necessary in order to ensure that the sterile condition achieved after the radiation sterilisation remains for a long period. The irradiation inactivates the microorganisms. The inactivation occurs according to an exponential law. Depending on the product requirements, different end conditions can be achieved with regard to the microbial exposure after the irradiation.

Radiation sterilisation has established itself since several decades as an effective method of killing bacteria and germs. As the inactivation of the microorganisms by physical or chemical means occurs according to exponential laws, this absolute condition is not achieved. It remains possible that a microorganism survives. The residual risk is defined as 1/10⁶ the EN 556 for medical products that have been sterilised in their end packaging. This means that of one million parts of a product that have been sterilised in the end packaging, a maximum of one may be found that contains a microorganism capable of reproduction.

At the request of the customer, we also offer a bioburden analysis or certificate of sterility, or respectively pyrogen test, in addition to individual packaging.

All testing and analysis was performed by an independent, accredited institute.

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General Terms and Conditions of VITLAB GmbH

1 General

- 1.1 (Conflicting business conditions, written form, additional agreements and contract language) These General Terms and Conditions shall apply to all contracts, including all future contracts with the Customer. Other conditions shall not become a part of the contract even if we do not expressly object to such conditions. The Customer may only claim validity of additional agreements before or upon the conclusion of the contract only if they provide immediate written confirmation. Renunciation of the written form is only possible in writing. The language of the contract shall be German or English.
- 1.2 (Offers, right to make changes) Our offers are subject to confirmation. We reserve the right to make technical improvements to our products.
- 1.3 (Recording of data) We may store and process relevant contract data in our EDP systems.
- 1.4 (Setting off and retention) The setting off or the retention by the Customer is not permitted except in cases of undisputed or indefeasible counter claims.
- 1.5 (Rush orders/small orders) Orders with a value of the goods of less than 100 euros are subject to a low quantity surcharge of 20 euros. Delivery is normally in packing units according to the valid price list. For deliveries within five working days or for order values up to 500 euros, we reserve the right to ship and invoice immediately without separate order confirmation.
- 1.6 (Place of jurisdiction) The place of jurisdiction shall be the court responsible for our domicile in Aschaffenburg, Germany. We are also entitled to call upon the court responsible for our customer's domicile. Furthermore, we as Plaintiffs have the right to call the arbitral tribunal at the Chamber of Industry and Commerce in Frankfurt am Main. In this case, the arbitral tribunal conclusively decides the legal dispute in accordance with the ICC Rules of Arbitration excluding the due legal process. The preamble of the legal summary proceeding for order to pay debts from us does not denote the exertion of our voting right. It is in no way admissible.
- 1.7 German law is applicable, to the exclusion of the 'UN Convention on Contracts for the International Sale of Goods', CISG.

2 Delivery

- 2.1 Place of performance shall be our factory in Grossostheim, Germany. The risk shall be transferred to the Customer when the delivery leaves the ramp in our factory. This shall apply also to partial deliveries and where we have undertaken additional services such as freight forwarding; costs of transporting, packing or insurance; exportation; and installation. This also applies in the case of delivery to a consignment warehouse.
- 2.2 Where we have accepted Orders on Call, Standing or Blanket Orders, the Customer must call up the entire order quantity within 6 months.
- 2.3 If there be any delay in the Customer's acceptance of a shipment, we may, at our own discretion, have the products stored at the Customer's expense or, after providing a warning and setting a deadline, sell the products for account of the customer.

3 Delivery period, Delay

- 3.1 Indicated delivery periods are ex works. Delivery deadline shall commence upon the Customer's receipt of our order confirmation; however, only after settlement of the technical questions that are still open at the conclusion of the contract and after we have received from the customer all documents, such as diagrams, permits or releases required from the Customer and definitely not before any advance payments that have been agreed upon. The delivery deadline is considered to have been observed if the readiness for shipment has been declared prior to the expiration of this period. Correct and punctual delivery remains a requirement.
- 3.2 Force Majeure, strikes, lockouts, operating breakdowns, shortages of raw materials or means of production for which we are not responsible, including delayed deliveries or failure to deliver by upstream suppliers, shall extend the delivery deadline accordingly and shall release us from our obligation to deliver if delivery becomes impossible as a result. We are considered not to be responsible for the aforementioned circumstances, even where they occur during an existing delay. The same applies in the case of additional or amended services requested by the customer.
- 3.3 Our default in delivery shall not exist unless the Customer has provided us with a warning and an indicated reasonable additional period of time has lapsed.
- 3.4 In the case of delay damages, we shall limit our liability for damage compensation to 10% of the value of our delayed delivery/service. The limitation does not apply in the case of wilful intent, gross negligence and/or damage to life, body or health. The Customer shall be obligated to promptly notify us in writing of any consequences of delay.

4 Prices, Terms of Payment

- 4.1 Prices quoted shall be ex works and do not include VAT, if applicable. Charges for packaging, freight and insurance shall be at the Customer's expense. The prices are understood to be exclusive of costs for the return and recycling/disposal of old equipment.
- 4.2 Invoices shall be paid in full, without deductions, and must be credited to our account in EURO (€) immediately or by the due date indicated on the invoice. Receipt of payment is applicable. We shall accept bills of exchange or checks only with a view to performance and at the Customer's expense.
- 4.3 In the case of customers, with whom we are working for the first time or with whom we do not regularly work, after delays in payment or in the case of reasonable doubt of the creditworthiness of the client, we retain the right to make any individual shipment dependent on payment in advance or a security deposit to the value of the invoice amount.
- 4.4 If the period between conclusion of the contract and the agreed delivery is longer than four months, we reserve the right to demand an extra charge, which corresponds to our cost increase until delivery, at our own discretion. For deliveries on call our then valid price shall apply.
- 4.5 In the case of an agreed return of faultless products, the customer will be charged a checking and processing fee to the value of 15% of the invoice amount (10 euros minimum).
- 4.6 If the Customer is in default of payment, then all of our debt claims against him shall be due immediately and we shall not be obligated to make any further deliveries based on current delivery contracts.
- 4.7 If default of payment occurs, we shall charge, notwithstanding further damage compensation claims, default interest to the amount legally allowed.
- 4.8 We may offset amounts payable to the Customer, such as a credit notes, against our claims against the Customer, if necessary.

5 Retention of Title and Assignment of Future Claims

- 5.1 Goods delivered shall remain our property until the complete and unlimited payment of all of our debt claims against the Customer. If we still have further claims against the customer, we reserve our property rights until the payment of this.
- 5.2 The Customer may neither use conditional goods nor merge nor combine them with other objects, to which a third party may have rights. If, however, conditional goods become a component of a new object, then we shall be a direct proportional co-owner of this object even if it constitutes a new legal entity. Our proportion of co-ownership shall be based on the relation of the invoice value of the conditional goods to the value of the new object at the time of the connection.
- 5.3 The Customer may resell the conditional goods in his normal course of business as long as his claims from the resale have not been assigned, pledged or otherwise encumbered.
- 5.4 The Customer shall assign to us in advance as collateral any claims against his customers from the resale of the conditional goods (see clause 5.3) and/or newly formed objects (see clause 5.2) to the value of our invoice for the conditional goods. If the Customer is not in default of payment for the conditional goods, he may collect the assigned claims in his normal course of business. However, he may only use the proportional proceeds for the payment to us for the conditional goods.
- 5.5 Upon the customer's request, we shall release collateral at our discretion, if and to the degree that the nominal value of the collateral exceeds 120 % of the nominal value of our open debt claims against the Customer.
- 5.6 The Customer is required to immediately inform us of any attachments, confiscation or any other right to disposal of a third party with regard to the conditional goods or the goods co-owned by us.

- 5.7 In the case of failure to pay in exchanges or checks, or if debit requests or debit authorizations are not carried out or are retroactively cancelled, or if the Customer or the end user becomes insolvent or suspends payments, the Customer shall lose all rights as per clause 5.3. The Customer must immediately notify a subsequent purchaser of our extended retention of property rights. He may only use the proportional proceeds, which are based on the assignment, for the payment of the goods delivered.

- 5.8 If default of payment occurs or in those cases covered in clause 5.7, we shall be authorized to withdraw from the contract, and/or to demand the return of any conditional goods, even without withdrawal, in the possession of the Customer and/or to collect the assigned debt claims directly. In order to determine our rights, we shall have the right to have the Customer's documents and books concerning our reserved right examined by a person who is subject to the professional duty of confidentiality.

6 Defects and claims for damages

- 6.1 We shall be liable for insuring that our products, including any agreed installation, are free of defects at the time of the transfer of risk (clause 2.1). The required composition, shelf life and use of our products are based solely on the written agreed specification, product description and/or operating instructions. Any information beyond this and in particular in preliminary discussions, advertisement and/or reference to industrial standards shall only become a part of the contract if they are expressly referenced in writing.
- 6.2 If the Customer requires the delivered goods for purposes other than those agreed, he must check before use if the products are specially suitable for such purposes – including all aspects pertaining to product safety – and Customer is required to ensure that products comply with all relevant technical, legal and official regulations and requirements. We shall not be responsible for the fulfillment of any application not expressly confirmed by us in writing. We are not liable for material or design guidelines of the Customer concerning the suitability or permissibility of the desired materials or designs and thus have no particular testing obligation. The observation of safety-related and occupational health regulations depends on the place and conditions of the use, of which we have no knowledge. Measures of the observation of these regulations are, therefore, the responsibility of the user.
- 6.3 We shall not be liable for the consequences of improper handling, use, servicing or operation of the products or the consequences of normal wear and tear of wearing parts such as pistons, seals, valves and the breakage of glass, plastic or ceramic parts, for the consequences of chemical, electrochemical or electrical influences or the failure to follow the instructions in the operating instructions.
- 6.4 In the case of justified deficiency claims we shall only initially be required to provide subsequent performance (i.e. free replacement or repair at our sole discretion). Any additional warranty claims shall only exist due to rejection, impossibility or failure of said subsequent performance. Additional expenses, resulting from the fact that the goods have been relocated from the initial place of delivery, shall be borne by the Customer.
- 6.5 The Customer shall be obliged to promptly and carefully check incoming products – also for product safety – and to notify us of any apparent deficiencies in writing, any hidden defects as soon as they are found. The Customer must notify the carrier immediately of any transport damage. Non-observation of the obligation to check and give notice of defects will void any and all warranty claims for those deficiencies.
- 6.6 Our liability for slight negligence is limited to claims owing to injury to life, the body or the health, to claims from product liability as well as claims from the culpable breach of essential contractual duties, through which the contract is endangered. Incidentally, our liability for slightly negligent breach of essential contractual duties is limited to the typically incurring damages which we could have foreseen when the contract was concluded.
- 6.7 If the customer uses the delivered goods with materials that are harmful to the environment, poisonous, radioactive or dangerous in any other way, he shall be obliged to clean them prior to any return shipment. We can put any necessary costs of decontamination/cleaning and disposal in the client's invoice.

7 Limitation of actions

- 7.1 Claims for defects against us shall be limited to one year from delivery of the goods to the customer. The same shall apply to claims for damages no matter for what legal grounds. The period of limitations according to § 438, paragraph 1, no. 1 and 2 of the German Civil Code, and § 479, paragraph 1 and 634a, paragraph 1, no. 2 remain unaffected. The restriction of the statute of limitations shall not apply to claims owing to malicious non-disclosure of a defect, for claims according to product liability and for damages from injury to life, the body or the health and for other damages, which are due to wilful intent or gross negligence.

8 Software use

- 8.1 Insofar as software is contained in the delivery, the Purchaser will be granted the non-exclusive right to use the software delivered including its paperwork. It shall also be available for use on the specific delivery item. Use of the software on more than one system is prohibited.
- 8.2 The Purchaser may only copy, transfer or translate the software in a legally acceptable scope (§§ 69 a and b of Copyright Law (UrHG)) or convert from the object code into the source code. The Purchaser is obliged to not remove manufacturer's instructions, especially copyright entries, or to change them without prior permission from the Supplier.
- 8.3 All remaining rights to the software and the documentation thereof, including copies, remain with the Supplier and/or Software Supplier. The allocation of sublicenses is not permissible.

9 Installation

- 9.1 Installation costs can be invoiced monthly. Fixed installation prices shall only apply to the work, which has been agreed upon. In other cases, our price list for installation and service costs shall apply.
- 9.2 The Customer shall be responsible for providing the following if required at his own expense: lighting, motive power: compressed air, water, electrical power for welding, heating including any required connections, electrical installations for the connection of the products delivered by us, the required devices (e.g., hoist equipment), a room, which can be closed, for storing material, tools and clothing during the installation.

10 Spare Parts, Maintenance/Repair and Calibration

- 10.1 For spare parts, maintenance, repair and calibration services the valid repair and replacement price list shall apply.
- 10.2 If we have an obligation to maintain/deliver spare parts, then this shall be limited to a period of five years from the date of delivery of the original product. If the spare parts are not manufactured by us or are no longer available on the market, e.g. electrical components, or if the raw materials required for their production are no longer available, then our obligation to supply spare parts shall lapse.
- 10.3 For calibration and servicing, normally disposables from our production lines shall be used.
- 10.4 Any servicing and/or calibration service may only be performed after the Customer has declared the absence of health hazards with regard to the devices sent.
- 10.5 For service values of up to 50 euros, we reserve the right to service / repair without providing a separate cost estimate.

11 Legal reservation, industrial proprietary rights, secrecy

- 11.1 We reserve ownership in any of the moulds, tools or other appliances, samples, diagrams, commercial or technical documents produced or provided by us as well as all copyrights, proprietary and intellectual property rights in any such item. This applies also if the Customer has wholly or partly borne the cost of this. The use of any such item by the Customer is subject to our prior written approval. The Customer is neither entitled to manufacture the subjects of this agreement nor to have them manufactured on his behalf, without our approval in writing.
- 11.2 If we deliver goods according to designs or other requirements specified by the customer (models, samples etc.), he is liable by default for ensuring that through the production and delivery of these products no industrial property rights or other rights of third parties are not infringed. He shall be obligated by default to provide compensation for all damages resulting from such legal infringements.
- 11.3 All information acquired through the business relationship with us which is not deemed to be public knowledge shall be deemed proprietary and may not be disclosed by the customer to any third party. Status as of: March 2009

