La-Pha-Pack®

Your Partner for reliable closure technique in laboratories

La-Pha-Pack GmbH • Am Parir 20 • 52379 Langerwehe • Germany • www.la-pha-pack.com
Tel.: +49 (0) 24 23 / 94 31-0 • Fax: +49 (0) 24 23 / 94 31-33 • E-Mail: service@la-pha-pack.com

NEW VIALS

HPLC and GC Certified
Vial KITs

Total Microliter Vials
available as Short Thread ND9,
Snap Ring/Crimp ND11 Vials

10ml + 20ml Precision Thread
Vials with Magnetic Screw Seals
(8mm centre hole/closed top)

Micro Vials with integrated
Micro-Insert "Base Bonded"

NEW SEALS

TPF Seal
Total Phthalate Free Seal
11mm Crimp Cap with assembled Aluminum Liner

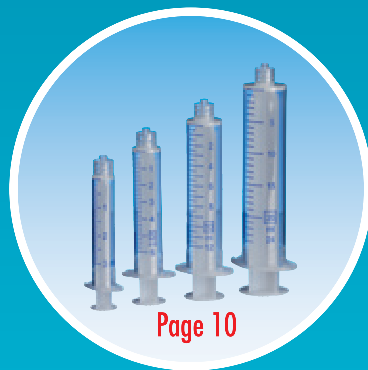
"Pink Caps"
Autosampler Caps available as 8mm,
9mm Screw Thread Caps and
11mm Snap Ring Caps

Short Thread Seals ND9 with
Pre-cut Septum for HPLC

Magnetic Short Thread Cap ND9
for CTC GC PAL + Thermo Scientific
TriPlus Autosampler

NEW LA-PHA-PACK

Stainless Steel Cleanroom
Crimping Tools
available sizes 11mm, 13mm, 20mm



HPLC Certified Plastic Disposable Syringes with
Luer Lock and Luer Slip

PP Storage Boxes
available for 1.5ml, 4 ml, 5ml, 10 ml,
20ml, 30ml, 40ml Vials

Quick-Reference-Charts

Dear Customer!

The new edition of our product catalogue was further optimized, in order to facilitate your daily work when searching the right consumables. We would like to draw your attention to the photographic illustration of all glass and closure products as well as to the simplification of the identification of suitable Headspace-Vials and closures for the different instrument manufacturers in Chapter 10. On the following pages you will find some recommendations, how to use catalogue and other resources best to supply your customers with La-Pha-Pack products.

We have maintained the approved structure of our previous catalogue. Within the product groups new articles have been complemented and marked accordingly. The structural composition of our catalogue is explained on page 5 – handling of the catalogue.

Please note that the catalogue only contains our standard products which, of course, are stock items. Far more products can be obtained from us, so that it is always worthwhile to contact us, in case you don't find the product of your choice in the catalogue.

We hope that the improved catalogue will be a useful guide for you finding the right La-Pha-Pack product for your demand. We would like to point out that information on any new products that will be launched after the catalogue's print date, can be taken from our website at **www.la-pha-pack.com**, icon "Innovations".

We would like to point out explicitly that our policy prohibits supplying end-users. However, everybody is welcome to ask for technical advice or samples. Enquiries or orders from consumers have to be placed at local dealers or can be forwarded by us to a distributor of ours.

In case of any further questions or sample requests you are always welcome to contact us.

Your La-Pha-Pack Team

How to find the right product

a) You know the **manufacturer/model of your customer´s instrument/autosampler**

- Go to the **Autosampler Compatibility Chart** on pages 76 to 85 of the catalogue and look for suitable vials. The chapter and page indications will lead you to the appropriate vials. Suitable Micro-Inserts, Seals, Septa and Caps for these vials will follow in the subsequent chapters. In case you don't find the model in the Autosampler Compatibility Chart, please contact us. In our library we have even more information on vial suitability for the various instruments on the market.
- In addition to our general Autosampler Compatibility Chart you find on pages 70 to 75 our updated **Quick-Reference-Charts** with suitable consumables for the following instrument companies: Agilent – CTC – Dionex – PerkinElmer – Shimadzu – Varian – VWR (Merck®)/Hitachi – Waters® – Thermo Scientific. In our Quick-Reference-Charts you find recommendations for typically used vials and closures which are packed in user-friendly 2in1 KITs (100 vials and 100 seals in one KIT). The chapter indications lead you to the corresponding chapters, where you find further consumables.
- As in Headspace the correct identification of vial and closure types is extremely difficult due to the various technical designs, a special **Headspace Compatibility Chart** has been created for this application in Chapter 10 on pages 38 and 39. While you can take the suitable vial type for the different instrument manufacturers from the upper part of the chart, you'll find the appropriate recommended closures in the middle section. The various cap types that have to be considered are colour-coded. At the bottom of the page a break-down of the indicated part numbers according to the colour-coded cap types and the different septa materials is listed. For better illustration of the septa type you'll find at the left side of page 38 (20mm septa for crimp caps) resp. at the right side of page 39 (17.5mm septa for magnetic Precision Thread Caps) photographs and article descriptions of them.

b) You have **a sample from your customer** of the vial requested

- Go to the **actual size drawings** at the end of the catalogue and look for identical vials. The chapter indication will lead you to the appropriate vials. Suitable Micro-Inserts, Seals, Septa and Caps for these vials will follow in the subsequent chapters!
- **Send the sample to us** for evaluation and we will identify the correct La-Pha-Pack product. In return we will provide you free of charge with some samples of the La-Pha-Pack product for your customer to evaluate.

c) You know **the diameter** of your customer's septa, vial, seal, etc.

- The first two digits of our article numbers are indications of the diameter. Go to the **Numerical Index** on page 68 and look for articles starting with the digits of your diameter. The 3rd and 4th digits are indications of the article group, e.g. 09 for vials, 02 for septa, etc. (List of our article groups can be taken from the Annex of the Numerical Index).

d) You know a **key description** of your customer's requested product

- Go to the **Alphabetical Index** on pages 66 to 67 and look, if the key description is included there.

Handling of the catalogue

a) Each chapter includes all products that belong together, i.e. Vials (e.g. all types of Short Thread Vials or Micro-Vials), suitable Micro-Inserts for these Vials, appropriate Seals for these Vials (e.g. all types of Short Thread Seals) and – if available – individual Septa/Caps.

b) The catalogue starts with the vials that have the smallest nominal diameter, continuing with increasing nominal diameter. Other accessories like Vial Racks, Syringe Filters, GC-Septa and crimpers can be found more towards the end of the catalogue.

c) All kind of listings (Product Names, Alphabetical Index, Numerical Index, Annex of Numerical Index, Quick-Reference-Charts, Autosampler Compatibilities, Actual Size Drawings of all standard glass articles, Drawings of caps etc.) can be found at the very end of the catalogue. The only exception is the Headspace Compatibility Chart which you can take from Chapter 10 on pages 38 and 39.

d) A short company profile is included in the preface and can be taken from our website under **www.la-pha-pack.com** (subchapter "Company"). Further copies of the catalogue can be requested at any time with our Customer Service department in German and/or English language. A French edition is available as a PDF datafile.

Article Number System

Our 8 digital article number comprises the following indications:

8mm Polypropylene Screw Cap black, 5.5mm centre hole

08 08 0027

Article Group

Diameter in mm (08=Plastic Caps, Sequential Number

no liner)

Contacts

Customer Service
(for quotations, sample requests, technical advice, etc.):
Telephone: +49 (0) 24 23 / 94 31-0 (Reception)
Telefax: +49 (0) 24 23 / 94 31-34
E-Mail: service.led.delan@thermofisher.com

Order Processing
(for orders, delivery times of open orders, etc.):
Telephone: +49 (0) 24 23 / 94 31-11
+49 (0) 24 23 / 94 31-17
+49 (0) 24 23 / 94 31-316
Telefax: +49 (0) 24 23 / 94 31-33
E-Mail: order.led.delan@thermofisher.com

Accounts department
(for payments, reminders, etc.):
Telephone: +49 (0) 24 23 / 94 31-14
+49 (0) 24 23 / 94 31-15
+49 (0) 24 23 / 94 31-42
Telefax: +49 (0) 24 23 / 94 31-44
E-Mail: finance.led.delan@thermofisher.com

(If you know the name of your direct contact person, you can reach him/her under:
"firstname"."surname"@thermofisher.com)

Internet: www.la-pha-pack.com

General terms and conditions

All orders are based on our general terms and conditions which can be sent to you upon request or can be taken from our website under **www.la-pha-pack.com**, icon "Imprint". At this point we would like to draw your attention to the following:

Minimum delivery quantities:

Vials/Seals/Septa:	**1,000 pieces**
Filters/Syringes:	**100 pieces**
GC Injection Port Septa:	**25 pieces**
Capillary Connectors:	**10 pieces** (for Connectors for 2 columns)
	1 piece (for Connectors for 3 columns)
Crimpers/Decappers:	**1 piece**
2in1 KITs:	**10 pieces**
Vial Racks/Storage Boxes:	**1 piece**

The minimum order quantities are independent from the packaging units indicated underneath all products.

Minimum order value: 250.00 EURO

Our goods are excluded from exchange, legal regulations remain unaffected hereof.

General organisational matters

All standard items are stock items that usually can be despatched within 24 hours after receipt of order. All products are kept absolutely neutral, i.e. no La-Pha-Pack article numbers are printed or labelled on the packaging of the products.

As we only supply wholesalers or dealers who promote our products as their own brands, we strictly keep up a policy of neutral packaging. Only batch numbers for reasons of traceability in cases of complaint are attached to the product. For the vials additionally a small schematic drawing of the product is labelled on the front side of the PP-Box to enable identification of the content. Customer specific labelling can be carried out against a small surcharge.

We would like to satisfy the consumers with our products. Therefore everybody is welcome to ask for cost-free samples for testing purposes to evaluate the most appropriate product for his instrument/application with regard to technical suitability, convenience in handling and price-performance ratio. This way you have the opportunity to see and decide before placing an order which product suits best your individual needs.

Others

There are no prices included in our catalogue nor separate price lists available. Prices are calculated individually, depending on order quantities. We are prepared to submit special offers for annual call-off orders, as we can take the total delivery quantity and number of call-off deliveries into consideration.

In case of orders for special products that are not included in our standard delivery programme we kindly ask you to consider that these orders can only be carried out after release of samples, drawings or specifications.

Furthermore we would like to point out that ordered quantities for special articles on customers' request will be adhered to in principle, however, deliveries can either be up to 10 per cent higher or lower than the original quantity.

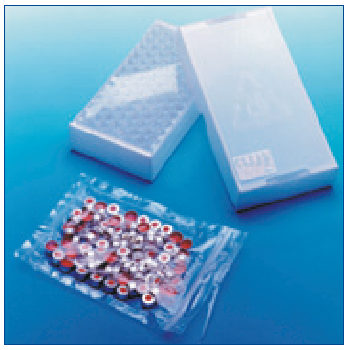
Company Profile

La-Pha-Pack offer a complete range of consumables for GC, HPLC and Headspace analysis. This comprises vials, septa, seals, filters, crimpers, and other accessories. Besides all standard items for almost all common instruments in the chromatography market, La-Pha-Pack also carry out special production runs of vials, septa and combination seals according to customer's specifications.

The products are sold worldwide through a network of distributors. The products are of high quality and have been thoroughly tested before their launch. As a DIN EN ISO 9001:2008 certified company we devoted ourselves to complete customer satisfaction which we define in our business policy as follows:

- to supply continuously high quality products
- to offer cost effectiveness
- to grant consequent adherence to delivery dates.
- to develop innovative and market-orientated products
- to support promptly and efficiently our customers in all respects they may require

Special Product Features



La-Pha-Pack are the only supplier of chromatography vials from class 10,000 cleanroom. With the CleanPack label on the box we guarantee this high hygienic standard. Additionally, tamper-proof evidence is given by the shrink-wrapping of the bottom part of the PP-box, whereas its cover enables recloseability at any time during consumption, order to avoid any later contamination of the vials during usage.

The zip-lock PE-bags with the tear-off foil strip for our seals follow the same principles of the vial packaging with regard to tamper-proof evidence and recloseability. An additional product safety is given through the automatic counting and packaging process, as quantity obedience can be guaranteed and any contamination through human touch – as it would happen when weighing the parts by hand – is excluded. Printed batch numbers on each zip-lock bag guarantee traceability.

Production

Vials, septa and seals are manufactured with highly-sophisticated production technology out of high quality raw materials under strict standards of cleanliness.

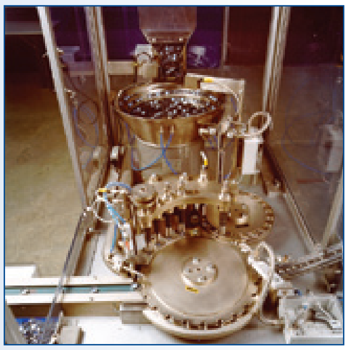
The vials are almost all made out of 1st hydrolytic class glass. Opto-electronic devices on the glass machines measure within parts of a second, whether the manufactured vial meets the specifications. In case of mismatch, the vial is blown out into the trash. Besides this 100 per cent control, manual in-process controls and a final inspection according to DIN/ISO standards assure further product safety. The packaging of the vials in a cleanroom class 10,000 provides a new standard of cleanliness for chromatography which ensures a correct and reliable analysis.

Rubber Slitting Machine

- PTFE laminated liners made of Butyl, Natural Rubber or Silicone are punched in high performance automatic punching presses out of endless roll material.
- Roll is cut to the size of the punching die on a rubber slitting machine.
- During the cutting process an inspection with regard to visual defects as well as an automatic control of the material thickness is carried out.
- The customized roll is fitted onto stainless steel coils which lead the material into the punching presses.

High Performance Punching Presses

- Contamination-free septa production due to precision dies working without any punching agents or lubricants and complete coverage of the punching area.
- Sensor system for detecting and isolating defects in the roll.
- Closed tunnel system ensures maximum hygiene for the ready punched septa.
- Besides high productivity and excellent raw material usage the high performance automatic punching presses offer outstanding dimensional stability as well as a continuous high quality.



Assembling Automates

- Fully automatic assembling of liners and caps.
- Various colour sensors check the correct side-orientation of the liner at various stations of the assembling process, to guarantee that the PTFE lamination turns towards the sample.
- Automatic assembly prevents any contamination of the closure by skin fat or sweat, as it could happen in case of manual assembly.
- Special productions of liners and closures according to customer specifications can be carried out, as well as special packaging (e.g. other packaging quantity, further printed labels etc.).

Lining Automates

- The lining method is an efficient and modern production technology for closures, where a certain number of closures are put with the correct side-orientation below the punching tool of an automatic high-performance punching tool
- The liner is automatically punched into the cap, so that a further separate assembling process becomes redundant.
- Time saving by omission of the second working step "Assembling" and the higher output of a high-performance punching tool compared to a standard assembling machine make this procedure especially interesting for products with a high quantity.

Video Inspection System

- Fully automatic inspection unit to control the assembled closures.
- 100% control of caps and liners through an highly developed high-speed-colour-camera-system, defective parts are automatically separated.
- More than 1.200 closures per minute are controlled by the inspection unit according to the given article specification.
- All components of the inspection unit are made of stainless steel and guarantee a contamination-free process run.

Production

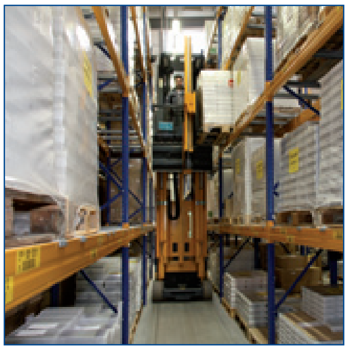
Packaging Automates

- Packaging process is done according internal defined room conditions, this means there are no wooden pallets or cardboards allowed, all employees wear specific clothing, nearly all parts of machines are under glass cover etc.
- Closures are automatically counted and packed. Counting process is done by an opto-electronic counting unit, which guarantees a 100% quantity accuracy.
- Furthermore, in process controls are done by the employees as well as quality people for further product safety. All controls are documented on the assembly forms, as well as all important dates of the production process.

Quality

- DIN EN ISO 9001:2008 certified company.
- High quality raw materials for production of all products.
- Very strict requirements on the hygienic conditions under which the products are being manufactured.
- Opto-electronic quality controls during manufacturing process, in-process controls and final QC inspections.
- For quality control of goods received and for final QC inspection of all manufactured products state-of-the-art test control units, like profile projector and a measuring device for penetration forces for septa, are being used.
- Measuring device to determine penetration forces for septa.
- All quality controls are documented and reports can be requested in German or English.
- Batch numbers guarantee a 100 per cent traceability.

Service



- Despatch within 24 hours.
- Upon request customer specific labeling or direct deliveries.
- Cost-free samples for testing purposes.
- Annual call-off orders can be stocked for our customers.
- Pre-sealed and pre-installed combinations available.
- Barcode labelling.
- Repair service for crimping tools.
- Technical advice.
- Product trainings locally or in our company.
- Support on the marketing side.

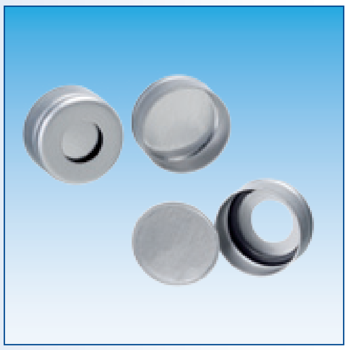
Innovation

La-Pha-Pack try to develop products that meet today's requirements of the chromatography market with regard to instrument / application suitability, convenience and price-performance ratio. Often also common development work is carried out in cooperation with instrument manufacturers. The most important product launches of this catalogue are shown below along with some short product profiles.

HPLC and GC Certified Vial KITs

Certifications are getting more and more important, in order to make processes more reproducible and avoid possible sources of errors from the beginning. For La-Pha-Pack highest quality, consistency and quality control have always been very important and have been documented by HPLC and GC certified vials and closures.

- Each batch of HPLC and GC-certified KITs is tested on 15 critical parameters. In a realistic method, an HPLC/UV and GC/FID test of vials/closure combination for blanks and contaminations will be carried out.
- The batch-specific test certificate with the HPLC and GC-Chromatograms can be handed out upon request.
- The HPLC and GC certified KITs are delivered completely shrinkwrapped for reasons of originality, purity and transport safety. This means an additional safety for the end user.
- Available as 9mm Short Thread Vial in clear and amber with suitable closure combination.
- Upon request further HPLC and GC Certified Vial KITs will be available.



Total Phthalate Free Seal (TPF Seal) with assembled aluminum liner

- La-Pha-Pack offer the first 11mm Crimp Cap with assembled aluminum liner.
- Septa material free of any elastomers and halogens; therefore no contamination of the sample by plasticizers, Silicone or Butyl rubbers and PTFE/FEP/TEF materials.
- Recommended for GC/MS and LC/MS applications.
- The O-ring, which is assembled above the aluminum liner, achieves an excellent tightness and inertness of the complete combination seal.
- Suitable for storing of standards or reactive substances which would normally corrode the septum material.
- Packed by 100 pieces in a packaging free of plasticizers (glass container).

Application areas:

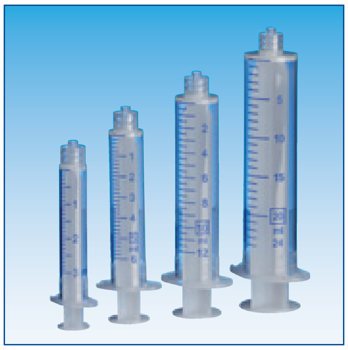
- Analytic of elastomers und plastomers
- Analytic of polymerisation catalysts
- Phthalate analysis
- Analytic of silicones und silicates
- Analytic of fluorinated, halogenated organic compounds VOC (volatile organic compounds) analysis

Total Microliter Vials

- Total Microliter Vials provide a precise tapered internal design for a maximum recovery without the need of a separate micro-insert.
- Ensures maximum recovery for GC and HPLC/UHPLC with a residual volume <1µl.
- Ultra flexible volume vial from 1.6ml (maximum possible volume) to 25µl (minimum recommended working volume for reproducible results, independent of the type of needle/syringe used).
- Residual volume <1µl for valuable samples.
- Usable as a concentration vial because the solid glass bottom offers excellent heat transfer and vial-stability.
- Universal autosampler compatibility as a result of the flat glass bottom and "standard" vial design, which means no need for an adapter.
- Available as Short Thread ND9 or Snap Ring/Crimp ND11 vials.

"Pink" Autosampler Caps

- Available as 8mm and 9mm screw thread and 11mm snap caps.
- Reliable and trusted options for any auto sampler and any application.
- Vial and cap are also available as 2in1 KITs.
- Caps are available with various liner materials, such as Natural Rubber/Teflon, RedRubber/PTFE, Silicone/PTFE, Silicone/PTFE slitted and PTFE/Silicone/PTFE.



HPLC certified, non sterile disposable syringes made of solvent robust polypropylene for all syringe filter applications

- Each manufactured batch is HPLC controlled and supplied with an appropriate certificate upon request.
- Syringes manufactured according to ISO 13485 (Medical devices).
- Luer Lock manufactured according to ISO 594-2 / DIN EN 1707.
- Luer Slip manufactured according to ISO 594-1 / DIN EN 20594-1.
- Two-piece, all-plastic construction made of a chemically resistant, inert polypropylene.
- No rubber plunger seals or silicone lubricants that may cause sample contamination.
- Free of latex, free of plasticizers, free of PVC.
- Safe functional back-stop feature.
- Easy to read permanent graduations.
- All Luer Lock syringes have centered tips.
- Available with Luer Lock and Luer Slip connections.

Micro-Vials with integrated Micro-Insert "Base Bonded"

- Vials with integrated Micro-Insert (Glass-in-Glass) as modern sample containers for Microsampling.
- "Base Bonded" Micro-Vials are a cost-effective alternative to the "Top Bonded" Micro-Vials.
- Important safety aspects with Micro-Vials are risk-free injection of the needle. achieved by solid centering of the Micro-Insert.
- Safe handling during filling as well as excellent sealing of the sample container.
- Residual volume < 2µl for valuable samples.
- Universal autosampler compatibility due to the flat glass bottom and "standard" vial design (no need for an adapter).
- Available as Short Thread ND9 or Snap Ring/Crimp ND11 vials.

PP Storage Boxes

- PP storage boxes for a convenient and safe storage and transportation of sample vials.
- Safe standing position on the laboratory table and during transport due to specific cavities related to the vial diameter.
- Ideal for space-saving storage in fridges, as the transparent lid prevents condensations on the closures and thus avoids a possible contamination in the cooling unit.
- Temperature resistant from -80 degrees to +100 degrees.
- Alpha Numeric Coding (1.5 ml, 4ml) for clear sample identification.
- Unbreakable polypropylene bottom and lid, stackable.
- Chemically resistant and robust; autoclavable.
- Available for 1.5ml, 4 ml, 5ml, 10 ml, 20ml, 20ml, 30ml, 40ml.

Stainless Steel Cleanroom Crimping Tools

- Ensure sample integrity in cleanroom environments.
- Cleanroom crimping tools are made entirely of stainless steel for maximum durability during dry heat sterilization or autoclaving.
- The crimping/decapping mechanism is corrosion and heat resistant. Due to the stainless steel construction protective coating on the handle or crimp head is not necessary.
- Can withstand repeated sterilization for cleanroom use without the risk of damaging the tool.
- Crimping tools are adjustable in crimping pressure and height in order to offer optimal crimping results on varying vial styles.
- Available in 11mm, 13mm and 20mm sizes (other sizes are available upon request).

Technical Information

Vials

In chromatography a broad variety of glass or plastic vials are used as sample containers for analysis usage. As they are mainly used within autosamplers or any other automatic instrument, strict obedience of all dimensions is crucial for a trouble-free run. Besides these physical properties the vials also have to fulfill requirements regarding inertness and cleanliness, as otherwise analysis results may be incorrect. La-Pha-Pack consider the physical and chemical demands in their production process by various implementations:

Almost all vials are made out of 1st hydrolytic class glass. First hydrolytic class glass is very hard and has a low expansion coefficient even at high temperature variations. It shows an excellent chemical resistance to acidic and neutral solutions, and even to alkaline solutions due to its relatively low Alkali content. Higher density of the glass surface offers a higher hydrolytic resistance. Clear Glass of 1st hydrolytic class is differentiated by 33 expansion (Type 1, Class A) and 51 expansion glass (Type 1, Class B), whereas amber is generally worldwide only available as 51 expansion glass. The indicated lower expansion coefficient of 33 implies that this harder clear glass has to be processed at higher temperatures. These amount to approx. 1,200°C for 33 expansion glass in comparison to only approx. 1,000°C for glass of 51 expansion. In the USA typically clear glass in 33 expansion and amber glass in 51 expansion is used, whereas in Europe solely 51 expansion glass is processed. From a quality point of view both types of glass are equally suitable for usage in chromatography, as they both are glasses of 1st hydrolytic class.

All vials that carry a CleanPack label on the front side of the PP-Box have been packed in a certified cleanroom class 10,000 after having passed the annealing oven at approx. 600°C. These high hygienic conditions are pharmaceutical standard, however, new for chromatography vials. Thus the consumer can rely on clean, uncontaminated vials for a correct analysis.

Certified Vials and Closures

Certifications become more and more important in order to make processes more reproducible and avoid possible sources of errors right from the beginning. For La-Pha-Pack highest quality, consistency and quality control have always been very important and and documents this now by two consecutive certfication steps.

SPECIFICATION Vials & Closures APPROVED QUALITY CERTIFIED

HPLC & GC Vial KIT APPROVED QUALITY CERTIFIED

Specification Certified

This is a certification and guarantee, that our products meet the strict specification borders, which are compulsively necessary for a use of the autosampler. This is obtained by the following measures:

- During the manufacturing process opto-electronic devices at the machines check within fractions of a second, if the processed vials meet the physical specifications (dimensions, etc.). In case of mismatch the vial is automatically rejected.
- Besides this, 100 per cent automatic control, manual in-process controls as well as a final inspection according to DIN/ISO standards further ensure functionality and perfect fit in the instrument.
- Regular functional tests further ensure that the vial not only fits the instrument, but also all components that might be connected to it, such as Micro-Inserts, Seals, etc. A correct and reproducable analysis can only be carried out, if the whole unit of the vial (Micro-Insert) and closure correctly match with each other and achieve a tight seal.

HPLC and GC Certified KITs

Based on the "Specification Certified" products each lot of the HPLC and GC certified KITs has been tested on 15 critical parameters. Here a HPLC/UV and GC/FID-Test of the vial/closure combination on blank values and contaminations is done in a reality-near procedure.

- The batch-specific test certificate with the HPLC and GC-Chromatograms can be attached out upon request.
- The HPLC and GC certified KITs are delivered completely shrink-wrapped for reasons of originality, purity and transport safety. This means an additional safety for the end user.
- Available as 9mm Short Thread Vial in clear and amber with suitable closure combination.
- Upon request further HPLC GC Certified Vial KITs will be available.

In order to visualize the most important characteristics that differentiate the different types of vials, we show below some drawings helping you to identify a vial:

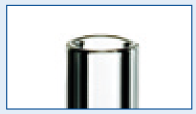
A) Design of the Neck

Headspace Neck
(bevelled Neck)

DIN Crimp Neck
(flat Crimp Neck)

Special Neck
for SPME Vial
(thicker Crimp Neck)

Snap Ring Neck
(can be used
with Snap Ring Caps ND11
or Crimp Caps ND11)



Fire-Polished Neck
(Shell Vials)

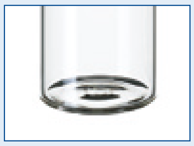
Standard Screw Neck
(Threads run down to
the shoulder of the vial)

Short Thread ND9
(Thread ends in the middle of the neck, so that
there is still some space between the edge of the
cap and shoulder of the vial for robotic arms)

Precision Thread ND18
for Headspace and SPME

Snap Cap Neck
(Sample storage containers,
no autosampler vials)

B) Design of the Bottom



flat bottom

rounded bottom
(HS-bottom)

round bottom

conical bottom

Solid glass bottom of a
Microliter vial with inner cone

Besides standard glass vials La-Pha-Pack also supply some silanized glass products. Silanized glass products are used to reduce the adsorption of polar compounds onto the surface of the glass container (e.g. protein analysis). Some compounds like amino-acids, proteins or phenols tend to react with the glass, and the silanization process prevents this by deactivating the glass surface.

In some specific applications like atomic absorption, water and protein analysis, capillary electrophoresis, etc., even plastic vials have to be used. La-Pha-Pack also offer a broad range of Plastic Vials and Plastic Micro-Vials of different materials (PP, TPX).

In case the application requires pre-sealed vials (e.g. vials that are either already crimped or screwed), as for example in the tobacco industry, we can also supply you with any type of vial and closure already assembled. However, please note that the vials have to be taken out of the CleanPack packaging for the sealing process and thus cannot be called "cleanroom" packed anymore.

EPA Vials can be supplied with or without certificate of cleanliness depending on the consumer's requirements. Furthermore EPA vials can also be supplied pre-assembled with their seals.

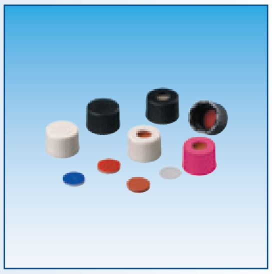
Seals

Seals are the assembled combination of a cap and a septa. To carry out a correct analysis, it is important that besides the vial the seal is also inert and uncontaminated. La-Pha-Pack assemble and pack their seals fully automated according to internally defined room conditions. Thus it is guaranteed that they are not contaminated by human contact as it would be in case of manual assembly. Photocells check the side-orientation of the liner, so that it is ensured that the PTFE lamination is always directed towards the sample to build an inert barrier between sample and carrier material of the septa. A gauge control ensures that not more or less than one septa is installed. The final seals are automatically counted – and not weighed – by automates to guarantee quantity obedience. They are packed in tamper-proof evident zip-lock bags that allow easy identification of the content due to the transparent PE material. The zip-lock enables resealing of the bag to avoid any contamination of the closures during consumption. The batch number of the manfactured seal is printed on each PE-bag for traceability.

UltraBond seals are closures where the cap and the septa form an inseparable unit without the use of any glue or adhesive which are not allowed in chromatography products. This firm connection is achieved by a patented process changing the molecular structure of the cap and the septa surface, so that they form a unit. This process ensures that the septa is not pushed into the vial during penetration, even if the needle is very thick and blunt. Examples for such UltraBond Seals are 24mm Screw Seals for EPA Vials or 9mm Short Thread Seals for Short Thread Vials.

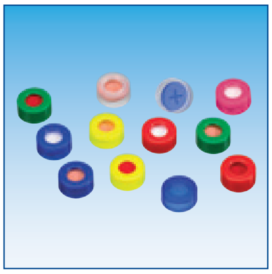
Seals

Different closure techniques and/or application requirements necessitate certain caps. In order to visualize the different types of caps, please see the photos below:

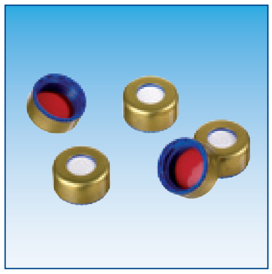


Screw Caps
(open top/closed top)

Short Thread Caps
(open top/closed top)

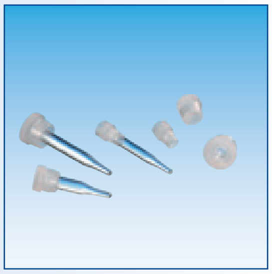


Snap Ring Caps
(only as open top, hard or soft PE Cap available)

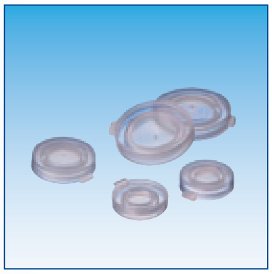


Magnetic
Short Thread Cap
(only as open top)

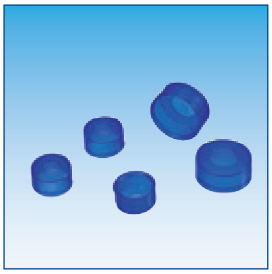
Various UltraBond
Seals ND9 + ND24



PE-Plugs
(for Shell Vials;
Micro-Inserts can be
installed in the plug)

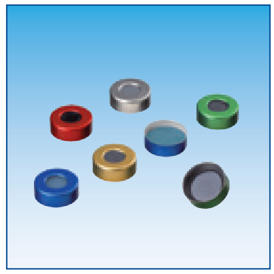


Snap Caps
(for sample storage
containers)

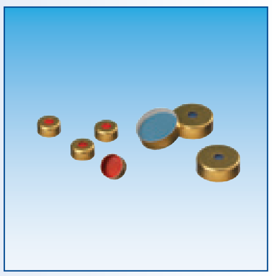


PE Push-On Caps
ND8 + ND11

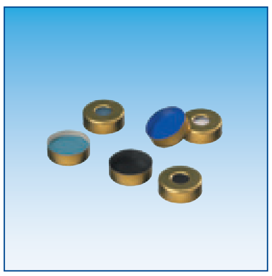
PE Caps
(for Crimp Necks ND8,
ND11 + ND20)



Aluminum Caps,
centre hole

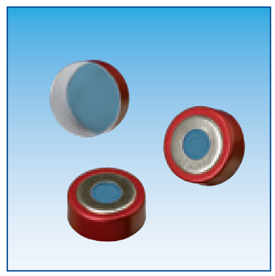


Magnetic
Crimp Caps
(5mm centre hole)

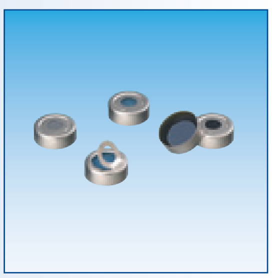


Magnetic
Crimp Caps
(8mm centre hole)

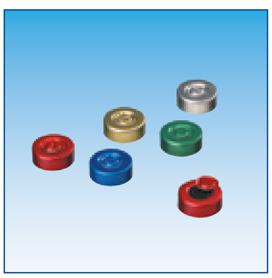
Magnetic Screw Caps
(8mm centre hole/closed top)



Magnetic Bimetal
Crimp Cap
(8mm centre hole)

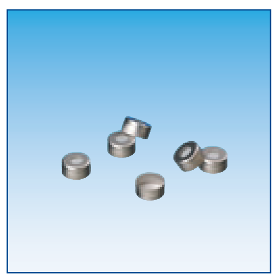


Headspace Caps
(Pressure Release Caps)



Centre Tear Off Caps

Complete Tear Off Caps



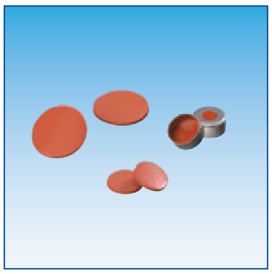
Crimp Caps with
roll grove

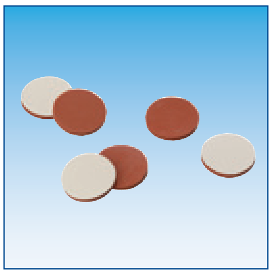
The right choice of septa depends on the application. Almost all septa are laminated on one side with PTFE, which has a high chemical resistance and forms an inert barrier between sample and carrier material of the septa. The carrier materials have different physical and chemical properties, such as temperature resistance, resealability properties, cleanliness, hardness, thickness, etc.

The individual conditions of the customer's application aim at the specific characteristics of the carrier material, e.g.:

Multiple injection?	Temperature?			Thin, fragile needle?	Blunt, thick needle?	Critical analysis?	Low coring?
good resealability properties necessary	-40°C up to 120°C	-40°C up to 110°C	-60°C up to 200°C	soft and thin septa required	Slitted/pre-cut liner as penetration aid (HPLC)	very clean liner required	Both sided PTFE laminated liners required
Natural Rubber/TEF	**Natural Rubber/TEF; Butyl/PTFE**	**RedRubber/PTFE**	**Silicone/PTFE**	**e.g. Silicone/PTFE**	**e.g. 08 02 0039** (page 21-chapter 2.4)	UltraClean **Silicone/PTFE septa**	**PTFE/Silicone/PTFE PTFE/Butyl/PTFE**

In order to visualize the most common liners on the market, please see photos below. However, please note that colours of the liners are no exact indication for the identification of a liner material.

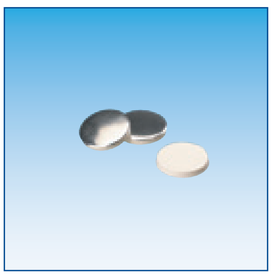

Natural Rubber/TEF

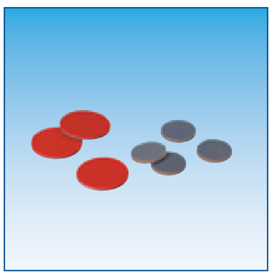

RedRubber/PTFE beige


Butyl


Butyl/PTFE

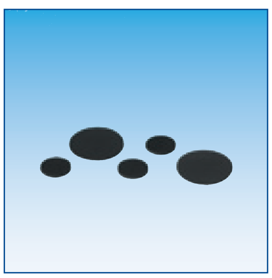

Pharma-Fix-Septa (Butyl/PTFE)

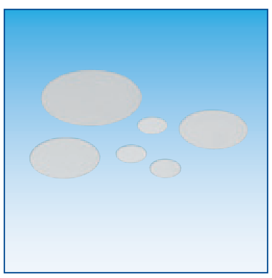

Silicone/Aluminum foil


PTFE/Silicone/PTFE
PTFE/Butyl/PTFE


Silicone/PTFE

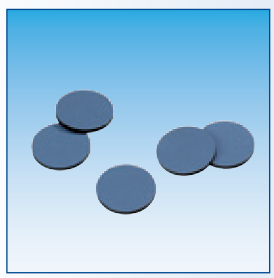

Pre-cut liners


Viton


PTFE


Aluminum


Septa for Schott Screw Caps


PTFE/EPDM/PTFE

Technical Information

1. Crimp Neck ND8

SPECIFICATION Vials & Closures APPROVED QUALITY CERTIFIED

The vials are preferentially used on instruments of the following manufacturers: Agilent, Beckman, Carlo Erba, CTC, Fisons, PerkinElmer, Shimadzu, Thermo Scientific, VWR (Merck®)/Hitachi, etc.
(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

Broad selection of Crimp Neck Vials ND8 available:

- with different volumes
- with flat, round or conical bottom
- in clear or amber glass
- for almost all autosamplers

Crimp Neck Vials and Micro Vials ND8 can be closed with 8mm Aluminum Caps, 9mm PE-Caps or with 8mm Push-On Caps. However, Micro-Vials often need an adapter to run in the autosampler. They often have a conical bottom shape, so that they cannot stand by themselves, but need an adapter.

1.1 Crimp Neck Vials and Micro-Vials ND8

Art. No.	08 09 0405	08 09 0406	08 09 0284	08 09 0845	08 09 0953
Description	0.7ml Crimp Neck Vial, 40 x 7mm, clear glass, 1st hydrol. class	0.7ml Crimp Neck Vial, 40 x 7mm, amber glass, 1st hydrol. class	0.8ml Crimp Neck Vial, 30 x 8.2mm, clear glass, 1st hydrol. class	1.2ml Crimp Neck Vial, 40 x 8.2mm, clear glass, 1st hydrol. class	1.2ml Crimp Neck Vial, 40 x 8.2mm, amber glass, 1st hydrol. class
TFVol. (ml)	0.9	0.9	0.9	1.1	1.1
UsVol. (ml)	0.8	0.8	0.8	1.00	1.00
MWVol. (µl)	40	40	40	50	50
Res. Vol. (µl)	<11	<11	<11	<20	<20
	10 x 100 pcs. per PP-Box		100 pcs. per PP-Box		

Art. No.	08 09 0276	08 09 0606	08 09 0305	08 09 0258	08 09 1080
Description	0.3ml Micro-Vial, 31.5 x 5.5mm, clear glass, 1st hydrol. class, round bottom	0.2ml Micro-Vial, 31.5 x 5.5mm, clear glass, 1st hydrol. class, conical	0.6ml Micro-Vial, 40 x 7mm, clear glass, 1st hydrol. class, conical	0.6ml Micro-Vial, 40 x 7mm, amber glass, 1st hydrol. class, conical	0.4ml Micro-Vial, 30 x 7mm, amber glass, 1st hydrol. class, conical
TFVol. (ml)	0.35	0.26	0.64	0.64	1.3
UsVol. (ml)	0.3	0.2	0.6	0.6	1.05
MWVol. (µl)	30	25	25	25	25
Res. Vol. (µl)	<6	<3	<3	<3	<3
	10 x 100 pcs. per PP-Box				

TIP

For Vial Racks please see chapter 19.1 on page 56

TIP

For 8mm Crimpers and Decappers please see chapter 18 on pages 54-55.

CLEAN PACK

All vials labelled with such a sticker are packed under pharmaceutical conditions in a class 10,000 cleanroom.

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

1.2 Aluminum Crimp Seals ND8

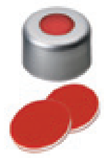
1.2.1 Natural Rubber/TEF and RedRubber/PTFE Seals

- Temperature resistant from -40°C up to 120°C for Natural Rubber resp. up to 110°C for RedRubber.
- Natural Rubber harder to penetrate with more fragmentation during penetration than RedRubber.
- Natural Rubber ideal for multiple injections due to high resealability, but not as clean as the synthetic RedRubber.

			
Art. No.	**08 03 0451**	**08 03 1935**	**08 03 2042**
Description Cap	Aluminum Cap clear lacquered, 4mm centre hole		
Septa Material	Nat. Rubber red-orange/TEF transparent ***approved Instrument Manufacturer Quality***	Nat. Rubber red-orange/TEF transparent (replaces article 08 03 0200)	RedRubber/PTFE beige
Durometer	60° shore A	60° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag			

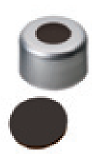
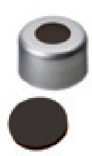
1.2.2 Silicone/PTFE Seals

- Temperature resistant from -60°C up to 200°C.
- Preferably only for single injections due to low resealability properties.
- Different hardnesses (durometers) to meet requirements of the needle regarding penetration.
- Much cleaner than Natural Rubber or RedRubber.
- Silicone liners with PTFE on both sides for less coring during penetration.

					
Art. No.	**08 03 0249**	**08 03 0165**	**08 03 0884**	**08 03 0113**	**08 03 1156**
Description Cap	Aluminum Cap clear lacquered, 4mm centre hole				
Septa Material	Silicone white/PTFE red UltraClean	Silicone cream/PTFE red UltraClean	Silicone dark blue/PTFE white	PTFE red/Silicone white/PTFE red	Silicone white/PTFE red, with slit
Durometer	45° shore A	55° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.3mm	1.5mm	1.3mm	1.0mm	1.3mm
100 pcs. per PE-Bag					

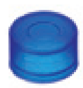
1.2.3 Other Crimp Seals

- PTFE is very inert and temperature resistant, however, problems with leakage due to the inflexibility and thinness of the material; only for single injections; nearly no press fit in caps; mainly for uncritical HPLC analysis.
- Viton is resistant to a number of corrosive organic substances; temperature resistant from -23°C up to 200°C; mainly used in petrochemical areas.

			
Art. No.	**08 03 0268**	**08 03 0861**	**08 03 0055**
Description Cap	Aluminum Cap clear lacquered, 4mm centre hole		
Septa Material	PTFE virginal	Viton black	Viton black
Durometer	53° shore D	70° shore A	70° shore A
Thickness	0.25mm	1.0mm	1.5mm
100 pcs. per PE-Bag			

1.3 Other Combination Seals for Crimp Neck ND8

- Push-On Cap (08 08 1675) with thinned penetration point made of Polyethylene for Crimp Neck Vials and Micro-Vials ND8.
- Inexpensive alternative to crimp caps for uncritical analyses, as it does not contain any septa, but only has a thinner penetration point.

			
Art. No.	**08 08 1675**	**09 15 0753**	**09 15 0756**
Description Cap	PE Push-On Cap, blue	PE-Cap, transparent, 9 x 5.9mm, 4mm centre hole	PE-Cap, transparent, 9 x 5.9mm, 4mm centre hole
Septa Material	with thinned penetration point	Nat. Rubber red-orange/ TEF transparent	Silicone white/PTFE red
Durometer		60° shore A	45° shore A
Thickness		1.3mm	1.3mm
100 pcs. per PE-Bag			

Further Crimp Seals ND8 or Combination Seals for Crimp Neck ND8 are available upon request!

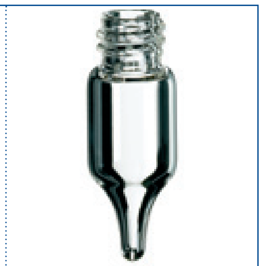
2. Screw Neck ND8

The vials are preferentially used on instruments of the following manufactures: Beckman, CTC, Gilson, Knauer, Shimadzu, Spark, Varian, VWR (Merck®)/Hitachi, etc.

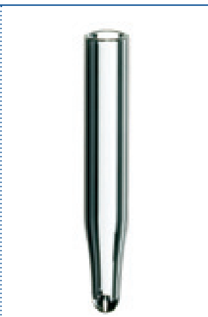
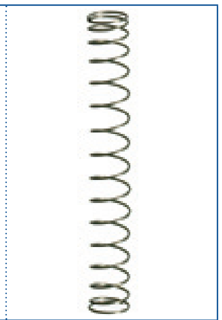
(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- Standard vials for GC and HPLC.
- Specially suitable for VWR (Merck®)/ Hitachi instruments (Articles 11 09 0210, 11 09 0259, 05 09 0129, 08 15 0460, 08 08 0027, 08 02 0177, 08 02 0039).
- Broad range of Micro-Inserts.
- Vials and seals also available as 2in1 KIT.
- Small opening requires Micro-Inserts with a diameter of 5mm.
- Micro-Insert with flat bottom also available.

2.1 Screw Neck Vials ND8, small opening, 8-425 thread and Micro-Vials ND8

					
Art. No.	**11 09 0210**	**11 09 0259**	**11 09 0419**	**11 09 0382**	**11 09 0417**
Description	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening ***SILANIZED 11 09 2175***	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, small opening	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening, label + filling lines	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, small opening, label + filling lines ***SILANIZED 11 09 2190***	1.1ml Micro-Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, conical, small opening
TFVol. (ml)	1.9	1.9	1.9	1.9	1.3
UsVol. (ml)	1.5	1.5	1.65	1.5	1.00
MWVol. (µl)	200	200	200	200	30
Res. Vol. (µl)	<110	<110	<110	<110	<3
	100 pcs. per PP-Box				

2.2 Micro-Inserts for Vials with small opening

						
Art. No.	**05 09 0129**	**05 09 0269**	**05 09 1674**	**05 09 0968**	**05 09 0279**	**05 13 0426**
Description	0.1ml Micro-Insert, 31 x 5mm, clear glass, 1st hydrol. class, 15mm top	0.1ml Micro-Insert, 31 x 5mm, clear glass, 1st hydrol. class, 9mm top	0.2ml Micro-Insert, 31 x 5mm, clear glass, 1st hydrol. class, flat bottom	0.1ml Micro-Insert, 29 x 5mm, clear glass, 1st hydrol. class, with assembled plastic spring	0.1ml Micro-Insert, 27.5 x 4mm, clear glass, 1st hydrol. class ***Metal Spring required!***	Spring 36 x 5mm ***For Micro-Insert 05 09 0279!***
TFVol. (ml)	0.2	0.25	0.3	0.2	0.2	
UsVol. (ml)	0.15	0.2	0.26	0.15	0.11	
MWVol. (µl)	25	30	40	25	25	
Res. Vol. (µl)	<1	<2	<8	<1	<1	
	10 x 100 pcs. per PP-Box					100 pcs. per PE-Bag

TIP

Upon request vials with your logo can be manufactured as a special production

TIP

Upon request vials with a barcode label are available

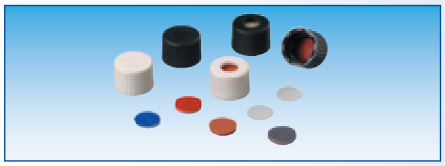
TIP

Upon request pre-sealed vials are deliverable

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

2.3 PP Screw Seals ND8

- Ready to use combination seals; no time-consuming and "tricky" assembly.
- Available with black or white screw caps with 8-425 thread.
- Available as closed top screw seals or with centre hole.
- Now available either with Natural Rubber or RedRubber as cost-effective seals.



2.3.1 Natural Rubber/TEF, RedRubber/PTFE and Butyl/PTFE Seals

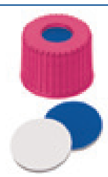
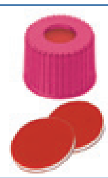
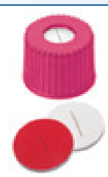
- Temperature resistant from -40°C up to 120°C for NR/TEF + Butyl/PTFE resp. up to 110°C for RR/PTFE.
- Natural Rubber is ideal for multiple injections due to high resealability, but not as easy to penetrate than RR/PTFE.
- Butyl as a synthetic rubber has good chemical properties (cleanliness).
- Standard, moderately priced seals for GC and HPLC.
- RR/PTFE has a better purity than NR/TEF, is softer and has less fragmentation, but doesn´t offer the outstanding resealability as NR/TEF.

						
Art. No.	**08 15 0460**	**08 15 1965**	**08 15 1637**	**08 15 2466**	**08 15 2461**	**08 15 2462**
Description Cap	Polypropylene Screw Cap black, 5.5mm centre hole, 8-425 thread			Polypropylene Screw Cap pink, 5.5mm centre hole, 8-425 thread		
Septa Material	Nat. Rubber red-orange/ TEF transparent	RedRubber/PTFE beige	Butyl red/PTFE grey	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige	Butyl red/PTFE grey
Durometer	60° shore A	45° shore A	55° shore A	60° shore A	45° shore A	55° shore A
Thickness	1.3mm	1.0mm	1.3mm	1.3mm	1.0mm	1.3mm
	Further Screw Seals ND8 with closed/open top resp. with white Caps are available upon request!					
	100 pcs. per PE-Bag					

2.3.2 Silicone/PTFE Seals

- Temperature resistant from -60°C up to 200°C.
- Silicone liners with PTFE on both sides for less coring.
- Different hardnesses (durometers) to meet requirements of the various types of needles regarding penetration.
- Much cleaner than Natural Rubber, RedRubber or Butyl.
- The special, slitted liner for VWR (Merck®)/Hitachi is only available unassembled, as the diameter with the most optimal valve effect does not achieve any press-fit in the cap. Enlargement of the diameter is only possible with negative effects on the building up of vacuums in the vial.

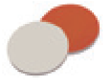
					
Art. No.	**08 15 0293**	**08 15 0427**	**08 15 0886**	**08 15 0294**	**08 15 1449**
Description Cap	Polypropylene Screw Cap black, 5.5mm centre hole, 8-425 thread				
Septa Material	Silicone white/PTFE red UltraClean	Silicone cream/PTFE red UltraClean	Silicone dark blue/PTFE white	PTFE red/Silicone white/PTFE red	Silicone white/PTFE red, with slit
Durometer	45° shore A	55° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.3mm	1.5mm	1.3mm	1.0mm	1.3mm
	Further Screw Seals ND8 with closed/open top resp. with white Caps are available upon request!				
	100 pcs. per PE-Bag				

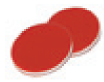
					
Art. No.	**08 15 2463**	**08 15 2464**	**08 15 2465**	**08 15 2289**	**08 15 2493**
Description Cap	Polypropylene Screw Cap pink, 5.5mm centre hole, 8-425 thread				
Septa Material	Silicone white/PTFE red UltraClean	Silicone cream/PTFE red UltraClean	Silicone dark blue/PTFE white	PTFE red/Silicone white/PTFE red	Silicone white/PTFE red, with slit
Durometer	45° shore A	55° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.3mm	1.5mm	1.3mm	1.0mm	1.3mm
	Further Screw Seals ND8 with closed/open top resp. with white Caps are available upon request!				
	100 pcs. per PE-Bag				

2.3.3 Natural Rubber/TEF, RedRubber/PTFE, Butyl/PTFE and Silicone/PTFE Seals, closed top

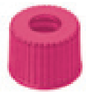
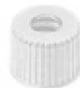
				
Art. No.	**08 15 0654**	**08 15 2105**	**08 15 1653**	**08 15 1040**
Description Cap	Polypropylene Screw Cap black, closed top, 8-425 thread			
Septa Material	Nat. Rubber red-orange/TEF transparent	RedRubber / PTFE beige	Butyl red/PTFE grey	Silicone white/PTFE red UltraClean
Durometer	60° shore A	45° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.0mm	1.3mm	1.3mm
	Further Screw Seals ND8 with closed/open top resp. with white Caps are available upon request!			
	100 pcs. per PE-Bag			

2.4 Septa 8mm

						
Art. No.	**08 02 0177**	**08 02 0232**	**08 02 0355**	**08 02 1966**	**08 02 1633**	**08 02 1680**
Description	PTFE virginal (only unassembled)	Nat. Rubber red-orange/ TEF transparent (only unassembled)	Nat. Rubber red-orange/ TEF transparent, ***tested by VWR (Merck®)/Hitachi***	RedRubber/PTFE beige	Butyl red/PTFE grey	PTFE grey/Butyl red/ PTFE grey
Durometer	53° shore D	60° shore A	60° shore A	45° shore A	55° shore A	55° shore A
Thickness	0.25mm	1.0mm	1.3mm	1.0mm	1.3mm	1.3mm
	1000 pcs. per PE-Bag					

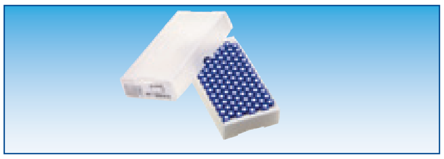
					
Art. No.	**08 02 0103**	**08 02 0009**	**08 02 0881**	**08 02 0039**	**08 02 0005**
Description	Silicone white/PTFE red	Silicone cream/PTFE red	Silicone dark blue/PTFE white	Silicone white/PTFE blue, slitted, ***rec. by VWR (Merck®)/Hitachi*** (only unassembled)	PTFE red/Silicone white/ PTFE red
Durometer	45° shore A	55° shore A	45° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.5mm	1.3mm	0.9mm	1.0mm
	Against a small surcharge we also sell in smaller packaging units!				
	1000 pcs. per PE-Bag				

2.5 PP Screw Caps ND8

					
Art. No.	**08 08 0027**	**08 08 0420**	**08 08 2288**	**08 08 0436**	**08 08 0435**
Cap	Polypropylene Screw Cap, black, 5.5mm centre hole	Polypropylene Screw Cap, black, closed top	Polypropylene Screw Cap, pink, 5.5mm centre hole	Polypropylene Screw Cap, white, 5.5mm centre hole	Polypropylene Screw Cap, white, closed top
	100 pcs. per PE-Bag				

2.6 Screw Neck Vials ND8, small opening, 8-425 thread with pre-screwed PP Screw Seals ND8

- Pre-screwed vials reduce the risk of contamination of vials in laboratories. Furthermore special applications could require (e.g. in the tobacco industry) a pre-screwed vial.
- Pre-screwed vials are available with any of the 8-425 screw neck vials and any seal of your choice.



Art. No.	**11 14 1739**	**11 14 1716**	**11 14 1763**
Description	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening (11 09 0210)	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening (11 09 0210)	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening (11 09 0210)
	pre-screwed with	***pre-screwed with***	***pre-screwed with***
Seal	Polypropylene Screw Cap, black, 5.5mm centre hole (08 08 0027); Silicone white/PTFE blue, 55° shore A, 0.9mm, slitted (08 02 0039), ***rec. by VWR (Merck®)/Hitachi***	Polypropylene Screw Cap black, 5.5mm centre hole; Silicone white/PTFE red, 45° shore A, 1.3mm, (08 15 0293)	Polypropylene Screw Cap black, 5.5mm centre hole; Silicone white/PTFE red, 45° shore A, 1.3mm, slitted (08 15 1449)
	100 pcs. per PP-Box		

2.7 Special 2in1 KIT

3in1 KITs for VWR (Merck®)/Hitachi Autosampler

Art. No. 3in1 KIT	Art. No. Vial	Art. No. Cap	Art. No. Septa	Alternative 3in1 KITs/2in1 KITs	
11 23 1047	**11 09 0210**	**08 08 0027**	**08 02 0039**	**11 23 1144**	**11 23 1085**
3in1 KIT consisting of: 11 09 0210, 08 08 0027, 08 02 0039	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening	Polypropylene Screw Cap, black, 5.5mm centre hole	Silicone white/PTFE blue, 55° shore A, 0.9mm, slitted ***rec. by VWR (Merck®)/Hitachi***	Same Cap + same Septa in combination with 11 09 0259 (amber glass, small opening)	Same Vial + same Cap in combination with 08 02 0177 (PTFE virginal 0.25mm)
11 23 1045	**11 09 0210**	**08 15 0460**		**11 23 1614**	**11 23 1499**
2in1 KIT consisting of: 11 09 0210, 08 15 0460	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening	Polypropylene Screw Cap, black, 5.5mm centre hole, Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.3mm		Same Seal in combination with 11 09 0259 (amber glass, small opening)	Same Seal in combination with 11 09 0419 (clear glass, small opening, with label + filling lines)
100 pcs. each in one KIT					

2in1 KITs for Varian Autosampler

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal	Alternative 2in1 KITs
11 23 1046	**11 09 0210**	**08 15 0293**	**11 23 1280**
2in1 KIT consisting of: 11 09 0210, 08 15 0293	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, small opening	PP Screw Cap, black, 5.5mm centre hole; UltraClean Silicone white/PTFE red, 45° shore A, 1.3mm	Same Seal in combination with 11 09 0419 (clear glass, small opening, with label + filling lines)
11 23 1098	**11 09 0259**	**08 15 0293**	**11 23 1100**
2in1 KIT consisting of: 11 09 0259, 08 15 0293	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, small opening	PP Screw Cap, black, 5.5mm centre hole; UltraClean Silicone white/PTFE red, 45° shore A, 1.3mm	Same Seal in combination with 11 09 0382 (amber glass, small opening, with label + filling lines)
100 pcs. each in one KIT			

Further 2in1 KITs are available upon request!

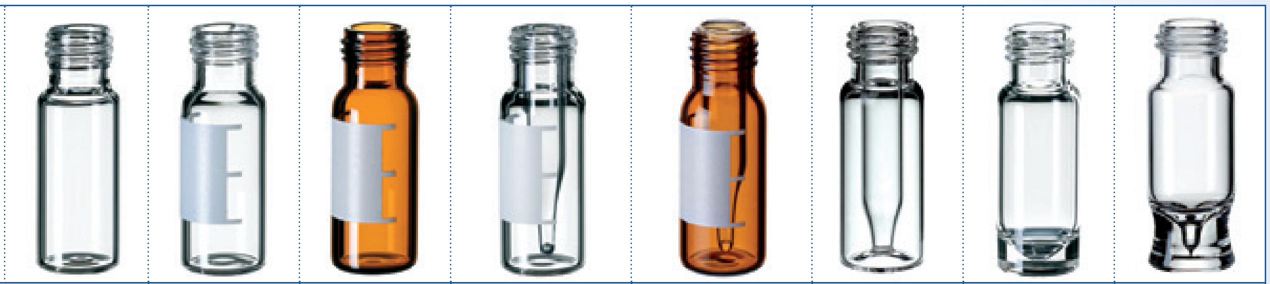
3. Short Thread ND9

The vials can be used on all common autosamplers due to their technical geometry, preferentially they are found on Agilent, HTA, Shimadzu, Thermo Scientific, Varian, Waters®, etc.
(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

The Universal Autosampler Vial

- Universally compatible on almost all autosamplers, thereby rationalization of other 1.5ml vials, as for instance 11mm Crimp Neck Vials, Screw Neck Vials 8-425 and 10-425, is possible.
- Vials with integrated Micro-Insert are also now available in amber glass.
- Pre-screwed Short Thread Vials available.

3.1 Short Thread Vials ND9, wide opening and Micro-Vials with Short Thread ND9



Art. No.	11 09 0500	11 09 0519	11 09 0520	11 09 0999	11 09 1957	11 09 2357	11 09 0620	11 09 2275
Description	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening ***SILANIZED*** ***11 09 1241***	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening, label + filling lines	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines ***SILANIZED*** ***11 09 1242***	Short Thread Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, clear glass, 1st hydrol. class, with label + filling lines, ***"Top Bonded"***	Short Thread Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, amber glass, 1st hydrol. class, with label + filling lines, ***"Top Bonded"***	Short Thread Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1st hydrol. class ***"Base Bonded"***	1.1ml Microliter Short Thread Vial ND9, 32 x 11.6mm, clear glass, 1st hydrol. class ***SILANIZED*** ***11 09 2178***	0.9ml Total Microliter Short Thread Vial ND9, 32 x 11.6mm, clear glass, 1st hydrol. class
TFVol. (ml)	1.85	1.85	1.85	0.34	0.34	0.4	1.6	1.4
UsVol. (ml)	1.5	1.5	1.5	0.2	0.2	0.3	1.5	1.1
MWVol. (µl)	200	200	200	25	25	30	30	25
Res. Vol. (µl)	<120	<120	<120	<1	<1	<3	<3	<1

100 pcs. per PP-Box

3.1 Short Thread Vials ND9 (cont.)

Art. No	11 14 1189	11 14 1655
Description	TopSert TPX Short Thread Vial, 32 x 11.6mm, clear, with integrated 0.2ml Glass Micro-Insert ***SILANIZED*** ***11 14 1265***	TopSert TPX Short Thread Vial, 32 x 11.6mm, amber, with integrated 0.2ml Glass Micro-Insert ***SILANIZED*** ***11 14 1694***
TFVol. (ml)	0.36	0.36
UsVol. (ml)	0.2	0.2
MWVol. (µl)	25	25
Res. Vol. (µl)	<1	<1

100 pcs. per PP-Box

3.2 Micro-Inserts for Short Thread Vials ND9 with wide opening

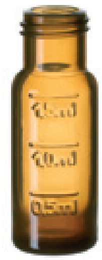
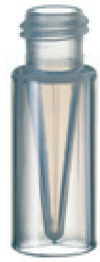
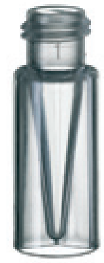
06 09 0357	06 09 0669	06 09 0865	06 09 0866	06 19 2240	06 19 2241	06 19 2242
0.1ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 15mm top ***SILANIZED*** ***06 09 1240***	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1st hydrol. class, with assembled plastic spring ***SILANIZED*** ***06 09 1343***	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, flat bottom	0.1ml PP Micro-Insert, 29 x 6mm, clear, 10mm top, with filling lines	0.1ml PP Micro-Insert, 29 x 6mm, clear, 10mm top, with filling lines and attached Plastic Spring	0.2ml PP Micro-Insert, 31 x 6mm, clear, flat bottom
0.34	0.35	0.3	0.5	0.30	0.30	0.5
0.25	0.3	0.25	0.35	0.25	0.25	0.35
30	30	30	40	30	30	40
<4	<4	<4	<8	<4	<4	<8

10 x 100 pcs. per PP-Box

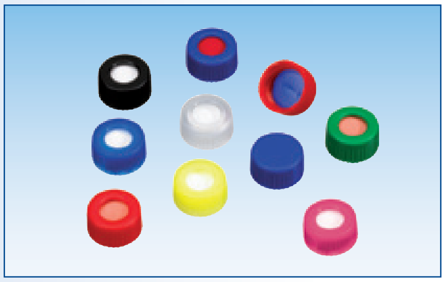
Upon request we supply Micro-Inserts pre-assembled in vials.

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

3.3 Plastic Vials ND9 and Plastic Micro-Vials ND9

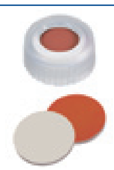
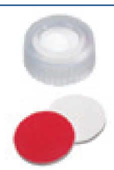
	PP 	PP 	PP 	PP 	TPX 	PP 
Art. No.	**11 19 1205**	**11 19 1516**	**11 19 1706**	**11 19 0932**	**11 19 1021**	**11 19 1216**
Description	1.5ml PP Short Thread Vial, transparent, with filling lines, 32 x 11.6mm, slightly concave shaped bottom	1.5ml PP Short Thread Vial, amber, with filling lines, 32 x 11.6mm, slightly concave shaped bottom	0.7ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	0.3ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	0.3ml TPX Short Thread Micro-Vial, crystal clear, 32 x 11.6mm	0.3ml PP Short Thread Micro-Vial, amber, 32 x 11.6mm
TFVol. (ml)	1.85	1.85	0.87	0.4	0.4	0.4
UsVol. (ml)	1.50	1.50	0.60	0.25	0.25	0.25
MWVol. (µl)	200	200	150	30	30	30
Res. Vol. (µl)	<110	<110	<80	<4	<4	<4
100 pcs. per PE-Bag						

3.4 PP Short Thread Seals ND9



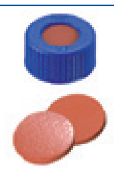
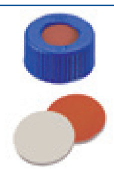
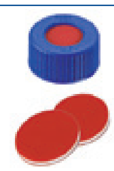
- Synthetic RedRubber/PTFE material as a cost-effective match of the Instrument Manufacturer Quality. In contrast to Natural Rubber it is not suitable for multiple injections, however softer for a safe penetration.
- Screw cap with the design of a crimp cap; therefore suitable for robotic handling.
- Already assembled seal with slitted liner available, in order to avoid vacuum within the vial in case of multiple injections.
- With pre-cut septa only the silicone material is slitted in Y-shape while the PTFE lamination remains intact. This way concentration changes occuring with completely slitted septa can be avoided.
- Short thread seals also available as closed top version (blue cap).

3.4.1 PP Short Thread Cap transparent, 6mm centre hole

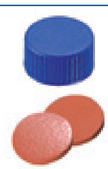
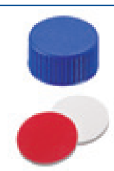
							
Art. No.	**09 15 0981**	**09 15 0478**	**09 15 2011**	**09 15 0481**	**09 15 0480**	**09 15 0852**	**09 15 2021**
Septa Material	PTFE virginal	Nat. Rubber red-orange/ TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit	Silicone white/PTFE red, pre-cut (Y)
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag							

3.4.2. PP Short Thread Cap blue

3.4.2.1 PP Short Thread Cap blue, 6mm centre hole

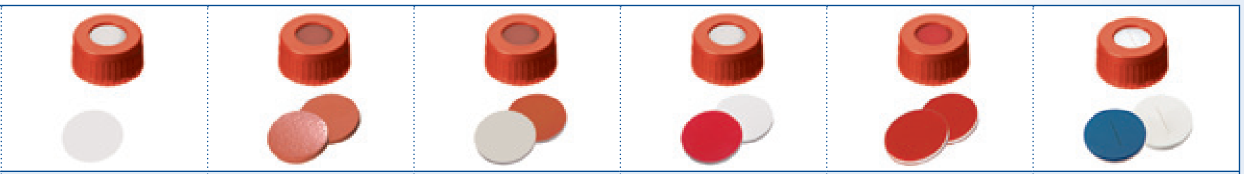
							
Art. No.	**09 15 0982**	**09 15 0867**	**09 15 1819**	**09 15 0838**	**09 15 0868**	**09 15 0869**	**09 15 2016**
Septa Material	PTFE virginal	Nat. Rubber red-orange/ TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit	Silicone white/PTFE red, pre-cut (Y)
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag							

3.4.2.2 PP Short Thread Cap blue, closed top

			
Art. No.	**09 15 1828**	**09 15 1887**	**09 15 1799**
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	Silicone white/PTFE red UltraClean
Durometer	53° shore D	60° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm
100 pcs. per PE-Bag			

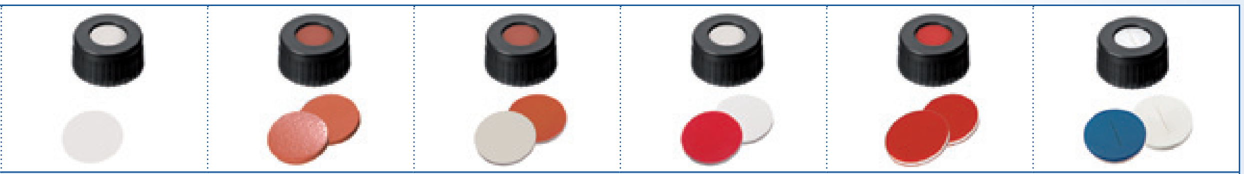
TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl); *approved instrument manufacturer quaility

3.4.3 PP Short Thread Cap red, 6mm centre hole



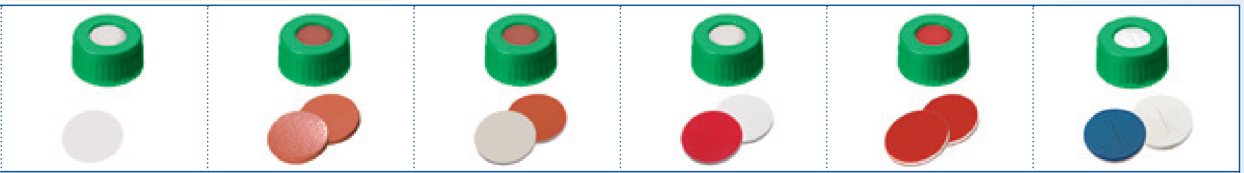
Art. No.	09 15 1337	09 15 1176	09 15 2012	09 15 1178	09 15 1177	09 15 1179
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag						

3.4.4 PP Short Thread Cap black, 6mm centre hole



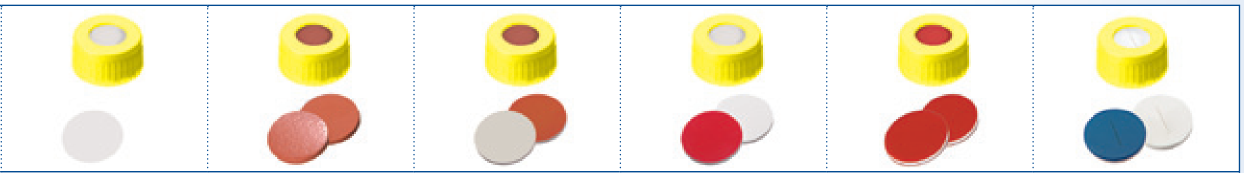
Art. No.	09 15 1668	09 15 1570	09 15 2013	09 15 1572	09 15 1571	09 15 1669
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag						

3.4.5 PP Short Thread Cap green, 6mm centre hole



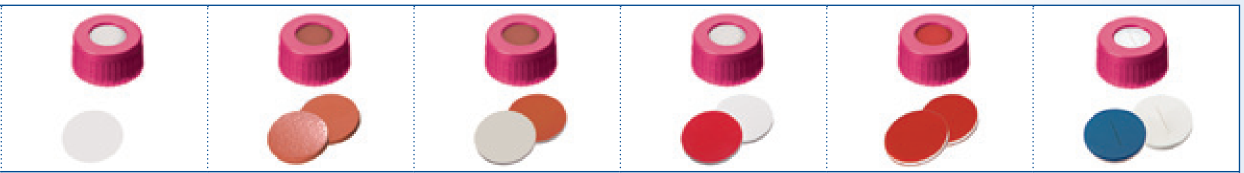
Art. No.	09 15 1539	09 15 1356	09 15 1911	09 15 1332	09 15 1485	09 15 1746
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag						

3.4.6 PP Short Thread Cap yellow, 6mm centre hole



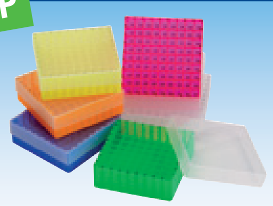
Art. No.	09 15 2015	09 15 1542	09 15 2014	09 15 1527	09 15 1486	09 15 1745
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag						

3.4.7 PP Short Thread Cap pink, 6mm centre hole



Art. No.	09 15 2468	09 15 2469	09 15 2470	09 15 2473	09 15 2471	09 15 2472
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag						

TIP



For Storage Boxes please see chapter 19.2 on page 57

TIP

For Vial Racks please see chapter 19.1 on page 56

*approved instrument manufacturer quality

3.4.8 Magnetic Short Thread Cap, 6mm centre hole (for CTC GC PAL + Thermo Scientific TriPlus Autosampler)

- More convenient and safer in handling than 11mm magnetic crimp seals.
- Ready-to-use closures.
- Officially tested and approved by CTC.

	
Art. No.	**09 15 1907**
Septa Material	Silicone white/PTFE red Ultra*Clean*
Durometer	55° shore A
Thickness	1.0mm
100 pcs. per PE-Bag	

3.4.9 9mm Short Thread MS Cap transparent

- One Component Closure – no bleeding.
- Absolutely inert.
- Pierceable like a septa.
- LC/GC MS certified.
- Tight like a septa.

	
Art. No.	**09 08 2000**
Septa Material	with thinned penetration area and diaphragm
100 pcs. per PE-Bag	

3.4.10 UltraBond Seals ND9 (Cap + Liner form an inseparable unit, so that the liner cannot be pushed into the vial even with a blunt needle)

- Analogous to the LECTRABOND closure from Waters® resp. the INTERSEAL closure from Agilent we also offer several UltraBond Short Thread Seals, among others also in an ***improved Instrument Manufacturer Quality***.

The new septa material is an especially pure Silicone material, which optimizes the product safety even more. Further, the PTFE layer was modified, which permits an even easier penetration of the needle.

			
Art. No.	**09 04 1220**	**09 04 1533**	**09 04 1534**
Description Cap	PP Short Thread Cap black, 6mm centre hole	PP Short Thread Cap blue, 6mm centre hole	PP Short Thread Cap blue, 6mm centre hole
Septa Material	Silicone white/PTFE red	Silicone beige/PTFE white ***improved IM Quality****	Silicone beige/PTFE white, with slit ***improved IM Quality****
Durometer	45° shoreA	45° shore A	45° shore A
Thickness	1.3mm	1.3mm	1.3mm
100 pcs. per PE-Bag			

3.4.11 HPLC and GC Certified Vial KITs (Short Thread Vials and Short Thread Seals ND9)

HPLC and GC certified Vial KITs Certifications are getting more and more important, in order to make processes more reproducible and avoid possible sources of errors from the beginning. For La-Pha-Pack highest quality, consistency and quality control have always been very important and have been documented by HPLC and GC certified vials and closures.

- Each batch of HPLC and GC-certified KIT is tested on 15 critical parameters. In a realistic method, an HPLC/UV and GC/FID test of vials/closure combination of blanks and contaminations will be carried out.
- The batch-specific test certificate with the HPLC and GC-Chromatograms can be handed out upon request.
- The HPLC and GC certified KITs are delivered completely shrinkwrapped for reasons of originality, purity and transport safety. This means an additional safety for the end user.

HPLC & GC Vial KIT APPROVED QUALITY CERTIFIED

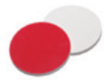
		
Art. Nr.	**11 40 2556**	**11 40 2557**
Description	HPLC/GC Certified Vial KIT 1.5ml Short Thread Vial, clear glass, 1st hydrol. class, with label; Ultra*Clean* Seal: 9mm PP Short Thread Cap, black, centre hole; Silicone white/PTFE red, 1.0mm	HPLC/GC Certified Vial KIT 1.5ml Short Thread Vial, amber glass, 1st hydrol. class, with label; Ultra*Clean* Seal: 9mm PP Short Thread Cap, black, centre hole; Silicone white/PTFE red, 1.0mm
100 Vials and Seals each in one KIT		

Further certified combinations are availalbe upon request.

*improved instrument manufacturer quaility

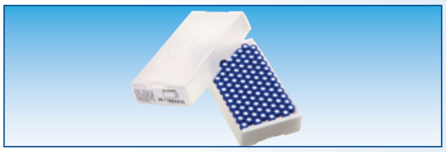
3.5 Septa 9mm for Short Thread Caps

- Please consider that the diameter of the septa has been determined in that way that they fit optimal in our short thread caps. This is not necessarily valid for caps of other manufacturers.

						
Art. No.	**09 02 0980**	**09 02 1779**	**09 02 1818**	**09 02 1780**	**09 02 1781**	**09 02 1942**
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige ***approved IM Quality****	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
	1000 pcs. per PE-Bag					

3.6 Short Thread Vials and Micro-Vials ND9 with assembled Short Thread Seals ND9

- Pre-screwed vials reduce the risk of contamination of vials in laboratories. Furthermore special applications could require a pre-screwed vial (e.g. in the tobacco industry).
- Pre-screwed vials are available with any of the short thread vials and any seal of your choice.



Art. No.	**11 14 1464**	**11 14 1906**	**11 14 1963**	**11 14 1841**	**11 14 1867**
Description	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0500)	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0500)	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0500)	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines (11 09 0520)	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines (11 09 0520)
	pre-screwed with	***pre-screwed with***	***pre-screwed with***	***pre-screwed with***	***pre-screwed with***
Seal	PP Short Thread Cap green, 6mm centre hole, Nat. Rubber red-orange/TEF transparent, 60° shore A, 1.0mm (09 15 1356)	PP Short Thread Cap blue, 6mm centre hole, RedRubber/PTFE beige, (***approved IM Quality****), 45° shore A, 1.0mm (09 15 1819)	PP Short Thread Cap blue, 6mm centre hole, Silicone white/PTFE blue, with slit, 55° shore A, 1.0mm (09 15 0869)	PP Short Thread Cap blue, 6mm centre hole, Silicone white/PTFE blue, with slit, 55° shore A, 1.0mm (09 15 0869)	PP UltraBond Seal blue, 6mm centre hole, Silicone beige/PTFE white, with slit (***improved IM Quality****), 45° shore A, 1.3mm (09 04 1534)
	100 pcs. per PP-Box				

3.7 Special 2in1 KITs

2in1 KITs with Short Thread Vials

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal	Alternative 2in1 KITs	
11 24 1050	**11 09 0500**	**09 15 0838**	**11 24 1143**	**11 24 1342**
2in1 KIT consisting of: 11 09 0500, 09 15 0838	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	PP Short Thread Cap blue, 6mm centre hole; UltraClean Silicone white/PTFE red, 55° shore A, 1.0mm	Same Seal in combination with 11 09 0519 (clear glass, with label + filling lines)	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
11 24 1051	**11 09 0500**	**09 15 0869**	**11 24 1238**	**11 24 1573**
2in1 KIT consisting of: 11 09 0500, 09 15 0869	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	PP Short Thread Cap blue, 6mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.0mm, with slit	Same Seal in combination with 11 09 0519 (clear glass, with label + filling lines)	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
11 24 1141	**11 09 0500**	**09 15 0481**	**11 24 1142**	**11 24 1091**
2in1 KIT consisting of: 11 09 0500, 09 15 0481	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	PP Short Thread Cap transparent, 6mm centre hole; UltraClean Silicone white/PTFE red, 55° shore A, 1.0mm	Same Seal in combination with 11 09 0519 (clear glass, with label + filling lines)	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
11 24 1622	**11 09 0500**	**09 04 1534**	**11 24 1860**	**11 24 1696**
2in1 KIT consisting of: 11 09 0500, 09 04 1534	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	UltraBond Seal blue, 6mm centre hole; Silicone beige/PTFE white, with slit, 45° shore A, 1.3mm ***improved IM Quality****	Same Seal in combination with 11 09 0519 (clear glass, with label + filling lines)	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
11 24 1140	**11 09 0500**	**09 15 0478**		**11 24 1778**
2in1 KIT consisting of: 11 09 0500, 09 15 0478	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	PP Short Thread Cap transparent, 6mm centre hole; Nat. Rubber red-orange/TEF transparent, 60° shore A, 1.0mm	Further 2in1 KITs can be made according to your wishes!	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
11 24 1049	**11 09 0500**	**09 15 0867**	**11 24 1929**	**11 24 1528**
2in1 KIT consisting of: 11 09 0500, 09 15 0867	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	PP Short Thread Cap blue, 6mm centre hole; Nat. Rubber red-orange/TEF transparent, 60° shore A, 1.0mm	Same Seal in combination with 11 09 0519 (clear glass, with label + filling lines)	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
11 24 1052	**11 09 0500**	**09 15 0868**	**11 24 1446**	**11 24 1930**
2in1 KIT consisting of: 11 09 0500, 09 15 0868	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	PP Short Thread Cap blue, 6mm centre hole; PTFE red/Silicone white/PTFE red, 45° shore A, 1.0mm	Same Seal in combination with 11 09 0519 (clear glass, with label + filling lines)	Same Seal in combination with 11 09 0520 (amber glass, with label + filling lines)
		100 pcs. each in one KIT		

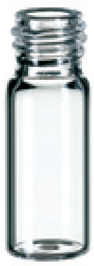
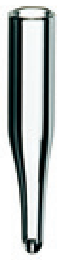
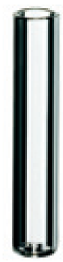
*improved instrument manufacturer quaility / approved Instrument Manufacturer Quality

4. Screw Neck ND10

The vials are preferentially used on instruments of the following manufacturers: Jasco, PerkinElmer, Shimadzu, Varian, Waters®, etc.
(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- Wide opening enables easy filling with viscous materials.
- Broad range of Micro-Inserts.
- Alternatively you can also look for Short Thread Vials in chapter 3.1.
- Any combination of 1.5ml Screw Neck Vial 10-425 with one of our 10mm PP Screw Seals can be obtained as a 2in1 KIT.
- Packed in a cleanroom class 10,000 which is a new hygienic standard for chromatography vials.
- Closed top Seals and replacement septa area available with immediate effect.

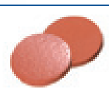
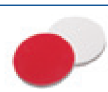
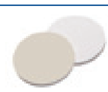
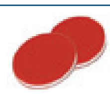
4.1 Screw Neck Vials ND10, wide opening, 10-425 thread and appropriate Micro-Inserts

							
Art. No.	**10 09 0743**	**10 09 1196**	**10 09 1197**	**06 09 0357**	**06 09 0669**	**06 09 0865**	**06 09 0866**
Description	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening, label + filling lines	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 15mm top ***SILANIZED 06 09 1240***	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1st hydrol. class, with assembled plastic spring ***SILANIZED 06 09 1343***	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, flat bottom
TFVol. (ml)	2.0	2.0	2.0	0.34	0.35	0.3	0.5
UsVol. (ml)	1.50	1.50	1.50	0.25	0.30	0.25	0.35
MWVol. (µl)	200	200	200	30	30	30	40
Res. Vol. (µl)	<120	<120	<120	<4	<4	<4	<8
	100 pcs. per PP-Box			10 x 100 pcs.per PP-Box			

4.2 PP Screw Seals ND10

						
Art. No.	**10 15 1256**	**10 15 1257**	**10 15 0744**	**10 15 1258**	**10 15 1328**	**10 15 1905**
Description Cap	PP Screw Cap black, 7mm centre hole	PP Screw Cap black, 7mm centre hole	PP Screw Cap black, 7mm centre hole	PP Screw Cap black, 7mm centre hole	PP Screw Cap black, 7mm centre hole	PP Screw Cap black, 7mm closed top
Septa Material	Nat. Rubber red-orange/TEF transparent	Silicone white/PTFE red UltraClean	Silicone white/PTFE beige	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit	Nat. Rubber red-orange/TEF transparent
Durometer	60° shore A	45° shore A	45° shore A	45° shore A	55° shore A	60° shore A
Thickness	1.3mm	1.3mm	1.5mm	1.0mm	1.5mm	1.3mm
	Further Screw Seals ND10 with closed/open top resp. With white Caps are available upon request!					
	100 pcs. per PE-Bag					

4.3 Septa 10mm

						
Art. No.	**10 02 0646**	**09 02 1259**	**09 02 1260**	**09 02 0723**	**09 02 1261**	**09 02 1327**
Septa Material	PTFE virginal (only unassembled)	Nat. Rubber red-orange/TEF transparent	Silicone white/ PTFE red	Silicone white/PTFE beige	PTFE red/Silicone white/PTFE red	Silicone white/PTFE blue, with slit
Durometer	53° shore D	60° shore A	45° shore A	45° shore A	45° shore A	55° shore A
Thickness	0.25mm	1.3mm	1.3mm	1.5mm	1.0mm	1.5mm
	1000 pcs. per PE-Bag					

4.4 PP Screw Caps ND10

	
10 08 0742	**10 08 1899**
Polypropylene Screw Cap black, 7mm centre hole	Polypropylene Screw Cap black, closed top
100 pcs. per PE-Bag	

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

5. Crimp Neck ND11

The vials are preferentially used on instruments of the following manufacturers: Agilent, Carlo Erba, CTC, DANI, Fisons, Gerstel, Jasco, PerkinElmer, Shimadzu, Spark, Thermo Scientific, Varian, etc.

(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- Vials with integrated Micro-Insert are also available now in clear and amber glass.
- Vials with a barcode label can be obtained as well as pre-crimped vials.
- Microliter Vials (11 09 0619/11 09 2276) for sample preparation (reactions, concentrations) or as an alternative for conical Micro-Vials resp. Crimp Neck Vials with Inserts.
- Use our TopSert Micro-Vial as a cost-effective alternative to glass vials with fused-in Micro-Inserts resp. to Micro-Insert with plastic spring! Their glass Micro-Insert is absolutely centered in the plastic mould and pressed firmly against the septa due to its slightly exceeding edges.
- Standard vials for GC and HPLC.

5.1 Crimp Neck Vials ND11, wide opening and Micro-Vials with Crimp Neck ND11

Art. No.	11 09 0356	11 09 0476	11 09 0477	11 09 0921	11 09 1956	11 09 2353	11 09 0619	11 09 2276
Description	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening small opening 11 09 0184 ***SILANIZED 11 09 2085***	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening, label + filling lines	1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines ***SILANIZED 11 09 1767***	Crimp Neck Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, clear glass, 1st hydrol. class, with label + filling lines ***"Top Bonded"***	Crimp Neck Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, amber glass, 1st hydrol. class, with label + filling lines ***"Top Bonded"***	Snap Ring Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1st hydrol. class ***"Base Bonded"***	1.1ml Microliter-Vial, 32 x 11.6mm, clear glass, 1st hydrol. class ***SILANIZED 11 09 2177***	0,9ml Total Microliter Snap Ring Vial ND11, 32 x 11.6mm, clear glass, 1st hydrolytic class
TFVol. (ml)	2.0	2.0	2.0	0.4	0.4	0.39	1.8	1.4
UsVol. (ml)	1.50	1.50	1.50	0.21	0.2	0.3	1.5	1.2
MWVol. (µl)	200	200	200	25	25	30	40	25
Res. Vol. (µl)	<100	<100	<100	<1	<1	<3	<8	<1
100 pcs. per PP-Box								

5.1 Crimp Neck Vials ND11 (cont.)

Art. No.	11 09 0486	11 09 0415	11 14 1190	11 14 1656
Description	0.9ml Micro-Vial, 32 x 10mm, clear glass, 1st hydrol. class, conical	1.1ml Micro-Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, conical	TopSert TPX Snap Ring Vial, 32 x 11.6mm, clear, with integrated 0.2ml Glass Micro-Insert ***SILANIZED 11 14 1266***	TopSert TPX Snap Ring Vial, 32 x 11.6mm, amber, with integrated 0.2ml Glass Micro-Insert ***SILANIZED 11 14 1695***
TFVol. (ml)	1.1	1.3	0.35	0.35
UsVol. (ml)	0.9	1.1	0.2	0.2
MWVol. (µl)	30	30	30	30
Res. Vol. (µl)	<2	<4	<4	<4
	10 x 100 pcs. per PP-Box	100 pcs. per PP-Box		

5.2 Micro-Inserts for Crimp Neck Vials ND11 with wide opening

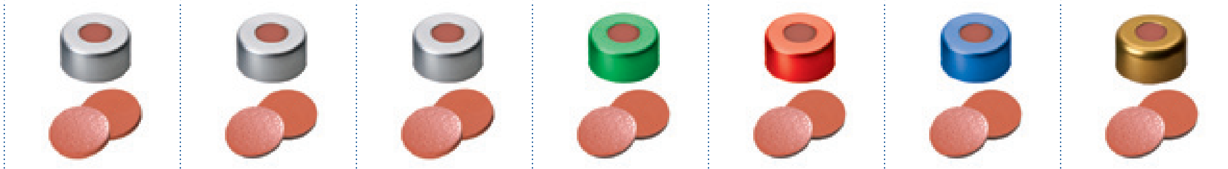
Art. No.	06 09 0357	06 09 0669	06 09 0865	06 09 0866
Description	Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 15mm top ***SILANIZED 06 09 1240***	Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 12mm top	Micro-Insert, 29 x 5.7mm, clear glass, 1st hydrol. class, with assembled plastic spring ***SILANIZED 06 09 1343***	Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, flat bottom
TFVol. (ml)	0.34	0.35	0.3	0.5
UsVol. (ml)	0.25	0.30	0.25	0.35
MWVol. (µl)	30	30	30	40
Res. Vol. (µl)	<4	<4	<4	<8
10 x 100 pcs.per PP-Box				

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

5.3 Aluminum Crimp Seals ND11

5.3.1 Natural Rubber/TEF Seals

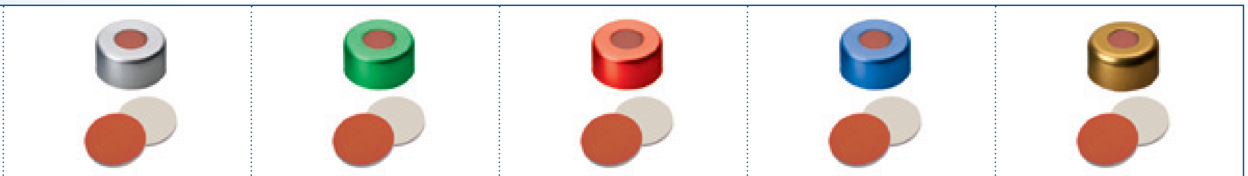
- Temperature resistant from -40°C up to 120°C.
- Standard seal for GC and HPLC.
- Ideal for multiple injections due to high resealability.
- Three layer septa of Natural Rubber/Butyl/TEF combines the good physical properties of Nat. Rubber (resealability) with the good chemical properties of Butyl (cleanliness).



Art. No.	11 03 0209	11 03 0300	11 03 0900	11 03 0301	11 03 0302	11 03 0303	11 03 0304
Description Cap	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap green lacquered, 5.5mm centre hole	Aluminum Cap red lacquered, 5.5mm centre hole	Aluminum Cap blue lacquered, 5.5mm centre hole	Aluminum Cap gold lacquered, 5.5mm centre hole
Septa Material	Nat. Rubber red-orange/ TEF transparent ***approved IM Quality****	Nat. Rubber red-orange/ Butyl red/TEF transparent	Nat. Rubber red-orange/ TEF transparent	Nat. Rubber red-orange/ Butyl red/TEF transparent	Nat. Rubber red-orange/ Butyl red/TEF transparent	Nat. Rubber red-orange/ Butyl red/TEF transparent	Nat. Rubber red-orange/ Butyl red/TEF transparent
Durometer	60° shore A	45° shore A	60° shore A	45° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.3mm	1.0mm	1.0mm	1.0mm	1.0mm
	100 pcs. per PE-Bag						

5.3.2 RedRubber/PTFE Seals

- Temperature resistant from –40°C up to 110°C.
- softer alternative to Natural Rubber/TEF and Butyl/PTFE.
- Cleaner than Natural Rubber or Butyl; low fragmentation.
- RedRubber is a synthetic rubber.



Art. No.	11 03 1875	11 03 1984	11 03 1985	11 03 1986	11 03 1987
Description Cap	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap green lacquered, 5.5mm centre hole	Aluminum Cap red lacquered, 5.5mm centre hole	Aluminum Cap blue lacquered, 5.5mm centre hole	Aluminum Cap gold lacquered, 5.5mm centre hole
Septa Material	RedRubber/PTFE beige ***approved Instrument Manufacturer Quality***				
Durometer	45° shore A	45° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.0mm	1.0mm	1.0mm
	100 pcs. per PE-Bag				

5.3.3 Silicone/PTFE Seals

- Temperature resistant from -60°C up to 200°C.
- Much cleaner than Natural Rubber, RedRubber or Butyl.
- Cross-slitted liner as penetration aid and for low coring, but also for avoiding vacuum in the vial in case of multiple injections.

Art. No.	11 03 0247	11 03 0362	11 03 0885	11 03 0196	11 03 0464	11 03 1625	11 03 0666	11 03 0667	11 03 1624
Description Cap	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap green lacquered, 5.5mm centre hole	Aluminum Cap red lacquered, 5.5mm centre hole	Aluminum Cap blue lacquered, 5.5mm centre hole	Aluminum Cap gold lacquered, 5.5mm centre hole
Septa Material	Silicone white/PTFE red Ultra*Clean*	Silicone cream/ PTFE red	Silicone dark blue/ PTFE white	PTFE red/ Silicone white/ PTFE red	Silicone white/PTFE blue, cross-slitted	Silicone white/PTFE red Ultra*Clean*	Silicone white/PTFE red Ultra*Clean*	Silicone white/PTFE red Ultra*Clean*	Silicone white/PTFE red Ultra*Clean*
Durometer	45° shore A	55° shore A	45° shore A	45° shore A	55° shore A	45° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.3mm	1.5mm	1.3mm	1.0mm	1.5mm	1.3mm	1.3mm	1.3mm	1.3mm
	100 pcs. per PE-Bag								

TIP

Stainless Steel Crimping Tools please see chapter 18.3 on page 55.

TIP

Crimping Tools please see chapter 18 onwards on page 54.

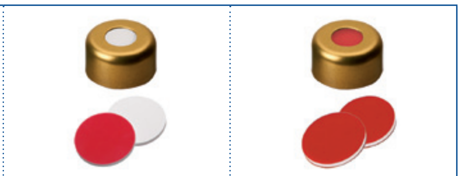
*approved Instrument Manufacturer Quality

5.3.4 Other Aluminum Crimp Seals

- PTFE is very inert and high temperature resistant mainly for uncritical HPLC analysis.
- Butyl as synthetic rubber is much cleaner than Natural Rubber.
- Butyl is temperature resistant from –40°C up to 120°C.
- Total Phthalate Free Seal (TPF Seal), Septa material free of any elastomers and halogens.

Art. No.	11 03 2519	11 03 2578	11 03 0339	11 03 1641	11 03 1663	11 03 0720	11 03 0407
Description Cap	11mm TPF Combination Seal: Aluminum Cap, clear lacquered, 5.5 mm centre hole	11mm TPF Combination Seal: Aluminum Cap, clear lacquered, 5.5 mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole, roll grove	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole
Septa Material	Aluminum liner, (sealed by an additional assembled ring)	PTFE virginal (sealed by an additional assembled ring)	PTFE virginal	Butyl red/PTFE grey	PTFE grey/Butyl red/ PTFE grey	Viton black	Viton black
Durometer		53° shore D	53° shore D	55° shore A	55° shore A	70° shore A	70° shore A
Thickness	0.06mm	0.25mm	0.25mm	1.3mm	1.3mm	1.0mm	1.5mm
	All before-mentioned crimp seals are also available with gold, green, blue and red caps (with the exception of 11 03 0339, 11 03 2519 and 11 03 2578))						
	100 pcs. per PE-Bag						

5.4 Magnetic Crimp Seals ND11 (for CTC PAL + Thermo Scientific TriPlus Autosampler)



Art. No.	11 03 0318	11 03 0332
Description Cap	Magnetic Cap, gold lacquered, 5mm centre hole	Magnetic Cap, gold lacquered, 5mm centre hole
Septa Material	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/PTFE red
Durometer	45° shore A	45° shore A
Thickness	1.3mm	1.0mm
	100 pcs. per PE-Bag	

5.5 Other Combination Seals for Crimp Neck ND11

Art. No.	11 08 1676	13 15 0553	13 15 0996
Description Cap	PE Push-On Cap, blue	PE-Cap, transparent, 13 x 7.5mm, 4.5mm centre hole	PE-Cap, transparent, 13 x 7.5mm, 4.5mm centre hole
Septa Material	with thinned penetration point	Nat. Rubber red-orange/TEF transparent	Silicone white/PTFE red UltraClean
Durometer		60° shore A	55° shore A
Thickness		1.0mm	1.0mm
	100 pcs. per PE-Bag		

5.6 Septa 11mm

Art. No.	11 02 0176	11 02 0534	11 02 1145	11 02 1876	11 02 1634	11 02 1662
Description	PTFE virginal	Nat. Rubber red-orange/ TEF transparent	Nat. Rubber red-orange/ TEF transparent, ***tested by VWR (Merck®)/Hitachi***	RedRubber/PTFE beige ***approved IM Quality****	Butyl red/PTFE grey	PTFE grey/Butyl red/ PTFE grey
Durometer	53° shore D	60° shore A	60° shore A	45° shore A	55° shore A	55° shore A
Thickness	0.25mm	1.0mm	1.3mm	1.0mm	1.3mm	1.3mm
	1000 pcs. per PE-Bag					

Art. No.	11 02 0104	11 02 0140	11 02 0882	11 02 0115	11 02 0446
Description	Silicone white/PTFE red	Silicone cream/PTFE red	Silicone dark blue/PTFE white	PTFE red/Silicone white/PTFE red	Silicone white/PTFE blue, cross slitted
Durometer	45° shore A	55° shore A	45° shore A	45° shore A	55° shore A
Thickness	1.3mm	1.5mm	1.3mm	1.0mm	1.5mm
	Against a small surcharge we also sell in smaller packaging units! (Minimum order quantity 1,000 pieces)				
	1000 pcs. per PE-Bag				

5.7 Crimp Neck Vials ND11, wide opening, with pre-crimped Aluminum Seals ND11

Art. No.	11 31 1469	11 31 1968	11 31 1730	11 31 1221	11 31 1596
Description Vial	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines (11 09 0477)
	pre-crimped	***pre-crimped***	***pre-crimped***	***pre-crimped***	***pre-crimped***
Description of pre-crimped Seal	Aluminum Cap clear lacquered, 5.5mm centre hole, Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.0mm (11 03 0209) (***approved IM Quality****)	Aluminum Cap clear lacquered, 5.5mm centre hole, Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.3mm (11 03 0900)	Aluminum Cap clear lacquered, 5.5mm centre hole, Nat. Rubber red-orange/ Butyl red/TEF transparent, 45° shore A, 1.0mm (11 03 0300)	Aluminum Cap blue lacquered, 5.5mm centre hole, Nat. Rubber red-orange/ Butyl red/TEF transparent, 45° shore A, 1.0mm (11 03 0303)	Aluminum Cap clear lacquered, 5.5mm centre hole, Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.0mm (11 03 0209) (***approved IM Quality****)
	100 pcs. per PP-Box				

*approved Instrument Manufacturer Quality

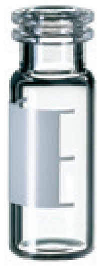
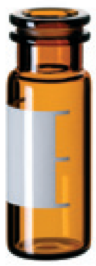
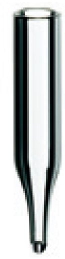
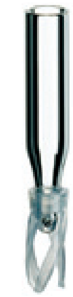
6. Snap Ring ND11

The vials are preferentially used on instruments of the following manufacturers: Agilent, CTC, DANI, Dionex, Jasco, Shimadzu, Spark, Thermo Scientific, Varian, VWR (Merck®)/Hitachi, Waters®, etc.

(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- We recommend this vial-/closure system for HPLC applications only.
- Universally usable vials for almost all autosamplers, even for those with robotic handling.
- Micro-Inserts can be delivered pre-assembled in vials.
- Vials can also be crimped with a standard 11mm Aluminum Crimp Seal, as the two snap ring lips have the same height as a crimp neck
- Wide opening enables easy filling with viscous materials.

6.1 Snap Ring Vials ND11, wide opening and appropriate Micro-Inserts

									
Art. No.	**11 09 0627**	**11 09 0644**	**11 09 0645**	**11 09 2276**	**11 09 2353**	**06 09 0357**	**06 09 0669**	**06 09 0865**	**06 09 0866**
Description	1.5ml Snap Ring Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening ***SILANIZED 11 09 2173***	1.5ml Snap Ring Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, wide opening, label + filling lines	1.5ml Snap Ring Vial, 32 x 11.6mm, amber glass, 1st hydrol. class, wide opening, label + filling lines ***SILANIZED 11 09 2189***	0,9ml Total Microliter Snap Ring Vial ND11, 32 x 11.6mm, clear glass, 1st hydrolytic class	Snap Ring Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1st hydrolytic class, ***"Base Bonded"***	Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 15mm top ***SILANIZED 06 09 1240***	Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 12mm top	Micro-Insert, 29 x 5.7mm, clear glass, 1st hydrol. class, with assembled plastic spring ***SILANIZED 06 09 1343***	Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, flat bottom
TFVol. (ml)	1.90	1.90	1.90	1.40	0.40	0.34	0.35	0.3	0.5
UsVol. (ml)	1.5	1.5	1.5	1.2	0.3	0.25	0.30	0.25	0.35
MWVol. (µl)	200	200	200	25	30	30	30	30	40
Res. Vol. (µl)	<100	<100	<100	<1	<3	<4	<4	<4	<8
	100 pcs. per PP-Box					10 x 100 pcs.per PP-Box			

6.2 Micro-Vials with Snap Ring ND11

		
Art. No.	**11 14 1190**	**11 14 1656**
Description	TopSert TPX Snap Ring Vial, 32 x 11.6mm, clear, with integrated 0.2ml Glass Micro-Insert ***SILANIZED: 11 14 1266***	TopSert TPX Snap Ring Vial, 32 x 11.6mm, amber, with integrated 0.2ml Glass Micro-Insert ***SILANIZED: 11 14 1695***
	100 pcs. per PP-Box	

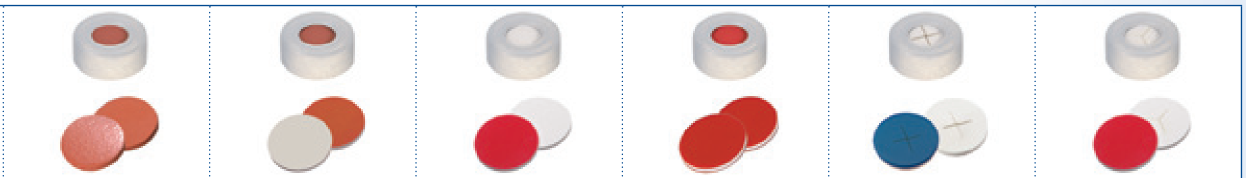
- Less cost intensive alternative to Glass Vials with integrated Micro-Insert respectively alternative to Micro-Inserts with Polymere spring.
- More rigid than the fragile Glass Vials with fused-in Micro-Inserts.
- Absolutely centric and firm fit of the Micro-Insert.
- Excellent sealing of the slightly exceeding Micro-Insert by the septa.
- Good transparency and chemical resistance of the clear TPX vials. Amber TPX vials can be used for light-sensitive samples.
- Safe standing position; vial can be lifted by the plastic flanges.
- Standard dimensions of the Vial and the Micro-Insert guarantee a trouble-free run in the autosampler.
- Packed with 100 pieces in a PP-Box or in combination with seals as a 2in1 KIT.

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

6.3 PE Snap Ring Seals ND11

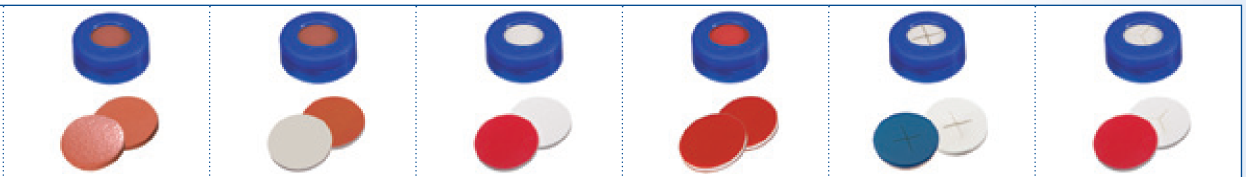
- Synthetic RedRubber/PTFE material as a cost-effective match of the Instrument Manufacturer Quality. In contrast to Natural Rubber it is not suitable for multiple injections, however softer for a safe penetration.
- Snap ring cap with the design of a crimp cap; therefore suitable for robotic handling.
- Easy way of closing the vial: time-, cost- and energy-saving.
- Vials can also be sealed with an Aluminum Crimp Seal ND11.
- Snap ring caps are also available in a soft quality with transparent or blue caps. Soft caps are more convenient in handling (pushing on/removal), however, they are less tight than hard caps.

6.3.1 With PE Snap Ring Cap transparent, 6mm centre hole, hard or soft version



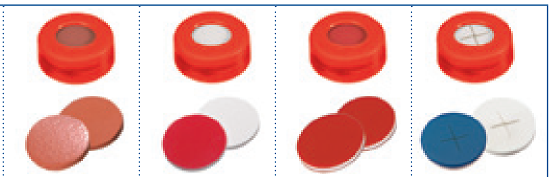
Art. No. Hard Cap	11 15 0635	11 15 2106	11 15 0637	11 15 0636	11 15 0650	11 15 2045
Art. No. Soft Cap	11 15 1850	11 15 1983	11 15 1852	11 15 1851	11 15 1853	11 15 2046
Septa Material	Nat. Rubber red-orange/ TEF transparent	RedRubber/PTFE beige ***instrument manuf. quality***	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, cross-slitted	Silicone white/PTFE red, pre-cut (Y)
Durometer	60° shore A	45° shore A	45° shore A	45° shore A	55° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.3mm	1.0mm	1.0mm	1.3mm
100 pcs. per PE-Bag						

6.3.2 With PE Snap Ring Cap blue, 6mm centre hole, hard or soft version



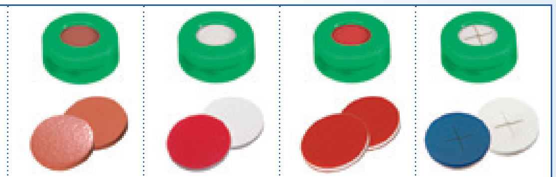
Art. No. Hard Cap	11 15 1267	11 15 2107	11 15 1151	11 15 1268	11 15 1269	11 15 2047
Art. No. Soft Cap	11 15 1856	11 15 1817	11 15 1854	11 15 1857	11 15 1858	11 15 2048
Septa Material	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige, ***instrument manuf. quality***	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, cross-slitted	Silicone white/PTFE red, pre-cut (Y)
Durometer	60° shore A	45° shore A	45° shore A	45° shore A	55° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.3mm	1.0mm	1.0mm	1.3mm
100 pcs. per PE-Bag						

6.3.3 With PE Snap Ring Cap red, 6mm centre hole, only hard version



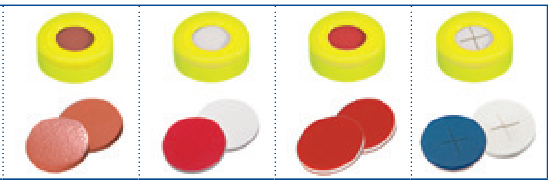
Art. No. Hard Cap	11 15 1323	11 15 1325	11 15 1324	11 15 1326
Septa Material	Nat. Rubber red-orange/ TEF transparent	Silicone white/ PTFE red UltraClean	PTFE red/ Silicone white/ PTFE red	Silicone white/ PTFE blue, cross-slitted
Durometer	60° shore A	45° shore A	45° shore A	55° shore A
Thickness	1.0mm	1.3mm	1.0mm	1.0mm
100 pcs. per PE-Bag				

6.3.4 With PE Snap Ring Cap green, 6mm centre hole, only hard version



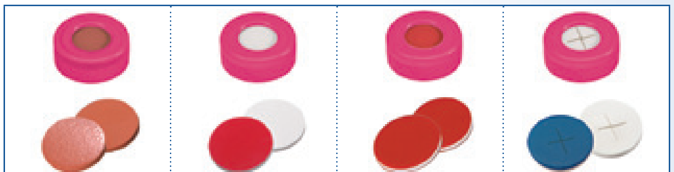
Art. No. Hard Cap	11 15 1555	11 15 2017	11 15 2018	11 15 1794
Septa Material	Nat. Rubber red-orange/ TEF transparent	Silicone white/ PTFE red UltraClean	PTFE red/ Silicone white/ PTFE red	Silicone white/ PTFE blue, cross-slitted
Durometer	60° shore A	45° shore A	45° shore A	55° shore A
Thickness	1.0mm	1.3mm	1.0mm	1.0mm
100 pcs. per PE-Bag				

6.3.5 With PE Snap Ring Cap yellow, 6mm centre hole, only hard version



Art. No. Hard Cap	11 15 1556	11 15 1886	11 15 1677	11 15 1793
Septa Material	Nat. Rubber red-orange/TEF transparent	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/PTFE red	Silicone white/PTFE blue, cross-slitted
Durometer	60° shore A	45° shore A	45° shore A	55° shore A
Thickness	1.0mm	1.3mm	1.0mm	1.0mm
100 pcs. per PE-Bag				

6.3.6 With PE Snap Ring Cap pink, 6mm centre hole, only soft version



11 15 2474	11 15 2476	11 15 2475	11 15 2477
Nat. Rubber red-orange/ TEF transparent	Silicone white/PTFE red UltraClean	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, cross-slitted
60° shore A	45° shore A	45° shore A	55° shore A
1.0mm	1.3mm	1.0mm	1.0mm
100 pcs. per PE-Bag			

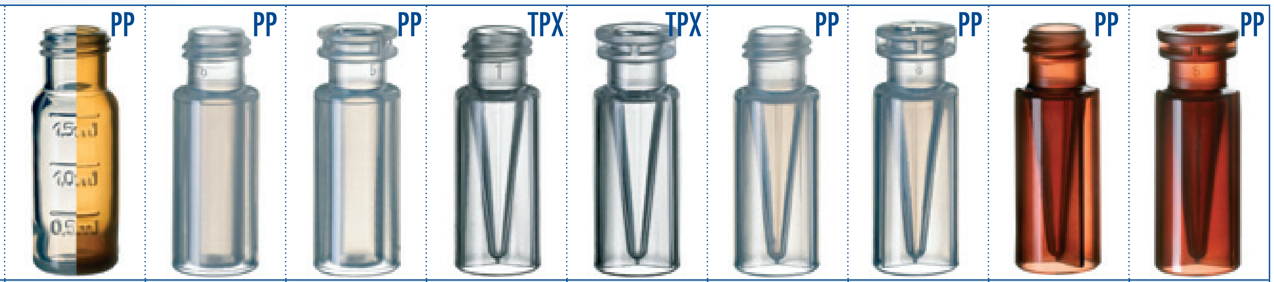
Coloured PE Snap Ring Caps are also available with RedRubber/PTFE layer.

*approved instrument manufacturer quaility

7. Plastic Vials ND9 and Plastic Micro-Vials ND9 + ND11

- Main applications for Plastic vials are atomic absorption, water and protein analysis, capillary electrophoresis, ion chromatography etc.
- 1.5ml Polypropylene Short Thread Vial with slightly concave shaped bottom. Usable in HPLC as a possible alternative to silanized glass vials for pH-sensitive and aqueous samples.
- TPX has a crystal clear transparency and good chemical resistance.
- Any combination of our plastic vials with one of our seals can be obtained as a 2in1 KIT.
- Also available our so-called TopSerts Vials: transparent and amber TPX Micro-Vials with a Glass Insert (Pages 21 and 32).
- Special Push-On Cap with thinner penetration point made of Polyethylene for Snap Ring Vials and Crimp Neck Vials ND11.

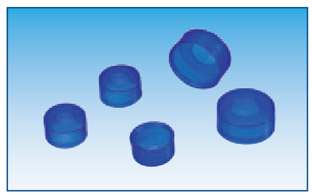
7.1 Plastic Vials ND9 and Plastic Micro-Vials ND9 + ND11



	PP	PP	PP	TPX	TPX	PP	PP	PP	PP
Art. No.	11 19 1205 11 19 1516	11 19 1706	11 19 1707	11 19 1021	11 19 1022	11 19 0932	11 19 0933	11 19 1216	11 19 1217
Description	1.5ml PP Short Thread Vial, transparent/amber with filling lines, 32 x 11.6mm, slightly concave shaped bottom	0.7ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	0.7ml PP Snap Ring Micro-Vial, transparent, 32 x 11.6mm	0.3ml TPX Short Thread Micro-Vial, crystal clear, 32 x 11.6mm	0.3ml TPX Snap Ring Micro-Vial, crystal clear, 32 x 11.6mm	0.3ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	0.3ml PP Snap Ring Micro-Vial, transparent, 32 x 11.6mm	0.3ml PP Short Thread Micro-Vial, amber, 32 x 11.6mm	0.3ml PP Snap Ring Micro-Vial, amber, 32 x 11.6mm
TFVol. (ml)	1.85	0.87	0.9	0.4	0.4	0.4	0.4	0.4	0.4
UsVol. (ml)	1.50	0.60	0.64	0.25	0.25	0.25	0.25	0.25	0.25
MWVol. (µl)	200	150	50	30	30	30	30	30	30
Res. Vol. (µl)	<110	<80	<25	<4	<4	<4	<4	<4	<4
100 pcs. per PE-Bag									

7.2 Seals for Plastic Vials ND9 and Plastic Micro-Vials ND9 + ND11

Type of Seal	Chapter	Page(s)
Short Thread Seals ND9	3.4	22-24
Snap Ring Seals ND11	6.3	31
Crimp Seals ND11	5.3	28-29
11 08 1676	5.5	29



7.3 Special 2in1 KITs

2in1 KITs for Waters®

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal	Alternative 2in1 KITs	
11 24 1130	**11 19 0932**	**09 15 0869**	**11 24 1476**	**11 24 1643**
2in1 KIT consisting of: 11 19 0932, 09 15 0869	0.3ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	PP Short Thread Cap blue, 6mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.0mm, with slit	Same Vial in combination with 09 15 0838 (Silicone white/PTFE red, 55° shore A, 1.0mm)	Same Vial in combination with 09 04 1534 (UltraBond Seal, slitted)
11 24 1865	**11 19 1706**	**09 04 1533**		
2in1 KIT consisting of: 11 19 1706, 09 04 1533	0.7ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	UltraBond Seal, blue, 6mm centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm, ***improved IM Quality****		
11 24 1866	**11 19 1706**	**09 04 1534**		
2in1 KIT consisting of: 11 19 1706, 09 04 1534	0.7ml PP Short Thread Micro-Vial, transparent, 32 x 11.6mm	UltraBond Seal, blue, 6mm centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm, with slit, ***improved IM Quality****		
	Further 2in1 KITs are available upon request!		Packaging Unit: 100 pcs. each in one KIT	

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl); *improved Instrument Manufacturer Quality

8. Screw Neck ND13

The vials are preferentially used on instruments of the following manufacturers: Dionex, Shimadzu, Spark, Varian, VWR (Merck®)/Hitachi, Waters® (Wisp 48 Position Carousel), etc.

(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- Vials are packed in a cleanroom class 10,000 in reclosable, tamper-proof evident PP-Boxes.
- Any combination of 4ml Screw Neck Vial ND13 with one of our 13mm PP Screw Seals can be obtained as a 2in1 KIT (see chapter 8.5).
- Upon request barcode labelled vials can also be supplied.
- For storage purposes also available with closed top screw seals.
- Acrylic vial racks with 40 cavities for 4ml vials (s.chapter 18.1).

8.1 Screw Neck Vials ND13 and appropriate Micro-Inserts

Art. No.	13 09 0222	13 09 1335	13 09 0280	13 09 1336	40 09 0146	50 13 0147
Description	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class, label + filling lines	4ml Screw Neck Vial, 45 x 14.7mm, amber glass, 1st hydrol. class	4ml Screw Neck Vial, 45 x 14.7mm, amber glass, 1st hydrol. class, label + filling lines	0.3ml Micro-Insert, 40 x 6mm, clear glass, 1st hydrol. class, 15mm top ***Metal Spring required!***	Spring 50 x 7.5mm For Micro-Insert 40 09 0146!
TFVol. (ml)	5	5	5	5	0.5	
UsVol. (ml)	4.1	4.1	4.1	4.1	0.4	
MWVol. (µl)	800	800	800	800	40	
Res. Vol. (µl)	<400	<400	<400	<400	<9	
	100 pcs. per PP-Box				10 x 100 pcs. per PP-Box	100 pcs. per PE-Bag

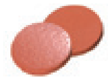
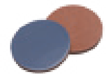
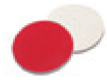
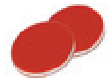
8.2 PP Screw Seals ND13

- Ready to use combination seals; no time-consuming and "tricky" assembly.
- No contamination of the liner with sweat/fat that normally is caused by manual assembly.
- Available as closed or open top screw seals with 13-425 thread.
- Tamper-proof evident and reclosable zip-lock bags ensure product safety.
- Broad variety of different septa materials for almost all applications.

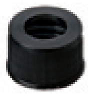
Art. No.	13 15 0456	13 15 1639	13 15 0815	13 15 0887	13 15 0292	13 15 1293	13 15 0439	13 15 1638	13 15 0648
Description Cap	Polypropylene Screw Cap black, 8.5mm centre hole	Polypropylene Screw Cap black, 8.5mm centre hole	Polypropylene Screw Cap black, 8.5mm centre hole	Polypropylene Screw Cap black, 8.5mm centre hole	Polypropylene Screw Cap black, 8.5mm centre hole	Polypropylene Screw Cap black, 8.5mm centre hole	Polypropylene Screw Cap black, closed top	Polypropylene Screw Cap black, closed top	Polypropylene Screw Cap black, closed top
Septa Material	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone cream/ PTFE red	Silicone dark blue/ PTFE white	PTFE red/Silicone white/PTFE red	Silicone white/PTFE blue, cross-slitted	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone cream/ PTFE red
Durometer	60° shore A	55° shore A	55° shore A	45° shore A	45° shore A	55° shore A	60° shore A	55° shore A	55° shore A
Thickness	1.3mm	1.3mm	1.5mm	1.3mm	1.0mm	1.5mm	1.3mm	1.3mm	1.5mm
	Further Screw Seals ND13 with closed/open top caps are available upon request!								
100 pcs. per PE-Bag									

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

8.3 Septa 12mm

						
Art. No.	**12 02 0168**	**12 02 0223**	**12 02 1635**	**12 02 0143**	**12 02 0463**	**12 02 0322**
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone cream/PTFE red	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue
Durometer	53° shore D	60° shore A	55° shore A	55° shore A	45° shore A	55° shore A
Thickness	0.25mm (only unassembled)	1.3mm	1.3mm	1.5mm	1.0mm	1.5mm cross-slitted
	Further 12mm Septa are available upon request!					
1000 pcs. per PE-Bag						

8.4 PP Screw Caps ND13

				
Art. No.	**13 08 0166**	**13 08 0336**	**13 08 0639**	**13 08 0452**
Cap	Polypropylene Screw Cap, black, 8.5mm centre hole	Polypropylene Screw Cap, black, closed top	Polypropylene Screw Cap, white, 8.5mm centre hole	Polypropylene Screw Cap, white, closed top
100 pcs. per PE-Bag				

8.5 Special 2in1 KITs

3in1 KITs for VWR (Merck®)/Hitachi and Waters® Autosampler

Art. No. 3in1 KIT	Art. No. Vial	Art. No. Cap	Art. No. Septa
13 28 1071	**13 09 0222**	**13 08 0166**	**12 02 0168**
3in1 KIT consisting of: 13 09 0222, 13 08 0166, 12 02 0168	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	Polypropylene Screw Cap, black, 8.5mm centre hole	PTFE virginal, 53° shore D, 0.25mm
13 28 1076	**13 09 0280**	**13 08 0166**	**12 02 0168**
3in1 KIT consisting of: 13 09 0280, 13 08 0166, 12 02 0168	4ml Screw Neck Vial, 45 x 14.7mm, amber glass, 1st hydrol. class	Polypropylene Screw Cap, black, 8.5mm centre hole	PTFE virginal, 53° shore D, 0.25mm
100 pcs. each in one KIT			

Other 2in1 KITs

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal	Alternative 2in1 KITs
13 28 1067	**13 09 0222**	**13 15 0456**	**13 28 1072**
2in1 KIT consisting of: 13 09 0222, 13 15 0456	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	PP Screw Cap, black, 8.5mm centre hole; Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.3mm	Same Seal in combination with 13 09 0280 (amber glass)
13 28 1069	**13 09 0222**	**13 15 0815**	**13 28 1074**
2in1 KIT consisting of: 13 09 0222, 13 15 0815	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	PP Screw Cap, black, 8.5mm centre hole; Silicone cream/PTFE red, 55° shore A, 1.5mm	Same Seal in combination with 13 09 0280 (amber glass)
13 28 1070	**13 09 0222**	**13 15 0292**	**13 28 1075**
2in1 KIT consisting of: 13 09 0222, 13 15 0292	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	PP Screw Cap, black, 8.5mm centre hole; PTFE red/Silicone white/ PTFE red, 45° shore A, 1.0mm	Same Seal in combination with 13 09 0280 (amber glass)
13 28 1541	**13 09 0222**	**13 15 1293**	Further 2in1 KITs can be made according to your wishes!
2in1 KIT consisting of: 13 09 0222, 13 15 1293	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	PP Screw Cap, black, 8.5mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.5mm cross-slitted	
100 pcs. each in one KIT			

Further 2in1 KITs are available upon request!

TIP

For Vial Racks please see chapter 19.1 on page 56

TIP

Upon request vials with a barcode label are available

TIP

Any combination of 4ml Vials with one of the appropriate seals can be supplied as 2in1 KIT!

TIP

For HPLC Syringe Filters please see chapter 14 on pages 50 and 51

9. Shell Vials

The vials are preferentially used on instruments of the following manufacturers: Alcott, Gilson, Shimadzu, Waters® (Wisp 96 respectively 48 Position Carousel)
(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- A handy and inexpensive vial/closure combination for uncritical analyses.
- 08 14 1168 + 08 14 1169 with soft style plug for Waters® and Shimadzu.
- PE-Plugs of 08 14 0513/08 14 0595; 11 14 0544/11 14 0545 and 15 14 0548/ 15 14 0562 may be used for the fixation of a Micro-Insert; thus no springs are required for their usage.
- Star-shaped diaphragm enables easy penetration of the PE-Plug.
- Recommended for HPLC usage.
- For the 1ml Shell Vials a plug with and one without insertion barrier for Micro-Inserts is available. The one without barrier shows a better valve effect with regard to the formation of a vacuum.
- Shell vials and the appropriate plugs can also be supplied as a 2in1 KIT.

SPECIFICATION Vials & Closures APPROVED QUALITY CERTIFIED

9.1 Shell Vials 1ml and 4ml and appropriate Micro-Inserts

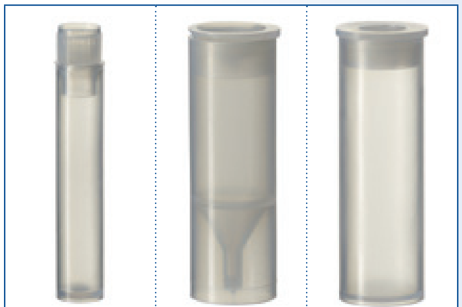
Art. No.	08 14 0641	08 14 1168*	08 14 1169*	05 09 0706	15 14 0548	15 14 0562	06 09 0651
Description	1ml Shell Vial, 35 x 7.8mm, clear glass, 1st hydrol. class, 6mm PE-Plug, transparent, for ALCOTT	1ml Shell Vial, 40 x 8.2mm, clear glass, 1st hydrol. class, 8mm PE-Plug, soft, without insertion barrier for Micro-Insert, transparent for Waters® Wisp 96 Pos. Carousel, Shimadzu	1ml Shell Vial, 40 x 8.2mm, amber glass, 1st hydrol. class, 8mm PE-Plug, soft, without insertion barrier for Micro-Insert, transparent for Waters® Wisp 96 Pos. Carousel, Shimadzu	0.1ml Micro-Insert, 34 x 5mm, clear glass, 1st hydrol. class, 13mm top (only in comb. with 08 14 0513 + 08 14 0595)	4ml Shell Vial, 44.6 x 14.65mm, clear glass, 1st hydrol. class, 15mm PE-Plug, transparent for Waters® Wisp 48 Pos. Carousel	4ml Shell Vial, 44.6 x 14.65mm, amber glass, 1st hydrol. class, 15mm PE-Plug, transparent for Waters® Wisp 48 Pos. Carousel	0.3ml Micro-Insert, 43.45 x 6mm, clear glass, 1st hydrol. class, 13mm top
TFVol. (ml)	1.1	1.4	1.4	0.2	5.5	5.5	0.4
UsVol. (ml)	0.8	1	1	0.15	4	4	0.3
MWVol. (µl)	60	100	100	25	1000	1000	50
Res. Vol. (µl)	<25	<80	<80	<0.1	<800	<800	<8
	100 pcs. per PP-Box (Vials) / 100 pcs. per PE-Bag (Plugs)			10 x 100 pcs. per PP-Box	100 pcs. per PP-Box (Vials) / 100 pcs. per PE-Bag (Plugs)		10 x 100 pcs. per PP-Box

*In case a Micro-Insert is used in combination with the shell vial, please use 08 14 0513 respectively 08 14 0595, as they have an insertion barrier for Micro-Inserts. However, please note that flexibility of the plug with insertion barrier is reduced, so that pushing of the plug into the vial as well as penetration is more difficult.

9.2 Shell Vials 2ml and appropriate Micro-Inserts

Art. No.	11 14 0544	11 14 0545	06 09 0357	06 09 0669	06 09 0866
Description	2ml Shell Vial, 31.5 x 11.6mm, clear glass, 1st hydrol. class, 12mm PE-Plug, transparent for various instruments	2ml Shell Vial, 31.5 x 11.6mm, amber glass, 1st hydrol. class, 12mm PE-Plug, transparent for various instruments	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 15mm top ***SILANIZED: 06 09 1240***	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, 12mm top	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1st hydrol. class, flat bottom
TFVol. (ml)	2.3	2.3	0.34	0.35	0.5
UsVol. (ml)	1.5	1.5	0.25	0.30	0.35
MWVol. (µl)	200	200	30	30	40
Res. Vol. (µl)	<100	<100	<4	<4	<8
	100 pcs. per PP-Box (Vials) / 100 pcs. per PE-Bag (Plugs)		10 x 100 pcs. per PP-Box		

9.3 PP Shell Vials 1ml, 3ml and 4ml



Art. No.	08 34 2194	15 34 2199	15 34 2197
Description	1ml PP Shell Vial, 40 x 8mm, clear; 8mm PE Plug, transparent	3ml PP Shell Vial, 44.6 x 14.65mm, clear, with inner cone; 15mm PE Plug, transparent	4ml PP Shell Vial, 44.6 x 14.65mm, clear; 15mm PE Plug, transparent
TFVol. (ml)	1.28	4.00	5.5
UsVol. (ml)	1.05	3	4
MWVol. (µl)	50	40	1000
Res. Vol. (µl)	<25	<8	<800
	100 pcs. per PE-Bag		

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

10. Headspace ND20 (ND18)

Chapter 10 "Headspace" of our catalogue has been completely redesigned, in order to simplify the identification of suitable consumables for a certain instrument. Especially in Headspace this is extremely difficult, as besides numerous vial types there are also different cap types required depending on the autosampler.

While you can take the suitable vial type for the different instrument manufacturers from the upper part of the double paged chart, you'll find the appropriate recommended closures in the middle section. The various cap types that have to be considered are colour-coded. At the bottom of the page a break-down of the indicated part numbers according to the colour-coded cap types and the different septa materials is listed. For better illustration of the septa type you'll find at the left side of page 38 (20mm septa for crimp caps) resp. at the right side of page 39 (17.5mm septa for magnetic Precision Thread Caps) photographs and article descriptions of them. Of course you can also take appropriate recommendations from our Quick-Reference-Charts on pages 70 to 75.

IMPORTANT SAFETY TIP:

As Headspace vials have to withstand high internal pressure, almost all vials on the next page have a wall thickness of 1.2mm. Thus it is guaranteed that the vial will not burst. Contrary to a widely spread opinion, the seal and not the vial represents the weakest part of the whole sytem. Under pressure the septa will bulge against the Aluminum cap with such a force that the cap is torn apart. By own testing we varified that e.g. our PerkinElmer vial 20 09 0297 can easily withstand 10 bars or more while the seal is torn apart at around 10 bars when no pressure release system – like our Headspace Cap – is used.

Headspace Vials might differ in:

- **Volume (5ml, 10ml, 20ml)**
- **Rounded or flat bottom**

A rounded bottom is more sturdy and thus more resistant to the high pressure within the vial during the heating process. Furthermore the vial slides more easily into the heating block when being transported by a magnet.
A flat bottom might be necessary when vials have to run within the instrument on a slightly downwards tendency.

- **Bevelled top or flat DIN Crimp Neck/Screw Neck**

A bevelled top Headspace Neck might be required for some special closure systems (PerkinElmer), however, a liner has more surface to lie on with a flat DIN Crimp Neck. The more surface for the liner to rest on, the tighter the seal.

- **Length of the Neck (instrument specific)**
- **Clear/Amber Glass**
- **With/without label and filling lines**
- **Upon request with a barcode label**

Headspace Closures might differ in:

- **Type of Cap**

Centre Hole Crimp Cap, Headspace Cap, Centre Tear Off Cap, Complete Tear Off Cap, Magnetic Crimp Cap with 5mm or 8mm centre hole, Bimetal Cap, Magnetic Screw Cap (with 8mm centre hole or closed top), PP Screw Cap, PE Cap. Screw Caps are a novelty in the crimp neck dominated Headspace area. However, they represent a ready to use, convenient solution, that does not require any additional tools (crimpers, decappers). Thus samples can be taken and sealed out in the field without the necessity of sample transfer later in the lab. The magnetic Screw Seals can be used universally for Headspace as well as for SPME.

- **Type of Liner**

Butyl, Butyl/PTFE, Pharma-Fix-Liner (Butyl/PTFE), Silicone/PTFE, Silicone/Aluminum foil, Viton, Natural Rubber/TEF
Besides the material the liners may differ in thickness, hardness (° shore A), colour, type of PTFE lamination, grade of Silicone (Ultra*Clean*).

10.1 Headspace-Vials ND20 + ND18

Art. No.	20 09 0342	20 09 0801	20 09 1405 20 09 1691	20 09 0802	20 09 0795	20 09 0297 20 09 1223	20 09 0440
Description	5ml Headspace-Vial, 38.2 x 22mm, clear glass, 1st hydrol. class, rounded bottom	5ml Crimp Neck Vial, 38 x 20mm, clear glass, 1st hydrol. class, flat bottom	10ml Headspace-Vial, 46 x 22.5mm, clear / amber glass, 1st hydrol. class, DIN-crimp neck, rounded bottom	10ml Crimp Neck Vial, 54.5 x 20mm, clear glass, 1st hydrol. class, flat bottom	10ml Headspace-Vial, 46 x 22.5mm, clear glass, 1st hydrol. class, DIN-crimp neck, long neck, flat bottom	20ml Headspace-Vial, 75.5 x 23mm, clear / amber glass, 1st hydrol. class, rounded bottom	20ml Headspace-Vial, 75.5 x 23mm, clear glass, 1st hydrol. class, rounded bottom, with label + filling lines
TFVol. (ml)	9.4	8	12.3	12.2	11.7	22	22.4
UsVol. (ml)	5	5	10	10	10	20	20
MWVol. (µl)	1500	1500	1500	1500	1500	1500	1500
Res. Vol. (µl)	800	800	800	800	800	800	800
	100 pcs. per PP-Box						
	Perkin Elmer	Varian	Carlo Erba, CTC, Fisons, Varian (CP)	Varian	Carlo Erba, Dani, Fisons, Agilent	Perkin Elmer, Tekmar	Perkin Elmer, Tekmar

Art. No.	20 09 0796	20 09 0873 20 09 1690	20 09 1222	18 09 0864	18 09 1306 18 09 1310	18 09 1307 18 09 1311
Description	20ml Headspace-Vial, 75.5 x 22.5mm, clear glass, 1st hydrol. class, DIN-crimp neck, long neck, flat bottom	20ml Headspace-Vial, 75.5 x 22.5mm, clear / amber glass, 1st hydrol. class, DIN-crimp neck, long neck, rounded bottom	20ml SPME Vial, 75.5 x 22.5mm, clear glass, 1st hydrol. class, rounded bottom, special crimp neck	20ml Headspace-Vial, 75.5 x 23mm, clear glass, 1st hydrol. class, rounded bottom, with screw thread ND18	10ml Precision Thread Vial ND18, 46 x 22.5mm, clear / amber glass, 1st hydrol. class, rounded bottom	20ml Precision Thread Vial ND18, 75.5 x 22.5mm, clear / amber glass, 1st hydrol. class, rounded bottom
TFVol. (ml)	21.2	20.9	21.2	21.2	10.8	20.6
UsVol. (ml)	20	20	20	20	8	18
MWVol. (µl)	1500	1500	1500	1500	1500	1500
Res. Vol. (µl)	800	800	800	800	800	800
	100 pcs. per PP-Box					
	Carlo Erba, Dani, Fisons, Agilent	CTC PAL (Varian, Gerstel, Atas, Shimadzu), TriPlus HS	SPME Vial for CTC PAL	Perkin Elmer	CTC PAL (Varian, Gerstel, Atas, Shimadzu, Agilent)	CTC PAL (Varian, Gerstel, Atas, Shimadzu, Agilent)

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

10.2 Headspace Vials + Closures ND20 + ND18 (Headspace Compatibility Chart)

20 02 0122
Moulded Septa
Butyl, dark grey,
55° shore A, 3.0mm

20 02 0057
Moulded Septa
Butyl/PTFE, grey,
50° shore A, 3.0mm

20 02 0035
Pharma-Fix-Septa
(Butyl/PTFE),
50° shore A, 3.0mm

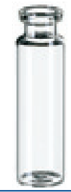
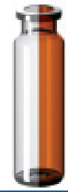
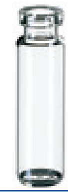
20 02 0141
Silicone blue transp./
PTFE white,
45° shore A, 3.0mm

20 02 2054
Silicone blue transp./
PTFE transp.,
45° shore A, 3.0mm

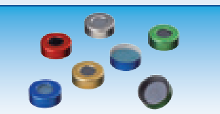
20 02 0638
Silicone white/PTFE beige,
45° shore A, 3.2mm
(HT Quality)

20 02 0335
Silicone white/
Aluminum foil silver,
50° shore A, 3.0mm

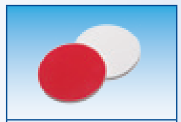
20 10 0290
20mm
Butyl Injection Stopper, grey
rec. by PerkinElmer

Scale 1:3 Original size p.s. 94					
Art. No.	**20 09 0795**	**20 09 0796**	**20 09 1405** **20 09 1691**	**20 09 0873** **20 09 1690**	**20 09 1222**
Description	10ml Headspace-Vial, flat bottom 46 x 22.5mm	20ml Headspace-Vial, flat bottom 75.5 x 22.5mm	10ml Headspace-Vial, rounded bottom 46 x 22.5mm	20ml Headspace-Vial, rounded bottom 75.5 x 22.5mm	20ml SPME Vial, rounded bottom 75.5 x 22.5mm
For use on instruments	Agilent, Carlo Erba, DANI, Fisons	Agilent, Carlo Erba, DANI, Fisons	Carlo Erba, CTC PAL (Varian, Gerstel, Atas, Shimadzu), Fisons, Varian, Thermo Scientific	CTC PAL (Varian, Gerstel, Atas, Shimadzu) Thermo Scientific TriPlus HS ***	SPME Vial for CTC PAL
Remarks	*** not suitable for Thermo Scientific HS250/HS500				
Autosampler Compatibility					
Agilent G1888A, Agilent HS 7694 (DANI HS 39.50/HS 86.50)	20 03 0030/20 03 0901 20 03 0264/20 03 0828	20 03 0030/20 03 0901 20 03 0264/20 03 0828			
Agilent CTC Combi Pal					
CTC Combi PAL (HS Mode) (Gerstel MPS 2/Varian) CTC PAL HTC-xt, CTC HTS-xt, CTC HTX-xt, CTC PAL Combi-xt Liquid Mode, CTC Combi.xt HS Option, CTC GC-xt HS Option			20 03 0975 20 03 1536	20 03 0975 20 03 1536	
CTC Combi PAL (SPME Mode) (Gerstel MPS 2/Varian) CTC Combi- xt SPME Options					20 03 1246/20 03 1264
CTC HS 500			20 03 0665	20 03 0665	
HTA HT200H	20 03 0142/20 03 0901			20 03 0142/20 03 0901	
PerkinElmer HS6					
PerkinElmer HS40/HS100/ HS101					
TurboMatrix™ HS16/HS40/ HS40XL/HS40 Trap/HS110/ HS110 Trap					
Shimadzu AOC-5000 (HS Mode) Shimdazu SIL-30 ACMP			20 03 0975 20 03 1536	20 03 0975 20 03 1536	
Shimadzu AOC-5000 (SPME Mode)					20 03 1246/20 03 1264
Thermo Scientific HS250/HS500 (Carlo Erba/Fisons/Thermo Scientific)			20 03 0711/20 03 0665/ 20 03 0710		
Thermo Scientific HS800 (Carlo Erba/Fisons/Thermo Scientific)			20 03 0711/20 03 0665/ 20 03 0710	20 03 0711/20 03 0665/ 20 03 0710	
Thermo Scientific HS850 (Carlo Erba/ Fisons/ Thermo Scientific)			20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059	20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059	
Thermo Scientific HS2000, Thermo Scientific TriPlus (HS Mode)			20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059	20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059	
Thermo Scientific TriPlus (SPME Mode)			20 03 0142/20 03 0901	20 03 0142/20 03 0901	
Tekmar HT 3					
Varian CP-9020/9025, CP-9060 Varian Genesis		same closures for Genesis	20 03 0142/20 03 0901/ 20 03 0030/20 03 0059		

Breakdown Headspace-Seals

Aluminum Crimp Cap, plain, 10mm centre hole 	Headspace-Cap, clear lacquered (pressure release cap) 	Magnetic Crimp Cap, gold, 5mm centre hole 
20 03 0127	**20 03 0126**	**20 03 0711**
with Butyl, dark grey, 55° shore A, 3.0mm	with Butyl, dark grey, 55° shore A, 3.0mm	with Butyl, dark grey, 55° shore A, 3.0mm
20 03 0059	**20 03 0112**	**20 03 0710**
with Butyl/PTFE, grey, 50° shore A, 3.0mm	with Butyl/PTFE, grey, 50° shore A, 3.0mm	with Pharma-Fix-Septa, Butyl/PTFE, 50° shore A, 3.0mm
20 03 0030	**20 03 0264**	**20 03 0665**
with Pharma-Fix-Septa, Butyl/PTFE, 50° shore A, 3.0mm	with Pharma-Fix-Septa, Butyl/PTFE, 50° shore A, 3.0mm	with Silicone blue transp./PTFE transp., 45° shore A, 3.0mm
20 03 0142	**20 03 0163**	
with Silicone blue transp./PTFE white, 45° shore A, 3.0mm	with Silicone blue transp./PTFE white, 45° shore A, 3.0mm	
20 03 0901	**20 03 0828**	
with Silicone white/PTFE beige, 45° shore A, 3.2mm	with Silicone white/PTFE beige, 45° shore A, 3.2mm	
20 03 0327	**20 03 0326**	
with Silicone white/Aluminum foil silver, 50° shore A, 3.0mm	with Silicone white/Aluminum foil silver, 50° shore A, 3.0mm	

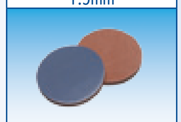
18 09 1306 18 09 1310	18 09 1307 18 09 1311	20 09 0342	20 09 0297 20 09 1223	20 09 0440	20 09 0801 20 09 0802
10ml Precision Thread Vial, rounded bottom 46 x 22.5mm	20ml Precision Thread Vial, rounded bottom 75.5 x 22.5mm	5ml Headspace-Vial, rounded bottom 38.2 x 22mm	20ml Headspace-Vial, rounded bottom 75.5 x 23mm	20ml Headspace-Vial, rounded bottom 75.5 x 23mm	5ml/10ml Crimp Neck Vial, flat bottom 38 x 20mm/54.5 x 20mm
CTC Combi PAL (Varian, Gerstel, Atas, Shimadzu), PerkinElmer*, Agilent	CTC Combi PAL (Varian, Gerstel, Atas, Shimadzu), PerkinElmer*, Agilent	PerkinElmer**	PerkinElmer, Tekmar	PerkinElmer, Tekmar	Varian
* for TurboMatrix™ 16, 40 and 110, produced after the 01.09.2006 / ** not suitable for TurboMatrix™ 110					
Autosampler Compatibility					
	18 03 1414 (only for G1888A)				
	18 03 1414				
18 03 1578/18 03 1309 18 03 1414	18 03 1578/18 03 1309 18 03 1414				
18 03 1578/18 03 1309 18 03 1414/18 03 2063	18 03 1578/18 03 1309 18 03 1414/18 03 2063				
		20 03 0126/20 03 0112 20 03 0264/20 03 0163 20 03 0326/20 03 0828 20 03 0127/20 03 0059 20 03 0030/20 03 0142 20 03 0327/20 03 0901			
		see PerkinElmer HS6	see PerkinElmer HS6	see PerkinElmer HS6	
	18 03 1309/18 03 1416 18 03 1874	see PerkinElmer HS6	see PerkinElmer HS6	see PerkinElmer HS6	
18 03 1578/18 03 1309 18 03 1414	18 03 1578/18 03 1309 18 03 1414				
18 03 1578/18 03 1309 18 03 1414/18 03 2063	18 03 1578/18 03 1309 18 03 1414/18 03 2063				
			20 03 0030/20 03 0059 20 03 0142/20 03 0901	20 03 0030/20 03 0059 20 03 0142/20 03 0901	



17 02 1580
Silicone white/PTFE red, 45° shore A, 1.3mm

17 02 1417
Silicone blue transparent/PTFE white, 45° shore A, 1.3mm

17 02 1318
Silicone white/PTFE blue, 55° shore A, 1.5mm



17 02 1415
Butyl red/PTFE grey, 55° shore A, 1.6mm

17 02 1873
Silicone white/Aluminum foil silver, 50° shore A, 1.3mm

Vials: 100 pcs. per PP-Box
Closures: 100 pcs. per PE-Bag
Septa: 1.000 pcs. per PE-Bag
Stoppers: 100 pcs. per PE-Bag

Breakdown Headspace-Seals

Magnetic Crimp Cap, gold, 8mm centre hole 	Magnetic Bimetal-Cap, red/silver, 8mm centre hole 	Magn. Precision Thread Screw Cap, silver, 8mm centre hole 
20 03 0975	**20 03 1536**	**18 03 1416**
with Silicone blue transp./PTFE transparent, 45° shore A, 3.0mm	with Silicone blue transparent/PTFE transparent, 45° shore A, 3.0mm	with Butyl red/PTFE grey, 55° shore A, 1.6mm
		18 03 1309
		with Silicone blue transp./PTFE white, 45° shore A, 1.3mm
20 03 1246		**18 03 1578**
with Silicone white/PTFE blue, 55° shore A, 1.5mm		with Silicone white/PTFE red, 45° shore A, 1.3mm
20 03 1264		**18 03 1414**
with Viton black, 70° shore A, 1.0mm		with Silicone white/PTFE blue, 55° shore A, 1.5mm
		18 03 2063
		with Silicone white/PTFE red, 55° shore A, 1.5mm, pre-cut star for SPME
		18 03 1874
		Silicone white/Aluminum foil silver, 50° shore A, 1.3mm

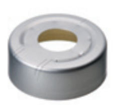
10.3 Other Crimp Neck Vials ND20

Art. No.	20 09 0289	Scale 1:2, Original size: P. 89	20 09 0343	Scale 1:2, Original size: P. 89
Description	50ml Crimp Neck Vial, 101 x 31mm, clear glass, 1st hydrol. class		100ml Crimp Neck Vial, 94.5 x 51.6mm, clear glass, 3rd hydrol. class	
TFVol. (ml)	58		118.8	
UsVol. (ml)	50		100	
MWVol. (µl)	3080		10 000	
Res. Vol. (µl)	1500		6000	
	100 pcs. per PP-Box		88 pcs. shrink-wrapped	

Stainless Steel Crimping Tools please see chapter 18.3 on page 55.

10.4 Aluminum Crimp Seals ND20

Overview of the various crimp caps, which can be obtained with a broad variety of different liners!

Centre Hole Cap	Headspace Cap	Centre Tear-Off Cap	Complete Tear-Off Cap	Magnetic Crimp Cap	Magnetic Crimp Cap	Magnetic Bimetal Crimp Cap
						
Plain, red, blue, gold, green 10mm centre hole	Clear lacquered, scorelines break open at 3.0 ± 0.5 bar for pressure release	Clear lacquered, red, blue, gold, green	Clear lacquered, red, blue, gold, green	Gold, 5mm centre hole CE HS500/HS800, CTC 500, Fisons HS500/HS800	Gold, 8mm centre hole CTC Combi PAL	Red, 8mm centre hole CTC Combi PAL

Any type of cap can O N L Y be obtained in combination with a liner or a stopper!

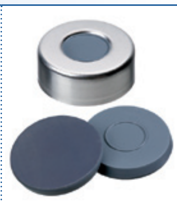
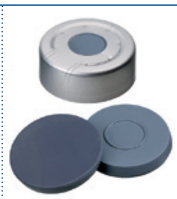
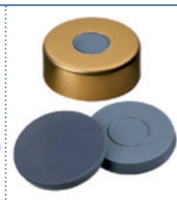
10.4.1 Butyl Seals

- Temperature resistant from -40°C up to 120°C.
- Due to the missing PTFE lamination only suitable for uncritical analyses.
- Low-cost product.

						
Art. No.	20 03 0127	20 03 0126	20 03 0195	20 03 0212	20 03 0711	20 03 1157
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Centre Tear-Off Cap, clear lacquered	Complete Tear-Off Cap, clear lacquered	Magnetic Cap, gold, 5mm centre hole	Magnetic Cap, gold, 8mm centre hole
Septa Material	Butyl, dark grey					
Durometer	55° shore A					
Thickness	3.0mm					
	100 pcs. per PE-Bag					

10.4.2 Butyl/PTFE Seals (completely PTFE laminated)

- Temperature resistant from -40°C up to 120°C.
- Completely laminated with PTFE.

							
Art. No.	20 03 0059	20 03 0112	20 03 0194	20 03 0186	20 03 0698	20 03 1186	20 03 1623
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Centre Tear-Off Cap, clear lacquered	Complete Tear-Off Cap, clear lacquered	Magnetic Cap, gold, 5mm centre hole	Magnetic Cap, gold, 8mm centre hole	Magnetic Bimetal Cap, red, 8mm centre hole
Septa Material	Butyl/PTFE, grey						
Durometer	50° shore A						
Thickness	3.0mm						
	100 pcs. per PE-Bag						

The liner can also be obtained assembled in any of the (coloured) caps mentioned on top of page 42.

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

10.4.3 Pharma-Fix Seals (Butyl/PTFE)

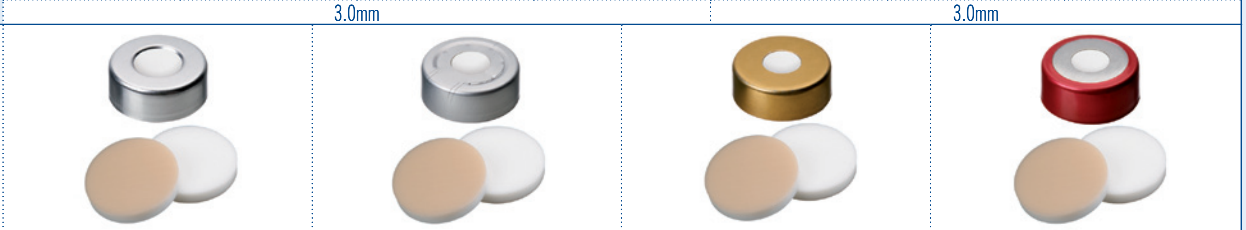
- Special, moulded Butyl/PTFE liner that is only laminated with PTFE in the contact area towards the sample. On the glass rims the elastic Butyl achieves a very tight seal.
- Temperature resistant from -40°C up to 120°C.
- Tighter alternative to the completely laminated Butyl/PTFE liners (see chapter 10.3.2).

Art. No.	20 03 0030	20 03 0264	20 03 0060	20 03 0061	20 03 0710	20 03 1200
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Centre Tear-Off Cap, clear lacquered	Complete Tear-Off Cap, clear lacquered	Magnetic Cap, gold, 5mm centre hole	Magnetic Cap, gold, 8mm centre hole
Septa Material	Pharma-Fix-Septa, Butyl/PTFE					
Durometer	50° shore A					
Thickness	3.0mm					
100 pcs. per PE-Bag						

10.4.4 Silicone/PTFE Seals (completely PTFE laminated)

- Temperature resistant from -60°C up to 200°C.
- Clean/Ultra*Clean* liners for sensitive analyses.
- White/beige liner corresponds to Agilent HT liner.
- Completely laminated with PTFE.
- Soft liners for easy penetration.

Art. No.	20 03 0142	20 03 0163	20 03 0226	20 03 0227	20 03 0665	20 03 0975	20 03 1536
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Centre Tear-Off Cap, clear lacquered	Complete Tear-Off Cap, clear lacquered	Magnetic Cap, gold, 5mm centre hole	Magnetic Cap, gold, 8mm centre hole	Magnetic Bimetal Cap, red, 8mm centre hole
Septa Material	Silicone blue transparent/PTFE white Ultra*Clean*				Silicone blue transparent/PTFE transparent Ultra*Clean*		
Durometer	45° shore A				45° shore A		
Thickness	3.0mm				3.0mm		



Art. No.	20 03 0901	20 03 0828	20 03 1785	20 03 1604
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Magnetic Cap, gold, 8mm centre hole	Magnetic Bimetal Cap, red, 8mm centre hole
Septa Material	Silicone white/PTFE beige ***(HT Quality)***			
Durometer	45° shore A			
Thickness	3.2mm			
100 pcs. per PE-Bag				

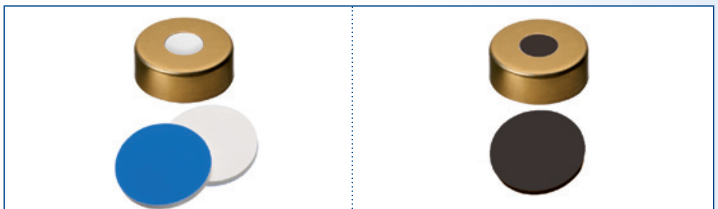
10.4.5 Silicone/Aluminum foil Seals

- Temperature resistant from -60°C up to 220°C.
- Often used on PerkinElmer instruments.
- Completely laminated with Aluminum foil silver.

Art. No.	20 03 0327	20 03 0326	20 03 0670
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Magnetic Cap, gold, 5mm centre hole
Septa Material	Silicone white/Aluminum foil silver		
Durometer	50° shore A		
Thickness	3.0mm		
100 pcs. per PE-Bag			

10.4.6 Magnetic Seals for SPME-Vial 20 09 1222 for CTC

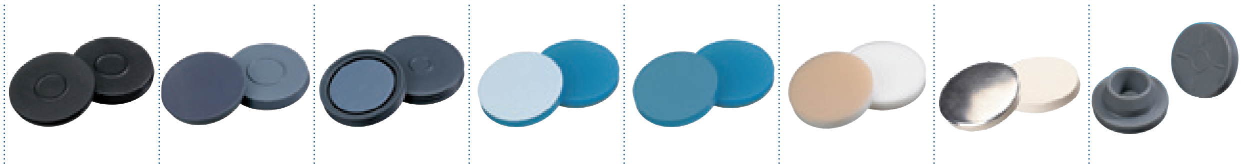
- Much thinner liners for easier penetration of the sensitive phase.
- Special Silicone/PTFE liner with an only 0.05mm thin casted Teflon film instead of 0.13mm skived PTFE lamination that is standard for any other 20mm Headspace liner. Thus penetration is even easier, as PTFE is the hardest part to penetrate.
- These special products should only be used in combination with the SPME-Vial 20 09 1222 which has a much thicker crimp neck than all standard Headspace Vials.



Art. No.	20 03 1246	20 03 1264
Description Cap	Magnetic Cap, gold, 8mm centre hole	Magnetic Cap, gold, 8mm centre hole
Septa Material	Silicone white/PTFE blue Ultra*Clean*	Viton black
Durometer	55° shore A	70° shore A
Thickness	1.5mm	1.0mm
100 pcs. per PE-Bag		

The liner can also be obtained assembled in any of the (coloured) caps mentioned on top of page 42.

10.5 Septa/Stoppers 20mm



Art. No.	**20 02 0122**	**20 02 0057**	**20 02 0035**	**20 02 0141**	**20 02 2054**	**20 02 0638**	**20 02 0335**	**20 10 0290**
Septa Material	Moulded Septa Butyl, dark grey,	Moulded Septa Butyl/PTFE, grey,	Pharma-Fix-Septa (Butyl/PTFE),	Silicone blue transp./ PTFE white,	Silicone blue transp./ PTFE transparent,	Silicone white/ PTFE beige, ***(HT Quality)***	Silicone white/ Aluminum foil silver,	20mm Butyl Injection Stopper, grey ***rec. by PerkinElmer***
Durometer	55° shore A	50° shore A	50° shore A	45° shore A	45° shore A	45° shore A	50° shore A	
Thickness	3.0mm	3.0mm	3.0mm	3.0mm	3.0mm	3.2mm	3.0mm	
	Further 20mm Septa available upon request!							
Septa – 1000 pcs. per PE-Bag / Stopper – 100 pcs. per PE-Bag								

10.6 Other Combination Seals for HS-Neck/Crimp Neck ND20

- Seals for washer bottles on the instruments.
- Intermediate closure when collecting samples out in the field.
- Now also available as PE-Cap with 6mm hole.

Art. No.	**22 15 0321**	**22 15 1697**	**22 15 0712**	**22 15 0863**	**22 15 1646**	**22 15 1334**	**22 15 1824**	**22 15 1869**
Description Cap	PE-Cap, transparent, **22 x 8.4mm**, 4.3mm centre hole			PE-Cap, transparent, **22 x 9.1mm**, 4.3mm centre hole				PE-Cap, transparent, 22 x 9.1mm, **6mm centre hole**
Septa Material	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone blue transparent/PTFE white	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone blue transparent/PTFE white	Silicone blue transparent/PTFE white, Y-slitted	Silicone blue transparent/PTFE white, Y-slitted
Durometer	60° shore A	55° shore A	45° shore A	60° shore A	55° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.3mm							
	suitable for 20 09 0297, 20 09 0342, 20 09 0440, 20 09 1223			suitable for 20 09 0289, 20 09 0343, 20 09 0795, 20 09 0796, 20 09 0801, 20 09 0802, 20 09 0873, 20 09 1405, 20 09 1690, 20 09 1691				
100 pcs. per PE-Bag								

10.6.1 Septa 19.5mm

Art. No.	**19 02 0245**	**19 02 1636**	**19 02 0693**
Septa Material	Nat. Rubber red-orange/ TEF transparent,	Butyl red/PTFE grey,	Silicone blue transp./ PTFE white,
Durometer	60° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.3mm	1.3mm
1000 pcs. per PE-Bag			

10.6.2 PE-Caps 22mm

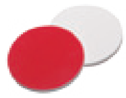
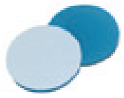
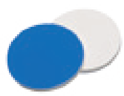
Art. No.	**22 08 0340**	**22 08 0257**	**22 08 1868**
Description Cap	22mm PE-Cap, transparent, 4.3mm centre hole, skirt height 8.4mm	22mm PE-Cap, transparent, 4.3mm centre hole, skirt height 9.1mm	22mm PE-Cap, transparent, 6mm centre hole, skirt height 9.1mm
100 pcs. per PE-Bag			

10.7 Magnetic Universal Screw Seals ND18 for Precision Thread Vials 18 09 1306, 18 09 1310, 18 09 1307, 18 09 1311 for CTC, Agilent, Shimadzu, Varian, Gerstel, PerkinElmer etc.

- Closed top versions for sample storage.
- 18 03 1309 and 18 03 1414 have been tested and approved by CTC.
- 18 03 2063 especially suitable for SPME due to the pre-cut septa.
- Precision Thread Vials and Closures now also used on PerkinElmer TurboMatrix 16, 40 and 110 autosampler that have been constructed after 01.09.2006.

Art. No.	**18 03 1578**	**18 03 1309**	**18 03 1414**	**18 03 1416**	**18 03 1874**	**18 03 2063**	**18 03 1666**	**18 03 1667**
Description Cap	Magnetic Screw Cap silver, 8mm centre hole					Magnetic Screw Cap silver, 8mm centre hole (SPME)	Magnetic Screw Cap silver, closed top	
Septa Material	Silicone white/ PTFE red UltraClean	Silicone blue transparent/PTFE white UltraClean	Silicone white/ PTFE blue UltraClean	Butyl red/PTFE grey	Silicone white/ Aluminum foil silver	Silicone white/ PTFE red, pre-cut star (*)	Silicone white/PTFE red UltraClean	Butyl red/PTFE grey
Durometer	45° shore A	45° shore A	55° shore A	55° shore A	50° shore A	55° shore A	45° shore A	55° shore A
Thickness	1.3mm	1.3mm	1.5mm	1.6mm	1.3mm	1.5mm	1.3mm	1.6mm
	Attention! These screw seals are not suitable for article number 18 09 0864!							
100 pcs. per PE-Bag								

10.7.1 Septa 17.5mm for Magnetic Universal Screw Seals ND18

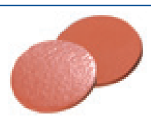
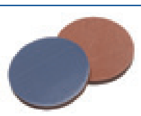
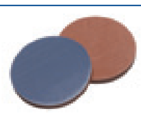
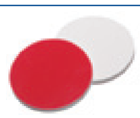
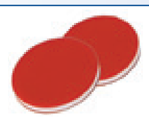
					
Art. No.	17 02 1580	17 02 1417	17 02 1318	17 02 1415	17 02 1873
Septa Material	Silicone white/PTFE red	Silicone blue transparent/PTFE white	Silicone white/PTFE blue	Butyl red/PTFE grey	Silicone white/Aluminum foil silver
Durometer	45° shore A	45° shore A	55° shore A	55° shore A	50° shore A
Thickness	1.3mm	1.3mm	1.5mm	1.6mm	1.3mm
1000 pcs. per PE-Bag					

10.8 PP Screw Seals ND18 for 18 09 0864

								
Art. No.	18 15 1386	18 15 1387	18 15 1398	18 15 1544	18 15 2102	18 15 2069	18 15 0871	18 15 1132
Description Cap	Polypropylene Screw Cap black, 12mm centre hole	Polypropylene Screw Cap black, closed top	Polypropylene Screw Cap black, 12mm centre hole	Polypropylene Screw Cap black, closed top	Polypropylene Screw Cap black, 12mm centre hole	Polypropylene Screw Cap black, closed top	Polypropylene Screw Cap black, 12mm centre hole	Polypropylene Screw Cap black, closed top
Septa Material	Butyl red/PTFE grey				Silicone white/PTFE red		Silicone blue transparent/PTFE white	
Durometer	55° shore A	55° shore A	55° shore A	55° shore A	55° shore A	55° shore A	45° shore A	45° shore A
Thickness	1.6mm	1.6mm	2.0mm	2.0mm	1.5mm	1.5mm	1.7mm	1.7mm
	Further Screw Seals ND18 with closed/open top caps are available upon request!							
100 pcs. per PE-Bag								

Attention! These screw seals are not suitable for article numbers 18 09 1306, 18 09 1307, 18 09 1310, 18 09 1311!

10.8.1 Septa 16mm

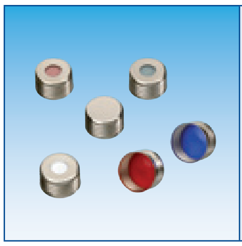
						
Art. No.	16 02 0653	16 02 1384	16 02 1385	16 02 2068	16 02 0870	16 02 0705
Septa Material	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Butyl red/PTFE grey	Silicone white/PTFE red	Silicone blue transp./PTFE white	PTFE red/Silicone white/PTFE red
Durometer	60° shore A	55° shore A	55° shore A	55° shore A	45° shore A	45° shore A
Thickness	1.3mm	1.6mm	2.0mm	1.5mm	1.7mm	1.0mm
1000 pcs. per PE-Bag						

10.8.2 PP Screw Caps ND18

		
Art. No.	18 08 0516	18 08 0614
Description Cap	Polypropylene Screw Cap, black, 12mm centre hole	Polypropylene Screw Cap, black, closed top
100 pcs. per PE-Bag		

TIP

For Vial Racks please see chapter 19.1 on page 56



Universal Magnetic Screw Seals ND18 available with open and closed top

TIP

For 20mm Crimpers and Decappers please see chapter 18 on pages 54 cont.

TIP

Any 20ml Head-space-Vial can be obtained with the appropriate seal as a 2in1 KIT!

10. Headspace ND20 (ND18)

11. Snap Cap Vials ND18 + ND22

- Easy to handle and inexpensive storage vials with push-on Snap Caps
- Different volumes of 5ml, 10ml, 15ml and 25ml available
- Caps and Vials separately obtainable
- Quickly and easily to reopen and reseal
- No liners are required in the cap

11.1 Snap Cap Vials ND18 / ND22 and appropriate Snap Caps

				
Art. No.	**18 09 0906**	**18 09 0907**	**20 09 0784**	**22 09 0908**
Description	5ml Snap Cap Vial ND18, 40 x 20mm, clear glass, 3rd hydrol. class	10ml Snap Cap Vial ND18, 50 x 22mm, clear glass, 3rd hydrol. class	15ml Snap Cap Vial ND22, 48 x 26mm, clear glass, 3rd hydrol. class	25ml Snap Cap Vial ND22, 65 x 26mm, clear glass, 3rd hydrol. class
TFVol. (ml)	9.1	14	19.3	27
UsVol. (ml)	8	12.7	18.5	25
MWVol. (ml)	0.6	1	1	1
Res. Vol. (ml)	0.3	0.5	0.6	0.6
	100 pcs. per PP-Box		100 pcs. per cardboard box	100 pcs. per PP-Box
				
Art. No.	**18 08 0913**	**18 08 0913**	**22 08 0794**	**22 08 0794**
Description Cap	18mm PE Snap Cap, 19.8 x 5.2mm, transparent, closed top, for ND18	18mm PE Snap Cap, 19.8 x 5.2mm, transparent, closed top, for ND18	22mm PE Snap Cap, 23.5 x 5.5mm, transparent, closed top, for ND22	22mm PE Snap Cap, 23.5 x 5.5mm, transparent, closed top, for ND22
	100 pcs. per PE-Bag			

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl)(ml), Res. Vol. = Residual Volume (ml)

12. Screw Neck ND24 (EPA)

The vials are preferentially used on instruments of the following manufacturers: Agilent, Dionex, Shimadzu, Tekmar, Thermo Scientific, Varian

(Please have a look at the autosampler compatibility chart on pages 76-85 to see on which models they can be used)

- All types of EPA Vials can be delivered against a small surcharge with a certificate of cleanliness that might especially be needed for TOC analysis. A copy of our certificate of cleanliness is shown under the point "Technical Information" on our website.
- EPA Vials can be obtained with any type of Screw Seal ND24 already screwed on (see also chapter 12.5 + 18.2 "Pre-Screwed/Pre-Crimped Vials").
- Broad range of EPA Vials in clear and amber glass.
- Volumes of 20ml, 30ml, 40ml and 60ml available.

12.1 Screw Neck Vials ND24 (EPA)

Upon special request also available pre-screwed with a seal of your choice.

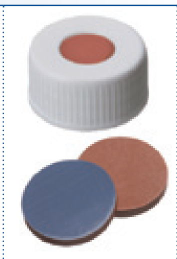
Art. No.	24 09 0589	24 09 0927	24 09 0839	24 09 0923	24 09 0402	24 09 0928	24 09 1089	24 09 1090
Description	20ml EPA Screw Neck Vial, 57 x 27.5mm, clear glass, 1st hydrol. class	20ml EPA Screw Neck Vial, 57 x 27.5mm, amber glass, 1st hydrol. class	30ml EPA Screw Neck Vial, 72.5 x 27.5mm, clear glass, 1st hydrol. class	30ml EPA Screw Neck Vial, 72.5 x 27.5mm, amber glass, 1st hydrol. class	40ml EPA Screw Neck Vial, 95 x 27.5mm, clear glass, 1st hydrol. class	40ml EPA Screw Neck Vial, 95 x 27.5mm, amber glass, 1st hydrol. class	60ml EPA Screw Neck Vial, 140 x 27.5mm, clear glass, 1st hydrol. class	60ml EPA Screw Neck Vial, 140 x 27.5mm, amber glass, 1st hydrol. class
TFVol. (ml)	23.3	23.3	31.1	31.1	42.9	42.9	64.4	64.4
UsVol. (ml)	20	20	27.4	27.4	40	40	60	60
MWVol. (ml)	1	1	1.4	1.4	1.4	1.4	1.4	1.4
Res. Vol. (ml)	0.5	0.5	0.7	0.7	0.7	0.7	0.7	0.7
100 pcs. per PP-Box								

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl)(ml), Res. Vol. = Residual Volume (ml)

12.2 PP Screw Seals ND24

- Ready to use combination seals; no time-consuming and "tricky" assembly.
- No contamination of the liner with sweat/fat that normally is caused by manual assembly.
- Available as closed top screw seals or with centre hole in white 24-400 caps.
- Broad variety of different septa materials for almost all applications.
- Also UltraBond Seals ND24 are offered, i.e. that the cap and the Silicone/PTFE liner of these seals form an inseparable unit avoiding the problem of liners falling out of the cap. This 100% firm fit of the liner is achieved by a patented process that requires no adhesives, but instead changes the molecular structure of both components to achieve the fixation.
- Also pre-sealed vials are available!

12.2.1 PP Screw Seals ND24 (assembled)

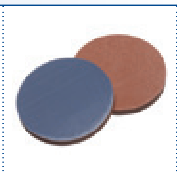
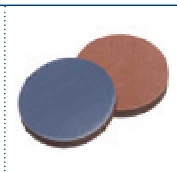
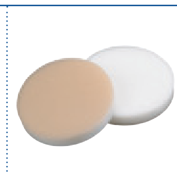
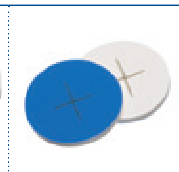
					
Art. No.	**24 15 1394**	**24 15 1395**	**24 15 1163**	**24 15 1540**	**24 15 1007**
Description Cap	PP Screw Cap white, 12.5mm centre hole	PP Screw Cap white, closed top	PP Screw Cap white, 12.5mm centre hole	PP Screw Cap white, closed top	PP Screw Cap white, closed top
Septa Material	Butyl red/PTFE grey	Butyl red/PTFE grey	Silicone white/PTFE beige ***(EPA-Quality)***	Silicone white/PTFE beige ***(EPA-Quality)***	PTFE/EPDM/PTFE
Durometer	55° shore A	55° shore A	45° shore A	45° shore A	65° shore A
Thickness	2.5mm	2.5mm	3.2mm	3.2mm	2.0mm
	Further Screw Seals ND24 with closed/open top are available upon request!				
100 pcs. per PE-Bag					

12.2.2 UltraBond Seals ND24

(Cap + Liner form an inseparable unit, so that the liner cannot fall out)

	
24 04 0842	**24 04 0841**
PP Screw Cap white, centre hole	PP Screw Cap white, closed top
Silicone natural/PTFE beige ***(EPA-Quality)***	
45° shore A	
3.2mm	
100 pcs. per PE-Bag	

12.3 Septa 22mm

					
Art. No.	**22 02 1390**	**22 02 1393**	**22 02 1108**	**22 02 0409**	**22 02 0487**
Description Cap					
Septa Material	Butyl red/PTFE grey	Butyl red/PTFE grey	Silicone white/ PTFE beige	Silicone white/ PTFE blue	Silicone white/Aluminum foil silver
Durometer	55° shore A	55° shore A	45° shore A	55° shore A	50° shore A
Thickness	1.6mm (only unassembled)	2.5mm	3.2mm ***(EPA-Quality)***	1.5mm, cross-slitted	3.0mm
1000 pcs. per PE-Bag					

12.4 PP Screw Caps ND24

	
24 08 0403	**24 08 0592**
Polypropylene Screw Cap, white, 12.5mm centre hole	Polypropylene Screw Cap, white, closed top
100 pcs. per PE-Bag	

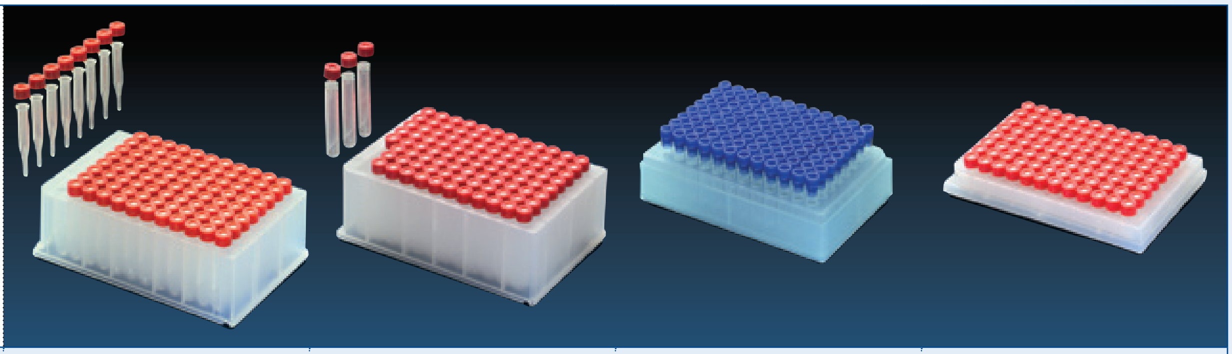
12.5 Specially assembled EPA Vials with Screw Seals ND24

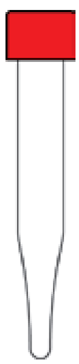
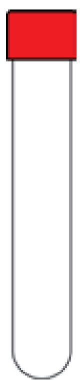
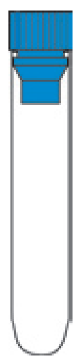
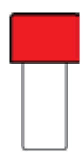
Art. No.	**24 14 1513**	**24 14 0976**	**24 14 1621**	**24 14 1538**	**24 14 1094**	**24 14 1278**	**24 14 1354**
Description Vial	20ml EPA Screw Neck Vial, 57 x 27.5mm, clear glass, 1st hydrolytic class, (24 09 0589)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1st hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1st hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1st hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, amber glass, 1st hydrolytic class, EPA (24 09 0928)	60ml Screw Neck Vial, 140 x 27.5mm, clear glass, 1st hydrolytic class, EPA (24 09 1089)	60ml Screw Neck Vial, 140 x 27.5mm, clear glass, 1st hydrolytic class, EPA (24 09 1089)
	pre-screwed with	***pre-screwed with***	***pre-screwed with***	***pre-screwed with***	***pre-screwed with***	***pre-screwed with***	***pre-screwed with***
Description of Screwed-on Seal	UltraBond Seal, white, centre hole, Silicone nat./PTFE beige ***(EPA-Quality)***	PP Screw Cap, white, centre hole, Silicone white/PTFE beige	UltraBond Seal, white, centre hole, Silicone natural/PTFE beige ***(EPA-Quality)***	UltraBond Seal, white, closed top, Silicone natural/PTFE beige ***(EPA-Quality)***	PP Screw Cap, white, centre hole, Silicone white/PTFE beige	PP Screw Cap, white, centre hole, Silicone white/PTFE beige	UltraBond Seal, white, centre hole, Silicone natural/PTFE beige ***(EPA-Quality)***
Durometer	45° shore A	45° shore A	45° shore A	45° shore A	45° shore A	45° shore A	45° shore A
Thickness	3.2mm (24 04 0842)	3.2mm (24 15 1163)	3.2mm (24 04 0842)	3.2mm (24 04 0841)	3.2mm (24 15 1163)	3.2mm (24 15 1163)	3.2mm (24 04 0842)
	Further Screw Neck Vials ND24 with screwed-on open top/closed top Screw Seals are available upon request!						
100 pcs. per PP-Box							

13. 96 Position Block Systems

- 96 Position Block Systems (RITTER) with Glass Inserts are used in combinatorial chemistry when the pure PP Block is not inert enough.
- These Inserts that are custom-tailored to fit a broad variety of 96 Well Blocks of Messrs. RITTER can either be sealed individually with a PE Cap Seal or over the whole block with a Sealmat block cover.
- The products can be obtained as individual components or as completely assembled, ready-to-use convenience blocks.

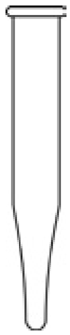
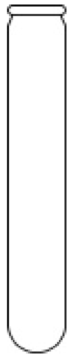
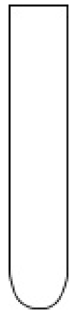
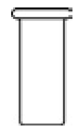
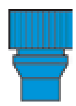
13.1 96 Position Block Systems with Glass Inserts, sealed individually



Art. No.	**08 20 0897**	**08 20 0911**	**08 20 0905**	**08 20 0943**
Description	Deep Well Block "riplate", PP, 96 positions (RITTER), filled with 0.35ml Micro-Insert, 42.5 x 6mm, clear glass, 1^{st} hydrol. class, 17mm top, with assembled 9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm **08 05 0890 + 08 14 0889**	Square Well Block "riplate", PP, 96 positions (RITTER), filled with 1ml Micro-Insert, 45.9 x 7.6mm, clear glass, 1^{st} hydrol. class, round bottom, with assembled 9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm **08 05 0894 + 08 14 0910**	Micro-Tube-Rack-System, PP, 96 positions (RITTER), filled with 0.8ml Micro-Insert, 40 x 7.6mm, clear glass, 1^{st} hydrol. class, U-shaped bottom, with assembled 8mm PE-Plug blue **08 05 0895 + 08 14 0904**	Microtiter-Plate, PP, 96 positions (RITTER), filled with 0.1ml Micro-Insert, 15.5 x 5.7mm, clear glass, 1^{st} hydrol. class, flat bottom, with assembled 9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm **08 05 0944 + 08 14 0876**
	1 pc. shrink-wrapped			
				
Art. No.	**08 14 0889**	**08 14 0910**	**08 14 0904**	**08 14 0876**
Description	0.35ml DW-Micro-Insert, 42.5 x 6mm, clear glass, 1^{st} hydrol. class, 17mm top, with assembled 9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm **08 09 0888 + 09 15 0763**	1ml SQW-Micro-Insert, 45.9 x 7.6mm, clear glass, 1^{st} hydrol. class, round bottom, with assembled 9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm **08 09 0909 + 09 15 0763**	0.8ml MTRS-Micro-Insert, 40 x 7.6mm, clear glass, 1^{st} hydrol. class, U-shaped bottom, with assembled 8mm PE-Plug blue **08 09 0903 + 08 08 0902**	0.1ml MTP-Micro-Insert, 15.5 x 5.7mm, clear glass, 1^{st} hydrol. class, flat bottom, with assembled 9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm **08 09 0875 + 09 15 0763**
TFVol. (ml)	0.41	1.2	1.02	0.23
UsVol. (ml)	0.35	1	0.8	0.2
MWVol. (µl)	25	30	30	40
Res. Vol. (µl)	<1	<3	<3	<10
	10 x 96 pcs. per PP-Box			

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

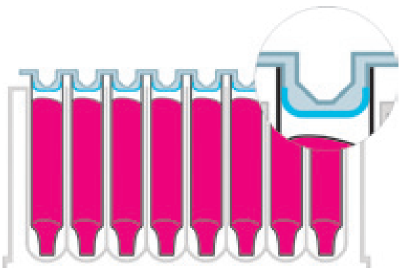
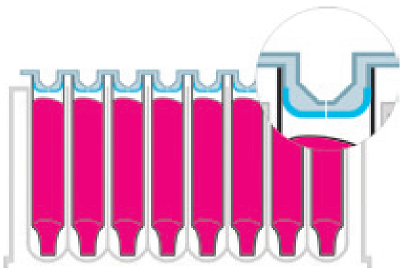
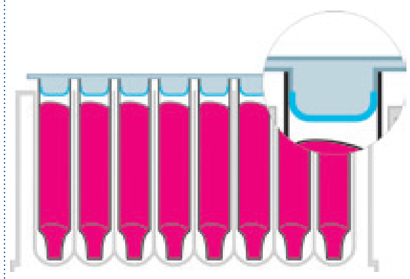
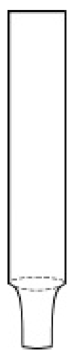
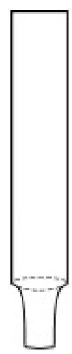
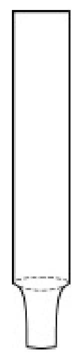
13.1 96 Position Block Systems with Glass Inserts, sealed individually (cont.)

				
Art. No.	**08 09 0888**	**08 09 0909**	**08 09 0903**	**08 09 0875**
Description	0.35ml DW-Micro-Insert, 42.5 x 6mm, clear glass, 1st hydrol. class, 17mm top	1ml SQW-Micro-Insert, 45.9 x 7.6mm, clear glass, 1st hydrol. class, round bottom	0.8ml MTRS-Micro-Insert, 40 x 7.6mm, clear glass, 1st hydrol. class, U-shaped bottom	0.1ml MTP-Micro-Insert, 15.5 x 5.7mm, clear glass, 1st hydrol. class, flat bottom
TFVol. (ml)	0.41	1.2	1.02	0.23
UsVol. (ml)	0.35	1	0.8	0.2
MWVol. (µl)	25	30	30	40
Res. Vol. (µl)	<1	<3	<3	<10
10 x 96 pcs. per PP-Box				
				
Art. No.	**09 15 0763**	**09 15 0763**	**08 08 0902**	**09 15 0763**
Description	9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm	9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm	8mm PE-Plug blue	9mm PE Cap red, 9 x 5.9mm, 4mm centre hole, Silicone white/PTFE red, with slit, 45° shore A, 1.9mm
96 pcs. per PE-Bag				
Art. No.	**08 05 0890**	**08 05 0894**	**08 05 0895**	**08 05 0944**
Description	Deep Well Block "riplate", Polypropylene, 96 positions (RITTER)	Square Well Block "riplate", Polypropylene, 96 positions (RITTER)	Micro-Tube-Rack-System, Polypropylene, 96 positions (RITTER)	Microtiter-Plate, Polypropylene, 96 positions (RITTER)
10 pcs. per carton				

13.2 96 Position Block Systems with Glass Inserts, sealed with a Sealmat Block Cover

- Sealmat Block covers are made out of Silicone and laminated with a deep-drawn PTFE-Film - like a septa. By laminating the cover with a PTFE-Film instead of spraying it with PTFE it is ensured that a continuous and homogeneous barrier protects the sample from any contamination before, during and after the penetration process.
- The specially designed Micro-Inserts that go along with this sealing system are a little bit higher than the block, so that they are easily exchangeable. They fit into the RITTER Square Well Block and are suitable for volumes up to 1ml. The conical top of the Insert allows collection of even very small sample volumes by the needle. Their wide opening reduces the building of vacuum and so avoids sample loss when removing the Sealmat block cover.
- The Sealmat is available in three versions for different applications:
  - with welled plugs for easy penetration during analysis
  - with welled plugs and slit for pipettes and for avoiding vacuum in the insert in case of multiple injections
  - with solid plugs for sample storage

13.2 96 Position Block Systems with Glass Inserts, sealed with a Sealmat Block Cover (cont.)

Art. No.	08 20 1171	08 20 1181	08 20 1182
Description	Square Well Block "riplate", PP, 96 positions (RITTER), filled with 1ml Micro-Insert, 45 x 7.6mm, clear glass, 1st hydrol. class, 8mm top, covered with Seal*mat* 08 29 1082 (welled plugs for easy penetration) **08 05 0894 + 08 09 1081 + 08 29 1082**	Square Well Block "riplate", PP, 96 positions (RITTER), filled with 1ml Micro-Insert, 45 x 7.6mm, clear glass, 1st hydrol. class, 8mm top, covered with Seal*mat* 08 29 1107 (welled plugs + slit for pipettes) **08 05 0894 + 08 09 1081 + 08 29 1107**	Square Well Block "riplate", PP, 96 positions (RITTER), filled with 1ml Micro-Insert, 45 x 7.6mm, clear glass, 1st hydrol. class, 8mm top, covered with Seal*mat* 08 29 1148 (solid plugs for sample storage) **08 05 0894 + 08 09 1081 + 08 29 1148**
	1 pc. shrink wrapped		
			
Art. No.	08 29 1082	08 29 1107	08 29 1148
Description	Seal*mat* Block cover Silicone nat./PTFE blue transp., with welled plugs for easy penetration	Seal*mat* Block cover Silicone nat./PTFE blue transp., with welled plugs + slit for pipettes	Seal*mat* Block cover Silicone nat./PTFE blue transp., with solid plugs for sample storage
	1 pc. per PE-Bag		
			
Art. No.	08 09 1081	08 09 1081	08 09 1081
Description	1ml SQW Micro-Insert, 45 x 7.6mm, clear glass, 1st hydrol. class, 8mm top	1ml SQW Micro-Insert, 45 x 7.6mm, clear glass, 1st hydrol. class, 8mm top	1ml SQW Micro-Insert, 45 x 7.6mm, clear glass, 1st hydrol. class, 8mm top
TFVol. (ml)	1.18	1.18	1.18
UsVol. (ml)	1	1	1
MWVol. (µl)	40	40	40
Res. Vol. (µl)	<10	<10	<10
	10 x 96 pcs. per PP-Box		
Art. No.	08 05 0894	08 05 0894	08 05 0894
Description	Square Well Block "riplate", Polypropylene, 96 positions (RITTER)	Square Well Block "riplate", Polypropylene, 96 positions (RITTER)	Square Well Block "riplate", Polypropylene, 96 positions (RITTER)
	10 pcs. per carton		

14. ProFill 25mm HPLC Syringe Filters,17mm HPLC Syringe Filters and 30mm HPLC Syringe Filters

14.1 ProFill HPLC Syringe Filters

The ProFill HPLC Syringe Filters are suitable best for sample volumes of 1.5ml up to 100ml, as sample retention can be reduced down to < 0.1ml, if you press with air after filtration. The effective filter area of 3.7cm² allows a quicker filtration as for example with 13mm filters.

The ultrasonically welded Polypropylene housing of the ProFill Syringe Filters ensures high pressure resistance. The membrane is fixed in the housing in such a way that a by-passing of the sample liquid is impossible. The colour-coding enables easy identification of the filter's membrane type. Furthermore membrane type and pore size are printed onto the PE-Bag, in which the filters are tamper-proof evidently packed with 100 pieces each. An additional blue reclosable PP-Box offers further protection for the filters during transportation.

Due to their Luer Lock-Inlet (female) an easy and safe installation of the filter on the syringe is guaranteed. The outlet is designed as Luer Slip (male). Thorough quality controls before and after the manufacturing process guarantee a constantly high quality of the membrane material as well as of the complete filter unit.

						
Art. No.	**25 16 0346**	**25 16 0347**	**25 16 0348**	**25 16 0349**	**25 16 0350**	**25 16 0351**
Description Filter	Pro*Fill* 25mm HPLC Syringe Filter, PTFE, green, 0.20µm	Pro*Fill* 25mm HPLC Syringe Filter, PTFE, natural, 0.45µm	Pro*Fill* 25mm HPLC Syringe Filter, Regenerated Cellulose (RC), blue, 0.20µm	Pro*Fill* 25mm HPLC Syringe Filter, Regenerated Cellulose (RC), yellow, 0.45µm	Pro*Fill* 25mm HPLC Syringe Filter, Nylon (PA), bright blue, 0.20µm	Pro*Fill* 25mm HPLC Syringe Filter, Nylon (PA), bright green, 0.45µm
100 pcs. per PE-Bag add. packed in a blue PP-Box						
	Hydrophobic (water repellent)	Hydrophobic (water repellent)	Hydrophilic	Hydrophilic	Hydrophilic	Hydrophilic
	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm² Luer Lock-Inlet (female) Luer Slip (male)
	chemically high resistant	chemically high resistant	good moistening properties, wet durable	good moistening properties, wet durable	high mechanical stability, i.e. wet + dry durable	high mechanical stability, i.e. wet + dry durable
	for organic solutions, agressive acids and bases or cryo liquids	for organic solutions, agressive acids and bases or cryo liquids	for aqueous and organic media, not suitable for agressive acids and bases	for aqueous and organic media, not suitable for agressive acids and bases	for aqueous and organic media (often used for pharmac. application)	for aqueous and organic media (often used for pharmac. application)
	Acetic acid (10%/25%/100%), Acetic acid anydride, Acetone, Aluminum chloride, Ammonia (1 M/6 M), Ammonium fuoride, Amyl acetate, Benzaldehyde, Benzoic acid, Benzol, Boric acid, Bromine, i-Butanol, n-Butanol, Butyric acid, Butyl acetate, Carbonic acid, Carbon tetrachloride, Chloramine, Chlorobenzene, Chloroacetic acid, Cresol, Chromic acid, Cyclohexane, Cyclohexanol, Cyclohexanone, Diethyl acetmide, Diethyleneglycol, Dimethyl acetamide, Dimethyl formamide, Dimethyl sulfoxide, Ethanol < 98%, Ethyl acetate, Ethylene glycol, Ethylglycol, Formaldehyde (30%), Formic acid (25%/conc.), Heptane, Hexane, 1-Hexanol, Hydrochloric acid (25%/conc.), Hydrogen peroxide (30%), Hydrogen sulphide, Magnesium hydroxide, Methanol, Methyl acetate, Methylene chloride, Methyl glycol, Nitric acid (25%), Nitrobenzene, Oleic acid, Oxalic acid, Paraffin, Pentane, Perchloroethylene, Perchloric acid (1 M), Petroleum ether, Phenol, Phosphoric acid (25%/45%/conc.), Potassium hydroxide (1 M/6 M), i-Propanol, n-Propanol, Propyl acetate, i-Propyl acetate, Propylene glycol, i-Propyl ether, Sodium hydroxide (1 M/6 M), Sodium hypochlorite (20%), Saline solutions (aqueous), Sulphuric acid (25%), Terpentine, Tetrachloroethane, Toluene, Trichloroacetic acid (10%), Trichloroethane, Trichloroethylene, Urea, Xylene		Acetic acid (10%/25%), Acetone, Acetonitrile, Aluminum chloride, Ammonia(1 M) Ammonium fluoride, Amyl acetate, Benzaldehyde, Benzoic acid, Benzol, Boric acid, i-Butanol, n-Butanol, Butyric acid, Butyl acetate, Butyl cellosolve,Carbonic acid, Carbon tetrachloride, Chloramine, Chlorobenzene, Chloroform, Chromic acid, Cyclohexane, Cyclohexanol, Cycloheanone, Diethyl acetamide, Diethyleneglycol, Diethyether, Dimethyl acetamide, 1.4-Dioxan, Ethanol < 98%, Ethyl acetate, Ethylene glycol, Ethylglycol, Formic acid (25%), Heptane, Hexane, Hydrochloric acid (25%), Hydrogen peroxide (30%), Hydrogen sulphide, Methanol, Methyl acetate, Methylene chloride, Methyl glycol, Nitric acid (25%/conc.), Perchloroethylene, Perchloric acid (1 M), Phosphoric acid (25%), i-Propanol, n-Propanol, Propyl acetate, i-Propyl acetate, Propylene glycol, i-Propyl ether, Saline solutions (aqueous), Sulphuric acid (25%), Tetrachloroethane, Tetrahydrofuran, Toluene, Trichloroacetic acid (10%),Trichloroethylene, Urea, Xylene		Acetone, Acetonitrile, Ammonium hydroxide (3N/6N), Amyl acetate, Amyl alcohol, Benzol, Butanol, Butyl acetate, Chloroform, Diethyl acetamide, Diethylether, Dimethyl formamide, Dimethyl sulfoxide, 1.4-Dioxan, Ethanol , Ethyl acetate, Ethylene dichloride, Ethylene glycol, Formaldehyde (37%/4%), Glycerol, Hexane (dry), Kerosene, Methanol, Methyl acetate, Potassium hydroxide (3N), i-Propanol, i-Propylacetate, Sodium hydroxide (1N), Tetrachloro carbonide, Tetrahydrofuran, Toluene, Urea, Xylene	

The indications on chemical resistance are only empirical data without any guarantee. Substances that are not indicated are either not suitable for the membrane material or there is no empirical data available.

14.2 17mm HPLC Syringe Filters

- 17mm HPLC Syringe Filters for small sample volumes.
- Sample Retention < 0.29ml.
- Pressure Rating: 790 kPa (= 7.9 bar / = 115 psi).
- Filter Area: 1.33 cm².
- With Luer Lock-Inlet (female) and Luer Slip (male).

								
Art. No.	**17 16 2076**	**17 16 2077**	**17 16 2078**	**17 16 2079**	**17 16 2080**	**17 16 2081**	**17 16 2082**	**17 16 2083**
Description Filter	17mm HPLC Syringe Filter PTFE, 0.2µm, Injection-moulded ring blue + Print of the membrane type	17mm HPLC Syringe Filter PTFE, 0.45µm, Injection-moulded ring yellow + Print of the membrane type	17mm HPLC Syringe Filter Regenerated Cellulose (RC), 0.2µm, Injection-moulded ring grey + Print of the membrane type	17mm HPLC Syringe Filter Regenerated Cellulose (RC), 0.45µm, Injection-moulded ring brown + Print of the membrane type	17mm HPLC Syringe Filter Nylon (PA), 0.2µm, Injection-moulded ring purple + Print of the membrane type	17mm HPLC Syringe Filter Nylon (PA), 0.45µm, Injection-moulded ring green + Print of the membrane type	17mm HPLC Syringe Filter Glass Fibre Prefilter/ PVDF 0.2µm, Injection-moulded ring black + Print of the membrane type	17mm HPLC Syringe Filter Glass Fibre Prefilter/ PVDF 0.45µm, Injection-moulded ring red + Print of the membrane type
	Hydrophobic (water repellent)		Hydrophilic					
100 pcs. per PE-Bag, add. packed in a blue PP-Box								

14.3 30mm HPLC Syringe Filters

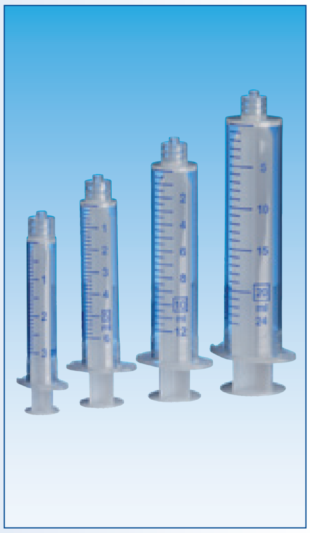
- 30mm HPLC Syringe Filters with injection-moulded ring.
- Sample Retention < 0.137ml.
- Pressure Rating: 620 kPa (= 6.2 bar / = 90 psi).
- Filter Area: 4.91 cm².
- With Luer Lock-Inlet (female) and Luer Slip (male).

				
Art. No.	**30 16 2086**	**30 16 2087**	**30 16 2088**	**30 16 2089**
Description Filter	30mm HPLC Syringe Filter Glass Fibre Prefilter/PTFE, 0.2µm, Injection-moulded ring blue + Print of the membrane type	30mm HPLC Syringe Filter Glass Fibre Prefilter/PTFE, 0.45µm, Injection-moulded ring yellow + Print of the membrane type	30mm HPLC Syringe Filter Glass Fibre Prefilter/Regenerated Cellulose (RC), 0.2µm, Injection-moulded ring grey + Print of the membrane type	30mm HPLC Syringe Filter Regenerated Cellulose (RC), 0.45µm, Injection-moulded ring brown + Print of the membrane type
	Hydrophobic (water repellent)		Hydrophilic	
100 pcs. per PE-Bag, add. packed in a blue PP-Box				

				
Art. No.	**30 16 2090**	**30 16 2091**	**30 16 2092**	**30 16 2093**
Description Filter	30mm HPLC Syringe Filter Glass Fibre Prefilter/Nylon (PA), 0.2µm, Injection-moulded ring purple + Print of the membrane type	30mm HPLC Syringe Filter Glass Fibre Prefilter/Nylon (PA), 0.45µm, Injection-moulded ring green + Print of the membrane type	30mm HPLC Syringe Filter Glass Fibre Prefilter/PVDF 0.2µm, Injection-moulded ring black + Print of the membrane type	30mm HPLC Syringe Filter PVDF 0.45µm, Injection-moulded ring red + Print of the membrane type
	Hydrophilic			
100 pcs. per PE-Bag, add. packed in a blue PP-Box				

	
Art. No.	**30 16 2094**
Description Filter	30mm HPLC Syringe Filter, Glass Fibre/GL Microfiber, 1.2 µm, Injection-moulded ring orange + print of the membrane type for the filtration of big particles
100 pcs. per PE bag, add. packed in a blue PP-Box	

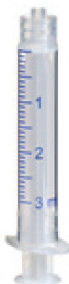
15. HPLC certified Plastic Disposable Syringes with Luer Lock and Luer Slip



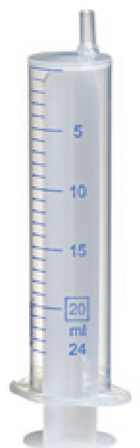
HPLC certified, non sterile disposable syringes made of solvent robust polypropylene for all syringe filter applications

- Each manufactured batch is HPLC controlled and supplied with an appropriate certificate upon request.
- Syringes manufactured according to ISO 13485 (Medical devices).
- Luer Lock manufactured according to ISO 594-2 / DIN EN 1707.
- Luer Slip manufactured according to ISO 594-1 / DIN EN 20594-1.
- Two-part, all-plastic construction made of a chemically resistant, inert polypropylene.
- No rubber plunger seals or silicone lubricants that may cause sample contamination.
- Free of latex, free of plasticizers, free of PVC.
- Safe functional back-stop feature.
- Easy to read permanent graduations.
- All Luer Lock syringes have centered tips.
- Available with Luer Lock and Luer Slip connections.

15.1 Plastic Disposable Syringes with Luer Lock

Scale 1:2				
Art. No.	**02 36 2399**	**05 36 2400**	**10 36 2401**	**20 36 2402**
Description	2ml Disposable Syringe non sterile ***Luer Lock***	5ml Disposable Syringe non sterile ***Luer Lock***	10ml Disposable Syringe non sterile ***Luer Lock***	20ml Disposable Syringe non sterile ***Luer Lock***
100 pcs. per PE-Bag				

15.2 Plastic Disposable Syringes with Luer Slip

Scale 1:2				
Art. No.	**02 36 2403**	**05 36 2404**	**10 36 2405**	**20 36 2406**
Description	2ml Disposable Syringe non sterile ***Luer Slip***	5ml Disposable Syringe non sterile ***Luer Slip***	10ml Disposable Syringe non sterile ***Luer Slip***	20ml Disposable Syringe non sterile ***Luer Slip***
100 pcs. per PE-Bag				

16. GC Injection Port Septa

- Universal, longlife GC-Septa
- Suitable for inlet temperatures of up to 340°C
- Low bleeding (release of Siloxanes)
- Good penetration and sealing properties (low fragmentation)
- Long lifetime
- No sticking to hot surfaces, so easily exchangeable
- Ready-to-use; no further pre-treatment necessary
- Packed with 25 pieces in a resealable amber Screw Neck Vial of 1st hydrol. class
- Available for all common gas chromatographs; compatibility as shown below

07 18 0935	09 18 0936	10 18 0937	11 18 0938	12 18 0939	17 18 0940
Shimadzu Plug, transparent	9.5mm Universal HT Injection Port Septa, transparent	10mm Universal HT Injection Port Septa, transparent	11mm Universal HT Injection Port Septa, transparent	12.5mm Universal HT Injection Port Septa, transparent	17mm Universal HT Injection Port Septa, transparent
Shimadzu, all models	***Agilent (HP),*** 5700/5880 Series ***Varian,*** Injector Type: Packed Columns ***Varian (CP),*** all models ***Tracor,*** 550, 560 ***Gow-Mac,*** all models ***Finnigan,*** 9001, QCQ™, GCQ™, Trace™2000 ***Antek*** ***Unicam,*** 4600	***Agilent (HP),*** 5890/6890 Series 5700/5880 Series ***Varian,*** Injector Type: Packed Columns Injector Type: Split/Splitless	***Agilent (HP),*** 5890/6850/6890 Series, 5700/5880 Series, 5880A Series ***Varian,*** 3300, 3400, 3500, 3600, 3700, Vista (Split/Splitless) ***Gow-Mac,*** 6890 Series ***PerkinElmer,*** Sigma Series, 900, 990 8000 Series Autosys (XL)	***Tracor,*** 220, 222	***Thermo Scientific Quest,*** Trace ***Fisons/Carlo Erba*** 8000 Series ***Finnigan,*** GCQ™/Trace™
25 pcs. in an amber Screw Neck Vial					

17. GC Capillary Connectors

02 17 0472		02 17 0473		
Universal Capillary Connector for 2 columns		Universal Y-Capillary Connector for 3 columns		For precise connections of Fused-Silica Capillary Columns in GC Universal Capillary Connectors connect all columns with an inner diameter of 0.20 - 0.53mm and an outer diameter of 0.30 - 0.75mm
10 pcs. per PP-Box		1 pc. per PP-Box		

TIP

Upon request vials with your logo can be manufactured as a special production

TIP

Upon request vials with a barcode label are available

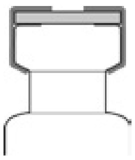
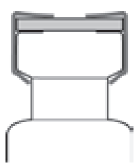
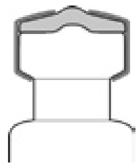
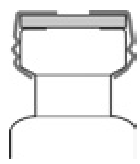
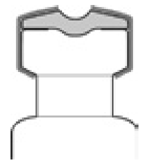
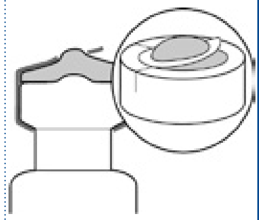
TIP

Upon request pre-sealed vials are deliverable

18. Crimping Tools

- Easy and convenient handling.
- Chemically resistant surface finish especially designed for the application in labs.
- Hardened crimping jaws made of a special alloy that guarantees long life.
- Adjustable in crimping pressure limitation by a screw in the handle.
- Additionally 11mm, 13mm and 20mm crimpers are adjustable in crimping height by screwing up or down the pressure block in the crimping head with a hexagon key.
- Repair Service for crimping tools made by La-Pha-Pack.

An inappropriate crimp can be recognized by:

Correct Crimp					
Flat cap surface Flat septa surface 					
	Untight Aluminum edge	Upward bulge of the crimp cap	Deformation of the crimp cap sides	Convex looking liner	Rounded edges/Upward bulge of the Cap/Liner
Tight fitting of the Aluminum edge Plain + undeformed cap sides	Adjust crimping pressure with the screw in the handle + Adjust crimping height with the hexogen key (s. below) (undercrimped)	Adjust crimping pressure with the screw in the handle + Adjust crimping height with the hexogen key (s. below) (overcrimped)	Adjust crimping height with the hexogen key (s. below) (overcrimped)	Adjust crimping pressure with the screw in the handle (overcrimped)	Especially with Headspace Caps it is important not to overcrimp them. If the Aluminum is stretched too much under the crimp neck, the bridges of the scorelines suffer too much stress and can break open at even low pressure (below 3 bars) or - in worst case - can even tear apart beside the scorelines (overcrimped)

An inappropriate crimp cannot be recognized by trying to turn the Seal, as completely PTFE-laminated liners have a very slippery surface on the glass rim, which allows anyone to turn the cap, if the right torque is used.
The turning of the cap is even easier when the liner is sitting on a Headspace (bevelled top) glass rim, as it then only has very small surface to rest on.

18.1 Manual Crimping Tools

08 06 0005	11 06 0006	13 06 0007	20 06 0008	28 06 0320	32 06 0135
Crimper for 8mm Aluminum Caps	Crimper for 11mm Aluminum Caps	Crimper for 13mm Aluminum Caps	Crimper for 20mm Aluminum Caps	Crimper for 28mm Aluminum Caps	Crimper for 32mm Aluminum Caps
1 pc. per PP-Box					

13 06 0069	13 06 0319	20 06 0043	20 06 0170	28 06 0190	
Crimper for 13mm Flip Top/Flip Off Seals	Crimper for 13mm Flip Tear Up Seals	Crimper for 20mm Flip Top/Flip Off Seals	Crimper for 20mm Flip Tear Up Seals	Crimper for 28mm Flip Top/Flip Off Seals	Special sizes and Crimpers for Pump Spray Closures on request!
1 pc. per PP-Box					

You can download the appropriate instruction for the adjustment of our crimpers from our Website as PDF-File (Icon "Products"; Subchapter "Crimping Tools").

18.2 Manual Decapping Tools

08 07 0001	11 07 0002	13 07 0003	20 07 0004	28 07 0092	32 07 0078
Decapper for 8mm Aluminum Caps	Decapper for 11mm Aluminum Caps	Decapper for 13mm Aluminum Caps	Decapper for 20mm Aluminum Caps	Decapper for 28mm Aluminum Caps	Decapper for 32mm Aluminum Caps
1 pc. per PP-Box	1 pc. per PP-Box	1 pc. per PP-Box	1 pc. per PP-Box	1 pc. per PP-Box	1 pc. per PP-Box

18.3 Stainless Steel Cleanroom Crimping Tools

- The crimping/decapping mechanism is corrosion and heat resistant while the stainless steel construction removes the need for any protective coating on the handle or crimp head.
- Can withstand repeated sterilization for cleanroom use without the risk of damaging the tool.
- Available in 11mm,13mm and 20mm sizes.
- Crimping tools are adjustable in crimping pressure and height to offer optimal crimping results on varying vial styles.

18.3.1 Manual Crimping Tools

11 06 2225	13 06 2227	20 06 2229
11mm Crimper made of stainless steel, sterilizable for cleanroom applications	13mm Crimper made of stainless steel, sterilizable for cleanroom applications	20mm Crimper made of stainless steel, sterilizable for cleanroom applications
1 pc. per PP-Box	1 pc. per PP-Box	1 pc. per PP-Box

Other sizes are available!

18.3.2 Manual Decapping Tools

11 07 2226	13 07 2228	20 07 2230
11mm Decapper made of stainless steel, sterilizable for cleanroom applications	13mm Decapper made of stainless steel, sterilizable for cleanroom applications	20mm Decapper made of stainless steel, sterilizable for cleanroom applications
1 pc. per PP-Box	1 pc. per PP-Box	1 pc. per PP-Box

Other sizes are available!

18.4 Pneumatic Hand-held Crimping Tool

- Crimping and decapping tool, operated by compressed air (6.2bar = 90psi minimum net pressure).
- Easy handling; just by pushing the button the vial is crimped or decapped.
- Interchangeable "C"-Heads for crimping and decapping in various sizes (pls. see chapters 18.5 + 18.6).
- Adjustable, constant and reproduceable crimping pressure.
- Space-saving installation with a balancer above the working bench.
- Ergonomical handling, as the balancer compensates the weight of the pneumatic crimper and facilitates steady and precise crimping.
- Inlet air supply connector G ¼ " thread (female); connection to be provided by customer.
- The pneumatic crimping tool can be delivered with stand and foot switch or with hanging device and trigger in the handle.
- CE mark of conformity.

You can download the appropriate instruction for the handling of our Pneumatic Crimping Tool from our Website as PDF-File. (Icon "Products"; Subchapter "Crimping Tools")

00 00 0089	00 00 0120	00 00 1898
Pneumatic Basic Crimping Tool, including pressure regulator, safety valve and Nylon (PA) twisted hose	Hanging device with balancer	Stand with foot switch for pneumatic basic crimping tool
1 pc. per carton	1 pc. per carton	1 pc. per carton

18.5 Crimping Heads for Pneumatic Hand-held Crimping Tool

08 06 0149	11 06 0150	13 06 0134	20 06 0088	32 06 0151
Crimping Head for 8mm Aluminum Caps	Crimping Head for 11mm Aluminum Caps	Crimping Head for 13mm Aluminum Caps	Crimping Head for 20mm Aluminum Caps	Crimping Head for 32mm Aluminum Caps
1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton
13 06 0091	**20 06 0090**	**20 06 0148**	**28 06 0191**	**32 06 0192**
Crimping Head for 13mm Flip Top/Flip Off Seals	Crimping Head for 20mm Flip Top/Flip Off Seals	Crimping Head for 20mm Flip Tear Up Seals	Crimping Head for 28mm Flip Top/Flip Off Seals	Crimping Head for 32mm Flip Top/Flip Off Seals
1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton

Special sizes on request!

18.6 Decapping Heads for Pneumatic Hand-held Crimping Tool

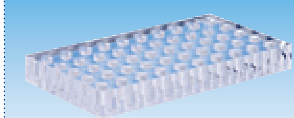
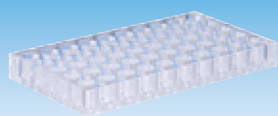
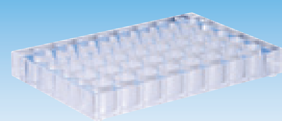
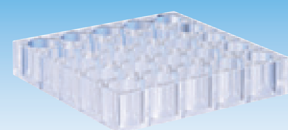
08 07 0153	11 07 0107	13 07 0154	20 07 0155	28 07 0156	32 07 0157
Decapping Head for 8mm Aluminum Caps	Decapping Head for 11mm Aluminum Caps	Decapping Head for 13mm Aluminum Caps	Decapping Head for 20mm Aluminum Caps	Decapping Head for 28mm Aluminum Caps	Decapping Head for 32mm Aluminum Caps
1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton	1 pc. per carton

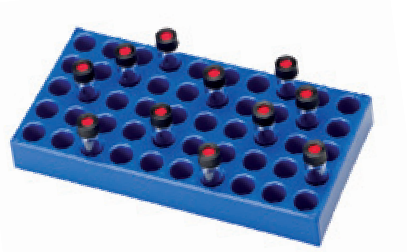
Special sizes on request!

19. Vial Racks and Storage Boxes

19.1 Vial Racks

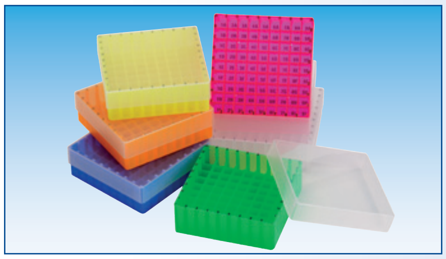
- Easy handling and transportation of sample vials.
- Filling visible because of transparent acrylic material.
- Stable standing position because of solid construction.
- Stack stability because of silicone base.
- Racks for 8mm resp. 11mm vials can even hold conically shaped sample vials.
- Custom-tailored vial racks can be manufactured according to customer's specifications.

				
Art. No.	**08 21 1000**	**12 21 1001**	**15 21 1664**	**24 21 1002**
Description	Vial Rack, Acrylic, 173 x 95 x 20mm, 50 cavities with a diameter of 8.5/3mm	Vial Rack, Acrylic, 173 x 95 x 20mm, 50 cavities with a diameter of 12mm	Vial Rack, Acrylic, 175.8 x 115.5 x 20mm 40 cavities with a diameter of 15.1mm	Vial Rack, Acrylic, 160 x 160 x 30mm, 25 cavities with a diameter of 24mm
	1 piece shrink-wrapped			
	Suitable for e.g.: 08 09 0258, 08 09 0284, 08 09 0305, 08 09 0606, 08 09 0845, 08 09 0953, 08 09 1080, 08 14 0513, 08 14 0595, 08 14 0641, 08 14 1168, 08 14 1169, 40 09 0146	Suitable for e.g.: 10 09 0743, 10 09 1196, 10 09 1197, 11 09 0210, 11 09 0259, 11 09 0356, 11 09 0382, 11 09 0415, 11 09 0417, 11 09 0419, 11 09 0476, 11 09 0477, 11 09 0500, 11 09 0519, 11 09 0520, 11 09 0619, 11 09 0620, 11 09 0627, 11 09 0644, 11 09 0645, 11 09 0831, 11 09 0921, 11 09 0999, 11 09 1241, 11 09 1242, 11 09 1956, 11 09 1957, 11 09 2357, 11 09 2275, 11 09 2276, 11 09 2353, 11 14 0544, 11 14 0545, 11 14 1189, 11 14 1190, 11 14 1655, 11 14 1656, 11 19 0932, 11 19 0933, 11 19 1021, 11 19 1022, 11 19 1205, 11 19 1516, 11 19 1706, 11 19 1707	Suitable for e.g.: 13 09 0222, 13 09 0280, 13 09 1335, 13 09 1336, 13 09 2574, 15 14 0548, 15 14 0562	Suitable for e.g.: 18 09 0864, 18 09 0906, 18 09 0907, 18 09 1306, 18 09 1307, 18 09 1310, 18 09 1311, 20 09 0297, 20 09 0342, 20 09 0440, 20 09 0795, 20 09 0796, 20 09 0801, 20 09 0802, 20 09 0873, 20 09 1222, 20 09 1223, 20 09 1405, 20 09 1690, 20 09 1691

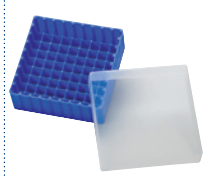
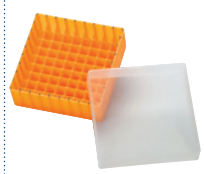
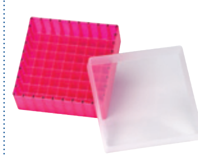
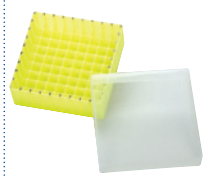
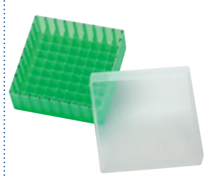
		
Art. No.	**12 21 2187**	**15 21 2480**
Description	PP Vial-Rack, (200 x 105 x 17mm), for 1.5ml vials, 50 cavities, blue, stackable	PP Vial-Rack, (230 x 117 x 28mm), for 4ml vials, 50 cavities, blue, stackable
	5 piece shrink-wrapped	
	Suitable for e.g.: 10 09 0743, 10 09 1196, 10 09 1197, 11 09 0210, 11 09 0259, 11 09 0356, 11 09 0382, 11 09 0415, 11 09 0417, 11 09 0419, 11 09 0476, 11 09 0477, 11 09 0500, 11 09 0519, 11 09 0520, 11 09 0619, 11 09 0620, 11 09 0627, 11 09 0644, 11 09 0645, 11 09 0831, 11 09 0921, 11 09 0999, 11 09 1241, 11 09 1242, 11 09 1956, 11 09 1957, 11 09 2357, 11 09 2275, 11 09 2276, 11 09 2353, 11 14 0544, 11 14 0545, 11 14 1189, 11 14 1190, 11 14 1655, 11 14 1656, 11 19 0932, 11 19 0933, 11 19 1021, 11 19 1022, 11 19 1205, 11 19 1516, 11 19 1706, 11 19 1707	Suitable for e.g.: 13 09 0222, 13 09 0280, 13 09 1335, 13 09 1336, 13 09 2574, 15 14 0548, 15 14 0562

19.2 PP Storage Boxes

- Safe standing position on the laboratory table and during transport due to specific cavities related to the vial diameter.
- Ideal for space-saving storage in fridges, as the transparent lid prevents condensations on the closures and thus avoids a possible contamination in the cooling unit.
- Temperature resistant from -80 degrees up to +100 degrees.
- Alpha Numeric Coding (1.5ml, 4ml) for clear sample identification.
- Unbreakable polypropylene bottom and lid, stackable.
- Chemically resistant and fairly robust; autoclavable.

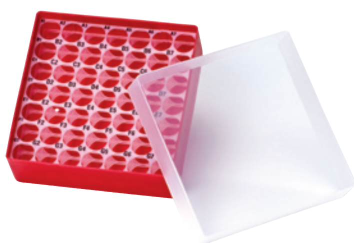
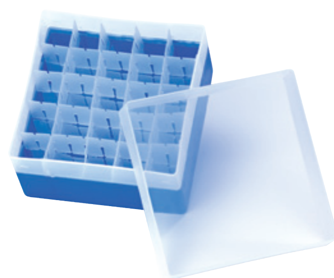


19.2.1 PP Storage Boxes for 1.5ml Sample Vials

						
Art. No.	**Blue 12 21 2420**	**Orange 12 21 2421**	**Pink 12 21 2422**	**Yellow 12 21 2423**	**Green 12 21 2424**	**Transparent 12 21 2425**
Description	PP Storage Box for 1.5ml (1.8ml, 2ml) vials or 2ml Shell Vials, with cover, (130x130x45mm), 81 cativities with alphanumeric coding of all 4 margins as well as the carities at the bottom					
	1 pc. per PE-Bag					

19.2.2 PP Storage Boxes for 4ml Sample Vials

19.2.3 PP Storage Boxes for 5ml, 10ml and 20ml Headspace Vials

		
Art. No.	**Red 15 21 2426**	**Blue 24 21 2427**
Description	PP Storage Box for 4ml vials or 4ml Shell Vials, red, with cover, (130x130x52mm), 49 cavities with alphanumeric coding at the cavities	PP Storage Box for 5ml, 10ml and 20ml Headspace-Vials, blue, with cover, (130x130x102mm), 25 cavities
	1 pc. per PE-Bag	

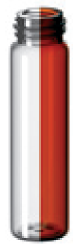
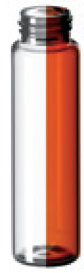
19.2.4 PP Storage Boxes for 20ml, 30ml and 40ml EPA-Vials with cover

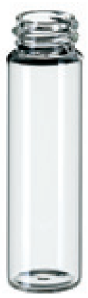
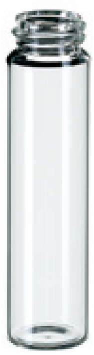
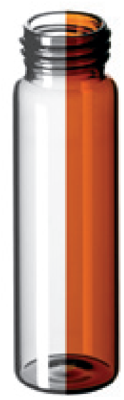
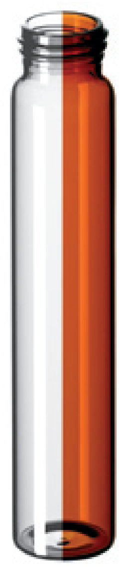
		
Art. No.	**Violet 28 21 2428**	**Violet 28 21 2429**
Description	PP Storage Box for 20ml EPA-Vials, violet, with cover, (130x130x80mm), 16 cavities	PP Storage Box for 30ml and 40ml EPA-Vials, violet, with cover, (130x130x105mm), 10 cavities
	1 pc. per PE-Bag	

20. Screw Neck Vials for Storage Purposes

- Screw Neck Vials for storage purposes made out of 1st hydrol. class glass.
- Vials with different volumes are available.
- Clear and amber Vials.
- Seals with different septa materials.
- Barcode labelling upon request.

20.1 Screw Neck Vials for Storage Purposes

Scale 1:2	full-scale s. p. 92	full-scale s. p. 92	full-scale s. p. 91	full-scale s. p. 91	full-scale s. p. 89	full-scale s. p. 89
						
Art. No.	**11 09 0210**	**11 09 0259**	**13 09 0222**	**13 09 0280**	**15 09 1703** **15 09 1774**	**15 09 1657** **15 09 1800**
Description	1.5ml Screw Neck Vial 8-425, 32 x 11.6mm, clear glass, 1st hydrol. class	1.5ml Screw Neck Vial 8-425, 32 x 11.6mm, amber glass, 1st hydrol. class	4ml Screw Neck Vial 13-425, 45 x 14.7mm, clear glass, 1st hydrol. class	4ml Screw Neck Vial 13-425, 45 x 14.7mm, amber glass, 1st hydrol. class	8ml Screw Neck Vial 15-425, 61 x 16.6mm, clear/amber glass, 1st hydrol. class	12ml Screw Neck Vial 15-425, 66 x 18.5mm, clear/amber glass, 1st hydrol. class
TFVol. (ml)	1.9	1.9	5	5	8.9	12
UsVol. (ml)	1.5	1.5	4.1	4.1	8	11
MWVol. (µl)	200	200	800	800	1500	1500
Res. Vol. (µl)	<110	<110	<400	<400	800	800
	100 pcs. per PP-Box				100 pcs. per carton	

Scale 1:2	full-scale s. p. 89	full-scale s. p. 89	full-scale s. p. 89	full-scale s. p. 89	full-scale s. p. 89	full-scale s. p. 89
						
Art. No.	**18 09 1704**	**20 09 1705**	**24 09 0589** **24 09 0927**	**24 09 0839** **24 09 0923**	**24 09 0402** **24 09 0928**	**24 09 1089** **24 09 1090**
Description	16ml Screw Neck Vial 18-400, 71 x 20.6mm, clear glass, 1st hydrol. class	20ml Screw Neck Vial 20-400, 86 x 22.7mm, clear glass, 1st hydrol. class	20ml Screw Neck Vial 24-400, 57 x 27.5mm, clear/amber glass, 1st hydrol. class	30ml Screw Neck Vial 24-400, 72.5 x 27.5mm, clear/amber glass, 1st hydrol. class	40ml Screw Neck Vial 24-400, 95 x 27.5mm, clear/amber glass, 1st hydrol. class	60ml Screw Neck Vial 24-400, 140 x 27.5mm, clear/amber glass, 1st hydrol. class
TFVol. (ml)	17.4	24.5	23.3	31.1	42.9	64.4
UsVol. (ml)	16	23	20	27.4	40	60
MWVol. (µl)	1500	1500	1	1.4	1.4	1.4
Res. Vol. (µl)	800	800	0.5 (ml)	0.7 (ml)	0.7 (ml)	0.7 (ml)
	100 pcs. per carton		100 pcs. per PP-Box			

TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

20.2 PP Screw Seals for Storage Vials

- Seals with different septa material are available.
- Corresponding centre hole versions are partially available.
- Packed with 100 pieces in tamper-proof evident zip-lock PE-bags.

20.2.1 PP Screw Seals ND8 for 11 09 0210 and 11 09 0259

			
Art. No.	**08 15 0654**	**08 15 1653**	**08 15 1040**
Description Cap	PP Screw Cap black, closed top		
Septa Material	Nat. Rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.3mm	1.3mm
100 pcs. per PE-Bag			

20.2.2 PP Screw Seals ND13 for 13 09 0222 and 13 09 0280

			
Art. No.	**13 15 0439**	**13 15 1638**	**13 15 0648**
Description Cap	PP Screw Cap black, closed top		
Septa Material	Nat. Rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone cream/PTFE red
Durometer	60° shore A	55° shore A	55° shore A
Thickness	1.3mm	1.3mm	1.5mm
100 pcs. per PE-Bag			

20.2.3 PP Screw Seals ND15 for 15 09 1703, 15 09 1774, 15 09 1657, 15 09 1800

						
Art. No.	**15 15 0793**	**15 15 1748**	**15 15 1083**	**15 15 1938**	**15 15 1932**	**15 15 1989**
Description Cap	PP Screw Cap black, closed top			PP Screw Cap black, 9mm centre hole		
Septa Material	Nat. Rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red	Nat. Rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A	60° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.6mm	1.3mm	1.3mm	1.6mm	1.3mm
100 pcs. per PE-Bag						

20.2.4 PP Screw Seals ND18 for 18 09 1704

			
Art. No.	**18 15 1387**	**18 15 1132**	**18 15 2069**
Description Cap	PP Screw Cap black, closed top		
Septa Material	Butyl red/PTFE grey	Silicone blue transparent/ PTFE white	Silicone white/PTFE red
Durometer	55° shore A	45° shore A	55° shore A
Thickness	1.6mm	1.7mm	1.5mm
100 pcs. per PE-Bag			

20.2.5 PP Screw Seals ND20 for 20 09 1705

			
Art. No.	**20 15 1803**	**20 15 1805**	**20 15 1804**
Description Cap	Polypropylene Screw Cap white, closed top		
Septa Material	Nat. Rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.3mm	1.3mm
100 pcs. per PE-Bag			

20.2.6 PP Screw Seals ND24 for 24 09 0589, 24 09 0927, 24 09 0839, 24 09 0923, 24 09 0402, 24 09 0928, 24 09 1089, 24 09 1090

				
Art. No.	**24 15 1395**	**24 15 1540**	**24 15 1007**	**24 04 0841**
Description Cap	PP Screw Cap white, closed top			UltraBond Seal white, closed top
Septa Material	Butyl red/PTFE grey	Silicone white/PTFE beige	PTFE/EPDM/PTFE	Silicone natural/PTFE beige
Durometer	55° shore A	45° shore A	65° shore A	45° shore A
Thickness	2.5mm	3.2mm	2.0mm	3.2mm
100 pcs. per PE-Bag				

21. Special Products

- Special products may be vials, septa, seals or any other chromatography accessories.
- Special products are non-stock items and may require a minimum order quantity.
- In the vial chapter we would like to point out our cylindrical Jars ND40 for soil samples.
- In the septa chapter we would like to draw your attention to our liners for Schott Screw Caps.
- In the seal chapter we have a broad variety of 13mm crimp seals.

21.1 Special Vials

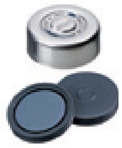
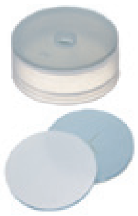
Art. No.	**11 09 0831**	**13 09 0236**	**13 09 2574**	**40 09 0678**	**20 09 1822**
Description	2.5ml Crimp Neck Vial, 41 x 11.6mm, clear glass, 1st hydrol. class, wide opening	2ml Crimp Neck Vial, 32 x 16mm, clear glass, 1st hydrolytic class	4ml Crimp Neck Vial, 45 x 14.7mm, clear glass, 1st hydrol. class	50ml Cylindrical Jar, 69.5 x 44mm, clear glass, 3rd hydrolytical class with Screw Neck ND40	100ml Crimp Neck Vial, 49 x 75mm, clear glass, 1st hydrolytical class, DIN-Crimp Neck
TFVol. (ml)	2.7	3.6	5	65.5	114
UsVol. (ml)	2.4	3	4.1	50	100
MWVol. (µl)	200	800	800	5	20
Res. Vol. (µl)	<100	<400	<400	2.5	10.4

21.2 Special Seals

Art. No.	**13 03 1381**	**13 03 1382**	**13 03 1383**	**13 03 0307**	**13 03 0309**
Description Cap	13mm Aluminum Cap clear lacquered, 6mm centre hole	13mm Aluminum Cap clear lacquered, complete tear off	13mm Aluminum Cap clear lacquered, centre tear off	13mm Aluminum Cap clear lacquered, 6mm centre hole	13mm Aluminum Cap clear lacquered, complete tear off
Septa Material	Butyl red/PTFE grey	Butyl red/PTFE grey	Butyl red/PTFE grey	Pharma-Fix-Septa (Butyl/PTFE)	Pharma-Fix-Septa (Butyl/PTFE)
Durometer	55° shore A	55° shore A	55° shore A	50° shore A	50° shore A
Thickness	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm
	100 pcs. per PE-Bag				

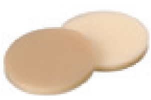
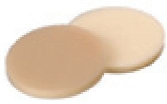
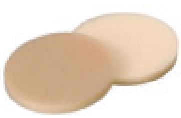
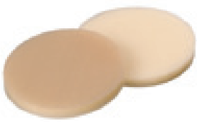
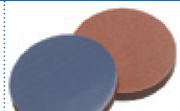
TFVol. = Total Volume/Filling Volume (ml), UsVol. = Usable Volume (ml), MWVol. = Minimum Working Volume (µl), Res. Vol. = Residual Volume (µl)

21.2 Special Seals (cont.)

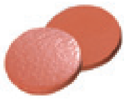
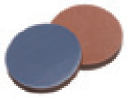
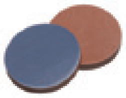
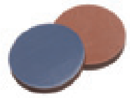
					Further Special Seals may be available upon request!
Art. No.	**13 03 0308**	**22 15 1824**	**22 15 1869**	**40 15 0674**	
Description Cap	13mm Aluminum Cap clear lacquered, centre tear off	PE-Cap, transparent, 22 x 9.1mm, 4.3mm centre hole	PE-Cap, transparent, 22 x 9.1mm, 6.0mm centre hole	40mm Polypropylene Screw Cap black, closed top	
Septa Material	Pharma-Fix-Septa (Butyl/PTFE)	Silicone blue transparent/ PTFE white, Y-slitted	Silicone blue transparent/ PTFE white, Y-slitted	PTFE virginal	
Durometer	50° shore A	45° shore A	45° shore A	53° shore D	
Thickness	2.0mm	1.3mm	1.3mm	0.5mm	
100 pcs. per PE-Bag					

21.3 Special Septa

21.3.1 Septa for Schott Screw Caps

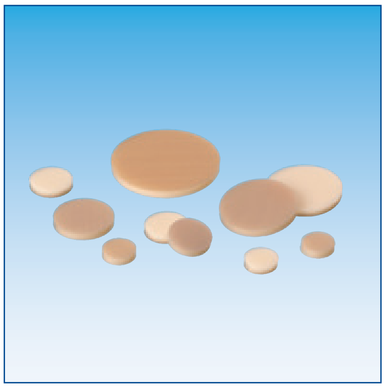
							Further Septa in various materials and diameters upon request!
Art. No.	**12 02 0468**	**16 02 0469**	**23 02 0470**	**30 02 0471**	**43 02 0413**	**43 02 2095**	
Septa Material	12.9mm Septa, Silicone cream/ PTFE beige ***for Schott Screw Cap GL14***	16.8mm Septa, Silicone cream/ PTFE beige ***for Schott Screw Cap GL18***	23.4mm Septa, Silicone cream/ PTFE beige ***for Schott Screw Cap GL25***	30.3mm Septa, Silicone cream/ PTFE beige ***for Schott Screw Cap GL32***	43.2mm Septa, Silicone cream/ PTFE beige ***for Schott Screw Cap GL45***	43.2mm Septa, Butyl red/ PTFE grey ***for Schott Screw Cap GL45***	
Durometer	55° shore A	55° shore A	55° shore A	55° shore A	55° shore A	55° shore A	
Thickness	3.2mm	3.2mm	3.2mm	3.2mm	3.2mm	2.5mm	
1000 pcs. per PE-Bag					500 pcs. per PE-Bag		

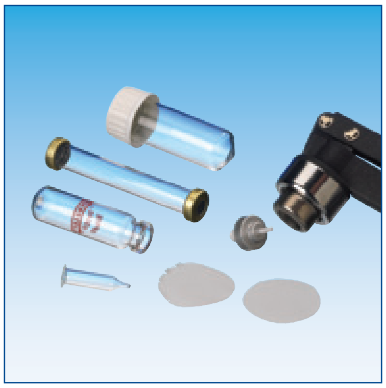
21.3.2 Septa 13mm

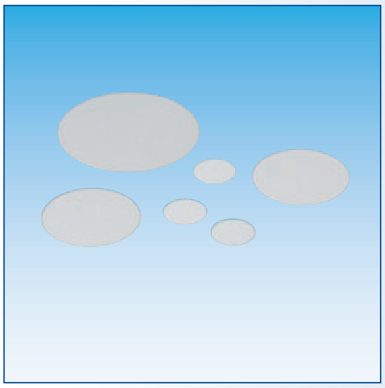
					
Art. No.	**13 02 0474**	**13 02 1470**	**13 02 1379**	**13 02 1380**	**13 02 0261**
Septa Material	13mm Septa, Nat. Rubber red-orange/ TEF transparent	13mm Septa, Butyl red/PTFE grey	13mm Septa, Butyl red/PTFE grey	13mm Septa, Butyl red/PTFE grey	13mm Septa, Pharma-Fix-Septa (Butyl/PTFE)
Durometer	60° shore A	55° shore A	55° shore A	55° shore A	50° shore A
Thickness	1.3mm	1.3mm	1.6mm	2.0mm	2.0mm
1000 pcs. per PE-Bag					

We do a lot of special production for all of the products we offer.

Should you have a special request, please do not hesitate to contact us any time.

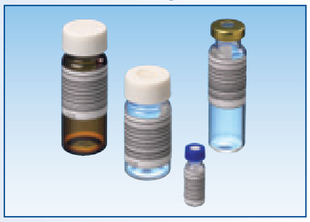






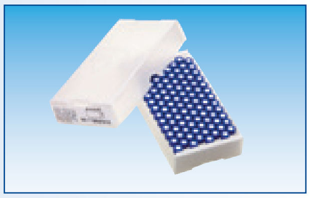
22. Special Services

Barcode Labelling of Vials



In cases of high sample throughput often barcoded vials are requested. Through the barcode the sample can be traced from sample preparation through the whole process of analysis and identification at any point of time is guaranteed. Sample mix-ups should not occur and administration of the analysis data is kept down to a minimum.
We can provide you with barcode-labelled vials. The labels withstand temperatures of approx. -40°C up to 140°C and have a high chemical resistance.
Recommended is the so-called back side print, as the barcode is protected by the polyester film and thereby is scratch and wiping resistant. Furthermore the labels stand out by a high UV-stability.
Further information on length of a possible barcode (readability by the barcode reader), etc. can be obtained any time from us.

Pre-Screwed/Pre-Crimped Vials



Sometimes customers wish to obtain vials which are already crimped or screwed with a seal of their choice. For example the tobacco industry analyses the smoke of a cigarette which is injected into an already crimped vial. Also a lot of EPA Vials are bought with the appropriate closure already screwed on top of the vial.
La-Pha-Pack can provide you with any type of pre-sealed vial.

2in1 KITs

To carry out an analysis, the user always needs two components at the same time: vial and closure. To fulfill this need in a convenient way La-Pha-Pack offer 2in1 KITs containing 100 vials and 100 seals in a blue, reclosable PP-box. All advantages of the individual items (CleanPack packaging of the vials, tamper-proof evident packaging of vials and seals, traceability through a batch numbering system, etc.) still remain. Furthermore the customer only has to reorder one article instead of two, which makes life more easy. The following product lines can be obtained as a 2in1 KIT:
Screw Neck Vials/Seals ND8 (Chapter 2, pages 18-20)
Short Thread Vials/Seals ND9 (Chapter 3, pages 21-25)
Screw Neck Vials/Seals ND10 (Chapter 4, page 26)
Crimp Neck Vials/Seals ND11 (Chapter 5, pages 27-29)
Snap Ring Vials/Seals ND11 (Chapter 6, pages 30-31)
Plastic Vials ND9 and Plastic Micro-Vials ND9 + ND11 (Chapter 7, Page 32)
Screw Neck Vials/Seals ND13 (Chapter 8, pages 33-34)
Shell Vials ND8, ND11 + ND15 with PE-Plugs (Chapter 9, pages 35)
20ml Headspace Vials/Seals ND20 + ND18 (Chapter 10, pages 36-43)

Special Packaging

Our standard packaging unit for seals is 100 pieces per PE-Bag and for liners 1,000 pieces per PE-Bag. However, our automatic counting and packaging machines are also capable to pack in any quantity a customer may request, e.g. 144 or 200 pieces per PE-Bag.

Our vials are packed with 100 pieces per PP-box by standard. However, we also offer for 1.5ml Vials to additionally pack 10 boxes of 100 pieces each into an additional PP-box as a pack of 1,000 pieces.

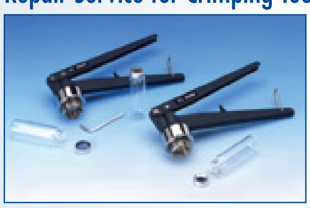
Special Production Runs

We make special production runs for:
a) Vials: special diameters, special designs (different threads, necks, bottoms, etc.), vials with logos printed on the glass, different glass classes, etc.
Minimum order quantities depend very much on availability of the glass tubing, possibly necessary extra tooling and set up time for the machinery.
b) Vial Racks: special outer dimensions, sizes of the cavities, number of cavities, distance between each cavity
Minimum order quantity: approx. 20 pieces
c) Septa: special diameter, thickness or material, special form
Minimum order quantity depends very much on availability of the material, punching tool and set up time for the machinery; however, normally we are fairly flexible here even for smaller order quantities
d) Seals: special caps or liners
Minimum order quantity depends very much on availability of the requested cap and liner
e) Crimpers: for special design caps (like Pump Spray Closures, for caps with special size, etc.)
If technically realizable, minimum order quantity is 1 piece, however design costs may occur

Certificates, Chromatograms, QC Reports

As a DIN EN ISO 9001:2008 certified company we do a thorough quality control according to DIN/ISO standards. The results of any QC test are documented in a QC report which can be put at your disposal upon request.
Furthermore some customers require (especially for TOC anaylsis) EPA Vials with a certificate of cleanliness. We have certified batches of all EPA vials on stock which have been analysed in an external lab regarding organic substances. Should you require certified EPA Vials with a print of the analysis results you have to give an appropriate indication in the order beside the article No. of the vial and we will provide you with the test results against a small surcharge. A demo version of our quality report as well as a copy of our cleanliness certificate is shown under the point "Technical Information" on our website.

Repair Service for Crimping Tools



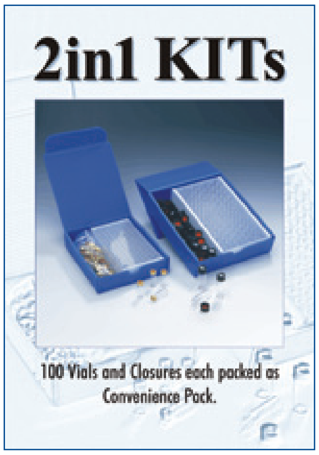
As an additional service for our customers we offer a repair service for crimping tools bought from La-Pha-Pack.

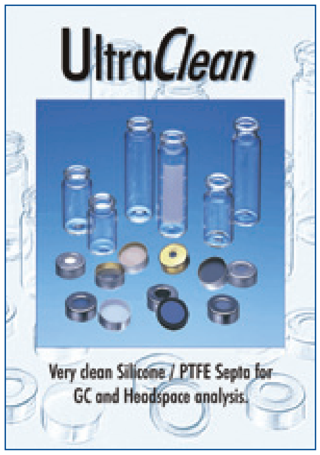
22. Special Services

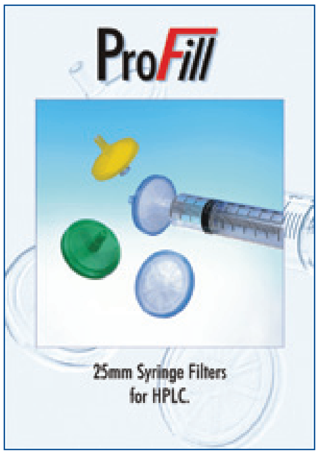
Product Names, Abbreviations, Explanations, Structure Article Description

A) Product and Brand Names

La-Pha-Pack®







UltraBond

La-Pha-Pack have enlarged their range of well-known and established UltraBond Closures for EPA vials by various 9mm UltraBond Closures for short thread vials, among others also those in an **Instrument Manufacturer Quality**. Comparable systems are offered by Agilent and Waters® as so-called Interseal respectively Lectrabond closures.

The peculiarity of the UltraBond Seal system is that the screw cap and the liner form an inseparable unit. Through a patented processing technique the molecular structure of the contact areas of the PP Screw Cap and the liner are changed in such a way that without usage of any glue or adhesive the components form a firm unit. Reasons for making such a seal instead of a just assembled cap/ liner combination seal could be:

- For instruments with very thick and dull needles, in order to avoid the risk of pushing the liner into the vial (9mm UltraBond Seals for Short Thread Vials).
- For screw caps with a wide diameter, where a liner cannot achieve any press-fit in the cap (24mm UltraBond Seals for EPA-Vials).

Pharma-Fix

A Pharma-Fix-Septa is a moulded Butyl/PTFE liner. Its PTFE lamination is only in the centre of the liner where the sample can get into contact with it. However, on the glass rims the very elastic Butyl achieves a very tight seal which is essential especially in Headspace analysis. A completely laminated Butyl/PTFE septa has a much more slippery surface on the glass rims, so that the tightness is not as good as with a Pharma-Fix-Septa.

RedRubber

RedRubber/PTFE is a synthetic rubber which is softer than Natural Rubber/TEF and also shows less fragmentation. Furthermore it has a better cleanliness, even though it is not comparable with the analytical purity of Silicone. RedRubber is a cost-effective septa material for routine analysis in GC + HPLC with a temperature resistance of -40°C up to 110°C. However, due to a different molecular structure it doesn't have the outstanding resealability properties like Natural Rubber for multiple injections.

riplate

"riplate" is the brand name of the 96 Well Plates of Messrs. RITTER for which La-Pha-Pack offer suitable Glass Micro-Inserts.

B) Abbreviations

DW	Deep Well (Type of 96 Position Block with round inlet holes)
EPA	Environmental Protection Association (American regulatory authority that sets up certain standards and regulations for environmental analysis)
EPDM	Ethylene Propylene Diene Monomer
GC	Gas Chromatography
GMF	Glass Microfibre
HPLC	High Performance Liquid Chromatography
HS	Headspace
MTP	Microtiter (Type of 96 Position Block which is very flat and has a low volume)
MTRS	Micro-Tube-Rack-System (Type of 96 Position Block with cover that is more a kind of rack with round inlet holes)
ND	Nominal Diameter
NR	Natural Rubber
PE	Polyethylene
PP	Polyproylene
PTFE	PolyTetraFluorEthylene
PVDF	Polyvinylidenfluoride
RR	RedRubber
SPME	Solid Phase Micro Extraction
SQW	Square Well (Type of 96 Position Block with square inlets)
TEF	Tefzel (special type of PTFE which is a very thin casted Teflon)
TPX	TPX (Brand name of a Methylpentene Copolymere)

C) Explanations

Cleanroom class 10,000

Cleanroom class 10,000 represents a hygienic standard often found in the pharmaceutical industry. These special rooms have certified conditions of 10,000 particles per m3 air maximum. To have a comparison: The environment in a normal room contains millions of particles. The rooms are regularly measured by external authorities to guarantee the specifications. Such rooms have no windows (air-conditioned) and only material with low particle abrasion is allowed there (Plastic instead of wood or cardboard, etc.). The people have to wear special clothing.

Headspace Cap

A Headspace Cap is a safety cap for Headspace analysis, which should avoid explosion of the vial in case of too much internal pressure. The Headspace Cap has special score-lines with bridges that break open at an inner pressure of 3.0 ± 0.5 bar. Thus the excess pressure escapes and the risk of vial explosion is avoided.

Micro-Insert

A Micro-Insert in contrast to a Micro-Vial cannot be sealed on its own. It is neckless and always has to be used within a vial. The diameter of the Micro-Insert is depending on the size of the vial opening. A Micro-Insert reduces the volume, so that a needle is capable of picking up even smallest sample quantities. The longer the top of an Insert the more the volume can be reduced.

Pre-cut septa

With slitted liners used in HPLC the complete Septa is cut through, in order to offer a penetration aid to the needle. In contrast to that pre-cut septa are only cut through the Silicone layer, but not through the PTFE giving the same support to the needle without the risk of concentration changes due to solvent loss or contaminations from the enviroment.

Seal

A Seal is an already assembled closure consisting of a cap and a liner.

Durometer

Durometer is the hardness of a liner and is expressed in ° shore. The higher the grade the harder the liner; the lower the grade, the softer the liner. The softest liner is 45° shore A and the hardest 70° shore A. Besides the thickness of a liner the hardness is an essential indication when deciding which liner is suitable for the penetration of a certain type of needle (fragile needles, thin or thick needles, sharp or dull needles, etc.)

Headspace Neck (bevelled top)

A Headspace Neck or Headspace Vial with bevelled top has a crimp neck whose outer edges are bevelled. In contrast to a flat DIN crimp neck the liner only has a very small surface to sit on which is a disadvantage regarding tightness (except for Pharma-Fix septa). Headspace Necks or bevelled crimp necks are only necessary when using the patented PerkinElmer Pressure Release Seal consisting of an Aluminum Cap with a slit, a metal star washer plate and a liner with ears. This system only releases excess pressure reliably when using a vial with such a top.

Micro-Vial

Micro-Vials can be sealed, but often need an adapter to run in the autosampler. In case they have a conical bottom, they cannot stand by themselves.

Silanized

Silanized vials are used to reduce the adsorption of polar compounds onto the normally polar surface of the glass container. Some compounds like amino-acids, proteins or phenols tend to react with the OH-groups of the glass, even if – as is common for chromatography – 1st hydrolytic class glass is used. Through the silanization process the glass surface is deactivated and so possible reactions between the polar compounds and the glass are eliminated.

Virginal (PTFE)

Untreated PTFE

D) Structure Article Descriptions

D1) Vials

Volume (realistically usable volume of a vial, not the max. volume that can be filled from bottom to the very top edge of the vial)

Type of Vial

Dimensions (height x diameter; exact dimensions, not rounded)

Glass material

Glass class (quality)

Additional characteristics

e.g.: 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1st hydrol. class, with label and filling lines

D2) Seals

Diameter (of the cap)

Material (of the cap)

Type of Cap

Colour of the Cap (sometimes important when using an instrument with photocells!)

Size Centre Hole

Liner material + colour(s)

Additional characteristics

Hardness (of the liner)

Thickness (of the liner)

e.g.: 11mm PE Snap Ring Cap transparent, 6mm centre hole, Silicone white/PTFE blue, cross-slitted, 55° shore A, 1.0mm

D3) Septa

Carrier Material + Colour (Important for temperature resistance, resealability in case of multiple injections, cleanliness, etc.

Type of PTFE + Colour

Hardness of Liner (important for the penetration of the needle)

Thickness of Liner (important for the penetration of the needle)

Additional Remarks (to identify special liner qualities)

e.g.: Silicone white /PTFE beige, 45° shore A, 3.2mm *(HT Quality)*

All information are subject to technical changes! All data concerning dimensions and volumes are approximate.

Alphabetical Index

Numerical Index

A list of our article groups is shown below

01	Metal Crimp and Screw Caps (no liner)
02	Septa
03	Assembled Seals of Metal Caps and Septa
04	UltraBond Seals
05	96 Position Blocks and Plates (empty)
06	Crimping Tools + crimping heads
07	Decapping Tools + decapping heads
08	Plastic Caps (no liner)
09	Glass Articles
10	Stoppers
11	Flip Top/Flip Off Seals (only on special request)
12	Flip Tear Up Seals (only on special request)
13	Springs
14	Combination of glass and plastic articles
15	Assembled Seals of Plastic Caps and Septa
16	Syringe Filters
17	Capillary Connectors
18	GC Injection Port Septa
19	Plastic Vials + Micro-Inserts
20	96 Position Blocks and Plates filled with suitable Inserts + Seals or with Inserts + Block Covers
21	Vial Racks + Storage Boxes
23	2in1 KITs 1.5ml Screw Neck ND8
24	2in1 KITs 1.5ml Short Thread ND9
25	2in1 KITs 1.5ml Crimp Neck ND11
26	2in1 KITs 1.5ml Snap Ring ND11
27	2in1 KITs 1ml, 2ml and 4ml Shell Vials
28	2in1 KITs 4ml Screw Neck ND13
29	Block Covers (Sealmat)
31	Combination of glass and metal articles (already crimped vials)
32	2in1 KITs 1.5ml Screw Neck ND10
33	2in1 KITs 20ml Headspace ND20 + ND18
34	Plastic-/plastic combinations
36	Syringes
40	Certified Vial KITs
44	Assembly (tolling)
99	Others

Application:

Instrument Company Agilent

Product	HPLC: Agilent 1050, Agilent 1050 (34 Pos. Tray), Agilent 1090, Agilent 1090 (34 Pos. Tray), Agilent 1100, Agilent 1200, Agilent 79855(A), CTC HTS+HTC PAL	GC: Agilent 5880, Agilent 5890, Agilent 6850 27 Pos. Tray, Agilent 6850 22 Pos. Tray, Agilent 7673A, Agilent 7683A, CTC GC PAL	HS: CTC Combi PAL, Agilent G1888A, Agilent HS7694	TOC: Agilent 7695A, Tekmar SOLATek 72, Tekmar AQUATek 70
Crimp Neck Vials ND11 and Crimp Seals ND11 (Chapter 5, pages 27 to 29)				
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0209 11mm Alu-Cap, clear, Natural Rubber/TEF, 1.0mm	**2in1 KIT 11 25 1139** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A), CTC HTS+HTC PAL	**2in1 KIT 11 25 1139** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A) CTC HTS+HTC PAL		
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 1875 11mm Alu-Cap, clear , Red Rubber / PTFE beige, 1.0mm	**2in1 KIT 11 25 2561** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A), CTC HTS+HTC PAL	**2in1 KIT 11 25 2561** Agilent 5880, Agilent 5890, Agilent 7673A, Agilent 7683A		
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE, 1.3mm	**2in1 KIT 11 25 1922** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A), CTC HTS+HTC PAL	**2in1 KIT 11 25 1922** Agilent 5880, Agilent 5890, Agilent 7673A, Agilent 7683A		
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0318 11mm Magnetic Cap, gold, Silicone white/PTFE red, 1.3mm		**2in1 KIT 11 25 2562** CTC GC PAL		
Short Thread Vials ND9 and Short Thread Seals ND9 (Chapter 3, pages 21 to 25)				
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 0867 9mm Short Thread Cap, blue, Natural Rubber/TEF, 1.0mm	**2in1 KIT 11 24 1929** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A)	**2in1 KIT 11 24 1929** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A)		
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 1819 9mm Short Thread Cap, blue, RedRubber / PTFE beige, 1.0mm	**2in1 KIT 11 24 2492** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A)	**2in1 KIT 11 24 2492** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A)		
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 0838 9mm Short Thread Cap, blue, Silicone white/PTFE red, 1.0mm	**2in1 KIT 11 24 1143** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A)	**2in1 KIT 11 24 1143** Agilent 1050, Agilent 1090, Agilent 1100, Agilent 1200, Agilent 79855(A)		
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 1907 9mm Short Thread Cap, blue, with assembled magnetic cap, gold; Silicone white/PTFE red, 1.0mm		**2in1 KIT 11 24 2564** CTC GC PAL		
Headspace Vials and Crimp Seals ND20/Screw Seal ND18 (Chapter 10, pages 36 to 43)				
20 09 0796 20ml HS-Vial, clear, Crimp Neck, long neck, flat bottom 20 03 0901 20mm Alu-Crimp Cap, plain, Silicone white/PTFE beige, 3.2mm			**2in1 KIT 20 33 1618** (G1888A/HS7694)	
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0975 20mm Magnetic Cap, gold, 8mm hole; Silicone transparent blue/PTFE transparent, 3.0mm			**2in1 KIT 20 33 1615** COMBI PAL	
18 09 1307 20ml Precision Thread HS-Vial, clear, rounded bottom 18 03 1414 18mm Magnetic Universal Screw Cap, silver, Silicone white/PTFE blue, 1.5mm			**2in1 KIT 18 33 1426** (G1888A/Combi Pal)	
Screw Neck Vials ND24 and Screw Seals ND20 (Chapter 12, pages 45 to 46)				
24 09 0402 40ml EPA Screw Neck Vial, clear 24 04 0842 24mm UltraBond PP Screw Cap, white, Silicone/PTFE beige, 3.2mm				**KIT 24 14 2577** Agilent 7695A, Tekmar SOLATek 72, Tekmar AQUATek 70

Instrument Company Dionex

Product	Gina 50, AS 50, Summit ASI 100, Micro-Tray (192 Pos.), Summit ASI 100, Analytical-Tray (117 Pos.), Summit ASI 100, Semiprep.-Tray (63 Pos.), Famos (LC Packings/Dionex), UltiMate Analytical, cylindrical WPS-3000 SL, 120 (3x40) Pos. Rack (2ml), UltiMate Analytical, conical, WPS-3000 SL, 120 (3 x 40) Pos. Rack (1.1ml = 2ml w. Inserts), UltiMate Micro conical WPS-3000 SL, 120 (3 x 40) Pos. Rack (250µl), UltiMate Semipreparative WPS-3000 SL, 66 (3 x 22) Pos. Rack (4ml), UltiMate Nano/Cap/Micro WPS-3000 SL, 216 (3 x 72) Pos. Rack (1.2ml)	ASE 200
Short Thread Vials ND9 and Short Thread Seals ND9 (Chapter 3, pages 21 to 25)		
11 19 1205 1.5ml PP Short Thread Vial,transparent, with filling lines 09 15 0869 9mm PP Short Thread Cap, blue, Silicone white/PTFE blue,1.0mm, slitted	**2in1 KIT 11 24 1557** Gina 50, AS50, Summit ASI 100, Analytical Tray (117 Pos.)	
Crimp Neck Vials ND11 and Crimp Seals ND11 (Chapter 5, pages 27 to 29)		
11 09 0476 1.5ml Crimp Neck Vial, clear , with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE ,1.3mm	**2in1 KIT 11 25 1922** Gina 50, AS50, Summit ASI 100, Analytical Tray (117 Pos.), Famos (LC packings/Dionex),Ultimate Analytical,cylindrical WPS-3000 SL,120(3x40)Pos. Rack(2ml), Ultimate Analytical,conical WPS-3000 SL,120(3x40)Pos. Rack(1.1ml=2ml with Inserts)	
Screw Neck Vials ND24 and Screw Seal ND24 (Chapter 12, pages 45 to 46)		
24 09 0402 40ml EPA Screw Neck Vial, clear 24 04 0842 24mm UltraBond PP Screw Cap, white, Silicone/PTFE beige, 3.2mm		**KIT 24 14 2577** ASE 200

All 2in1 KITs indicated are product recommendations, which can differ from the recommendations of the instrument manufacturer.

Application:

HPLC | GC | HS | TOC

Instrument Company CTC

Product	HPLC: LC PAL (216 Pos); HTX PAL (200 Pos. Tray)/ HTS PAL (200 Pos. Tray)/ HTC PAL (200 Pos. Tray); HTX PAL (54/98 Pos. Tray)/ HTS PAL (54/98 Pos. Tray)/ HTC PAL (54/98 Pos. Tray); HTX PAL (32 Pos. Tray)/ HTS PAL (32 Pos. Tray)/ HTC PAL (32 Pos. Tray); A 200 LC	GC: COMBI PAL (200 Pos. Tray) GC PAL (200 Pos. Tray); COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray); COMBI PAL SPME mode (98 Pos. Tray); A 200 S	HS: COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray); COMBI PAL SPME mode (32 Pos. Tray); HS 500
Crimp Neck Vials ND8 and Crimp Seals ND8 (Chapter 2, pages 16 to 17)			
08 09 0276 0.3ml Crimp Neck Micro-Vial, clear glass, round bottom 08 03 0249 8mm Alu-Cap, clear, Silicone white/PTFE red, 1.3mm	**2in1 KIT** **08 27 2558** HTX PAL (54/98 Pos.Tray)/HTS PAL (54/ 98 Pos. Tray)/HTC PAL(54/98 Pos. Tray)	**2in1 KIT** **08 27 2558** COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray)	
08 09 0405 0.7ml Crimp Neck Vial, clear glass 08 03 0249 8mm Alu-Cap, clear, Silicone white/PTFE red, 1.3mm	**2in1 KIT** **08 27 2559** HTX PAL (200 Pos. Tray)/HTS PAL (200 Pos. Tray)/ HTC PAL (200 Pos. Tray)/A200LC	**2in1 KIT** **08 27 2559** COMBI PAL (200 Pos. Tray) GC PAL (200 Pos. Tray)/A200S	
Crimp Neck Vials ND11 and Crimp Seals ND11 (Chapter 5, pages 27 to 29)			
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE ,1.3mm	**2in1 KIT** **11 25 1922** LC PAL (216 Pos)/HTX PAL (54/98 Pos.Tray)/HTS PAL (54/ 98 Pos. Tray)/HTC PAL(54/98 Pos. Tray)/A200LC	**2in1 KIT** **11 25 1922** A 200 S	
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0318 1mm Magnetic Cap, gold, Silicone white/PTFE red, 1.3mm		**2in1 KIT** **11 25 2562** COMBI PAL (98 Pos. Tray)GC PAL (98 Pos. Tray) COMBI PAL SPME mode (98 Pos. Tray)	
Short Thread Vials ND9 and 9mm Short Thread Seals (Chapter 3, pages 21 to 25)			
11 09 0519 1.5ml Short Thread Vial, clear ,with label and filling lines 09 15 0838 9mm Short Thread Cap, blue, Silicone white/PTFE red, 1.0mm	**2in1 KIT** **11 24 1143** LC PAL (216 Pos)/HTX PAL (54/98 Pos.Tray)/HTS PAL (54/ 98 Pos. Tray)/HTC PAL(54/98 Pos. Tray)/A200LC	**2in1 KIT** **11 24 1143** A 200 S	
11 09 0519 1.5ml Short Thread Vial, clear ,with label and filling lines 09 15 1907 9mm Short Thread Cap, blue, RedRubber / PTFE beige, 1.0mm		**2in1 KIT** **11 24 2564** COMBI PAL (98 Pos. Tray)GC PAL (98 Pos. Tray) COMBI PAL SPME mode (98 Pos. Tray	
Headspace Vials and Crimp Seals ND20/Screw Seal ND18 (Chapter 10, pages 36 to 43)			
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0975 20mm Magnetic Cap, gold, 8mm hole; Silicone transparent blue/PTFE transparent, 3.0mm			**2in1 KIT** **20 33 1615** COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray)
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0665 20mm Magnetic Cap, gold, 5mm hole; Silicone transparent blue/PTFE transparent, 3.0mm			**2in1 KIT** **20 33 2568** HS500
18 09 1307 20ml Precision Thread HS-Vial, clear, rounded bottom 18 03 1414 18mm Magnetic Universal Screw Cap, silver, Silicone white/PTFE blue, 1.5mm	**2in1 KIT** **18 33 1426** (HTX,HTS,HTCPal 32 pos. Tray)		**2in1 KIT** **18 33 1426** COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray) COMBI PAL SPME mode (32 Pos. Tray)
Wash Vials ND20 and PE-Caps ND20 (Chapter 21, page 60)			
20 09 1822 100ml Crimp Neck Vial, clear glass 22 15 1869 22mm PE Cap, transparent, centre hole, Silicone transp. blue/PTFE, 1.3mm, Y-slitted	**2in1 KIT** **20 33 2572** LC PAL (216 Pos) HTX PAL (200 Pos. Tray)/HTS PAL (200 Pos. Tray)/HTC PAL (200 Pos. Tray)HTX PAL (54/98 Pos. Tray)/HTS PAL (54/98 Pos. Tray)/HTC PAL(54/98 Pos. Tray) HTX PAL (32 Pos. Tray)/HTS PAL (32 Pos. Tray)/HTC PAL (32 Pos. Tray)	**2in1 KIT** **20 33 2572** COMBI PAL (200 Pos. Tray)GC PAL (200 Pos. Tray)COMBI PAL (98 Pos. Tray)GC PAL (98 Pos. Tray)COMBI PAL SPME mode(98 Pos. Tray)	
20 09 1405 10ml HS-Vial, clear glass, DIN-Crimp Neck, rounded bottom 22 15 1334 22mm PE Cap, transparent, Silicone transp. blue/PTFE white, 45° shore A, 1.3mm	**2in1 KIT** **20 33 2573** (A200 LC)	**2in1 KIT** **20 33 2573** COMBI PAL (200 Pos. Tray)GC PAL (200 Pos. Tray)COMBI PAL (98 Pos. Tray)GC PAL (98 Pos. Tray)COMBI PAL SPME mode(98 Pos. Tray)A 200 S	

Instrument Company VWR (Merck®)/Hitachi

Product	L2200 (LaChrom Elite)/ L2200-U (LaChrom Ultra) (200 Pos. Tray); L2200 (LaChrom Elite) (128 Pos. Tray); L-7200 (LaChrom)(80 Pos. Tray)/L-7250 (LaChrom) (120 Pos. Tray); L-7250 (LaChrom) (Rack Holder for combination Racks); 655-A40 (108 Pos. Tray); L-9100; AS2000 (50 Pos. Tray); AS4000 (150 Pos. Tray); AS4000 (198 Pos. Tray); AS6000
Screw Neck Vials ND8 and Screw Seal ND8 (Chapter 2, pages 18 to 20)	
11 09 0419 1.5ml Screw Neck Vial, clear, with label and filling lines 08 08 0027 8mm PP Screw Cap, black, centre hole, 8-425 thread 08 02 0039 8mm Septa, Silicone white/PTFE blue, 0.9mm, slitted	**3in1 KIT** **11 23 2576** L2200 (LaChrome Elite)/ L2200-U(La Chrom Ultra) (200 Pos. Tray), L_7200 (LaChrom) (80 Pos. Tray)/ L-7250 (LaChrom) (120 Pos. Tray), L-7250 (LaChrom) (Rack Holder for combination Racks), 655-A40 (108 Pos. Tray), L-9100, AS2000 (50 Pos. Tray), AS4000 (150 Pos. Tray), AS4000 (198 Pos. Tray), AS6000
Short Thread Vials ND9 and Screw Seal ND9 (Chapter 3, pages 21 to 25)	
11 09 0519 1.5ml Short Thread Vial, clear ,with label and filling lines 09 15 0869 Short Thread Cap, blue, Silicone white/PTFE blue, 1.0mm, slitted	**2in1 KIT** **11 24 1238** L2200 (LaChrome Elite)/ L2200-U(La Chrom Ultra) (200 Pos. Tray), L_7200 (LaChrom) (80 Pos. Tray)/ L-7250 (LaChrom) (120 Pos. Tray), L-7250 (LaChrom) (Rack Holder for combination Racks), 655-A40 (108 Pos. Tray), L-9100, AS2000 (50 Pos. Tray), AS4000 (150 Pos. Tray), AS4000 (198 Pos. Tray), AS6000
Crimp Neck Vials ND11 and Crimp Seal ND11 (Chapter 5, pages 27 to 29)	
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0464 11mm Alu-Cap, clear, Silicone white/PTFE blue, 1.5mm, cross-slitted	**2in1 KIT** **11 25 1923** AS2000 (50 Pos. Tray), AS4000 (150 Pos. Tray

All 2in1 KITs indicated are product recommendations, which can differ from the recommendations of the instrument manufacturer.

Application: HPLC | GC | HS | TOC

Instrument Company Waters®	Waters® Wisp 4, 8 Position	Waters® Wisp, 96 Position	Waters® 717, 96 Position Carousel	Waters® 717 48 Position Carousel	Alliance® GPC 2000	Alliance®	Alliance® HT System	Acquity UPLC™ System	Alliance® 2690/2695	Alliance® 2790/2795
Shell Vials (Chapter 9)										
08 09 0483 1ml Shell Vial, 40 x 8.2mm, clear glass 08 08 0488 8mm PE Plug, transparent (with insertion barrier)	**2in1 KIT** **08 27 1670** Waters Wisp 96 Position, Waters 717 96 Position Carousel									
Short Thread Vials ND9 and Screw Seal ND9 (Chapter 3, pages 21 to 25)										
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 04 1534 PP Short Thread Cap, blue, centre hole; Silicone beige/ PTFE white, 1.3mm, slitted	**2in1 KIT** **11 24 1860** Alliance, ,Acquity UPLC™ Sytem, Alliance 2690/2695, Alliance 2790/2795									
Crimp Neck Vials ND 11 and Crimp Seal ND11 (Chapter 5, pages 27 to 29)										
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE, 1.3mm	**2in1 KIT** **11 25 1922** Alliance, Alliance 2690/2695, Alliance 2790/2795									
Screw Neck Vials ND13 and Screw Seal ND13 (Chapter 8, pages 33 to 34)										
13 09 1335 4ml Screw Neck, clear glass, with label and filling lines 13 15 0815 PP Screw Cap, black, Silicone cream/PTFE red, 1.5mm	**2in1 KIT** **13 28 2532** Waters Wisp 4 8 PositionWaters 717 48 Position Carousel, Alliance GPC 2000, Acquity UPLC™ Sytem									

Instrument Company PerkinElmer	Series 200, 25 vial tray	Series 200, 85 vial tray	Series 200, 81/100 vial tray	Series 200, 205 vial tray	Series 200, 225 vial tray	AS2000/AS2000B	ISS-100, 100 vial tray	ISS-100, 85 vial tray	ISS-200, 145 vial tray	ISS-200, 100 vial tray	ISS-200, 85 vial tray	ISS-225, 205 vial tray	ISS-225, 100 vial tray + 80 vial tray	ISS-225, 85 vial tray	ISS-225, 25 vial tray	LC 600, 42 vial tray	LC 600, 60 vial tray	Intergral 4000	AL-1	AS-100/AS-100B	AS-300	AS8300	Autosystem	Clarus 400	Clarus 500	Clarus 600	HS6	HS40/HS100/HS101	TurboMatrixTM HS16/ HS40/HS40XL/HS40 Trap/ HS110/HS110 Trap
Crimp Neck Vials ND8 and Crimp Seal ND8 (Chapter 2, pages 18 to 20)																													
08 09 0276 0.3ml Crimp Neck Micro-Vial, clear glass, round bottom 08 03 0249 8mm Alu-Cap, clear, Silicone white/PTFE red, 1.3mm	**2in1 KIT** **08 27 2558** Series 200, 205 vial tray, Series 200, 225 vial tray, ISS-200, 145 vial tray, ISS-225, 205 vial tray																		**2in1 KIT** **08 27 2558** AL-1, AS-100/AS-100B AS-300, AS8300. Autosystem										
Crimp Neck Vials ND11 and Crimp Seal ND11 (Chapter 5, pages 27 to 29)																													
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE ,1.3mm	**2in1 KIT** **11 25 1922** Series 200, 85 vial tray, Series 200, 81/100 vial tray Series 200, 205 vial tray, AS2000/AS2000B, ISS-100, 100 vial tray, ISS-100, 85 vial tray, ISS-200, 100 vial tray ISS-200, 85 vial tray, ISS-225, 205 vial tray, ISS-225, 100 vial tray + 80 vial tray, ISS-225, 85 vial tray, LC 600, 60 vial tray Intergral 4000																		**2in1 KIT** **11 25 1922** AL-1, AS-100/AS-100B AS-300, AS8300, Autosystem Clarus 400, Clarus 500,Clarus 600										
Screw Neck Vials ND10 and Screw Seal ND10 (Chapter 4, page 26)																													
10 09 1196 1.5ml Screw Neck Vial, clear, with label and filling lines 10 12 1257 10mm Screw Cap, black, Silicone white/PTFE, 1.3mm	**2in1 KIT** **10 32 2560** Series 200, 85 vial tray, Series 200, 81/100 vial tray Series 200, 205 vial tray, AS2000/AS2000B, ISS-100, 100 vial tray, ISS-100, 85 vial tray, ISS-200, 100 vial tray ISS-200, 85 vial tray, ISS-225, 205 vial tray, ISS-225, 100 vial tray + 80 vial tray, ISS-225, 85 vial tray, LC 600, 60 vial tray Intergral 4000																												
Headspace Vials and Crimp Seals ND20/Screw Seal ND18 (Chapter 10, pages 36 to 43)																													
20 09 0342 5ml HS-Vial, clear glass, rounded bottom 20 03 0142 20mm Alu-Cap, plain, Silicone transparent blue/PTFE white, 3.0mm	**2in1 KIT** **20 33 2566** Series 200, 25 vial tray, Series 200, 85 vial tray, ISS-100, 85 vial tray, ISS-200, 85 vial tray, ISS-225, 85 vial tray, ISS-225, 25 vial tray																										**2in1 KIT** **20 33 2566 **** HS6, HS40/HS100/HS101, TurboMatrix™ HS16/HS40/HS40XL/HS40, Trap/HS110/HS110, Trap		
20 09 0297 20ml HS-Vial, clear, rounded bottom 20 03 0163 20mm Alu-Headspace Cap, clear, Silicone transparent blue/PTFE white, 3.0mm																											**2in1 KIT** **20 33 2567** HS40/HS100/HS101, TurboMatrix™ HS16/HS40/HS40XL/HS40, Trap/ HS110/HS110, Trap		
18 091307 20ml Precision Thread HS-Vial, clear, rounded bottom 18 03 1414 18mm Magnetic Universal Screw Cap, silver, Silicone white/PTFE blue, 1.5mm	**2in1 KIT** **18 33 1426** (HTX,HTS,HTCPal 32 pos. Tray)																										**2in1 KIT** **18 33 1426** TurboMatrix™ HS16/HS40/HS40XL/ HS40, Trap/HS110/HS110, Trap		

X*: For TurboMatrix™ 16, 40 and 110, manufactured after 01.09.2006

X**: Not suitable for TurboMatrix™ 110

All 2in1 KITs indicated are product recommendations, which can differ from the recommendations of the instrument manufacturer.

Application: HPLC | GC | HS | TOC

Instrument Company Shimadzu

Instrument Company Shimadzu	LC2010C + LC-2010A 140 Pos. Tray	SIL-2AS	SIL-6A	SIL-6B/SIL-7A/SIL-8A/SIL-9A	SIL-10A/SIL-10AF,SIL-10AP/ SIL-Ai/SIL-10AxL; Rack S 100 Pos.	SIL-10ADvp	SIL-10HTA / SIL-10HTC 140 Pos. Tray	SIL-20A (Prominence) 105 vial tray/SIL-20AC (Prominence) 70 vial tray	AOC-20/AOC20i/AOC-20s 150 Pos. Tray	AOC-20/AOC20i/AOC-20s 96 Pos. Tray	AOC-17	AOC-14 / 1400	AOC-5000	HT200H	AOC-5000	ASI-V
Crimp Neck Vials ND11 and Crimp Seals ND11 (Chapter 5, pages 27 to 29)																
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE, 1.3mm	**2in1 KIT** **11 25 1922** LC2010C + LC-2010A 140 Pos. Tray; SIL-2AS SIL-6ª; SIL-6B/SIL-7A/SIL-8A/ SIL-9A SIL-10A/SIL-10AF,SIL-10AP/SIL-Ai/SIL-1AxL; Rack S 100 Pos.; SIL-10ADvp; SIL-10HTA / SIL-10HTC; 140 Pos. Tray; SIL-20A (Prominence); 105 vial tray/SIL-20AC (Prominence) 70 vial tray								**2in1 KIT** **11 25 1922** AOC-20/AOC20i/ AOC-20s 150 Pos. Tray, AOC-17, AOC-14 / 1400 ,							
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0318 11mm Magnetic Cap, gold ,Silicone white/PTFE red, 1.3mm									**2in1 KIT** **11 25 2562** AOC-5000							
Short Thread Vials ND9 and Short Thread Seals ND9 (Chapter 3, pages 21 to 25)																
11 09 0519 1.5ml Short Thread Vial, clear ,with label and filling lines 09 15 0838 9mm Short Thread Cap, blue, Silicone white/PTFE, 1,0mm	**2in1 KIT** **11 24 1143** LC2010C + LC-2010A 140 Pos. Tray; SIL-2AS SIL-6ª; SIL-6B/SIL-7A/SIL-8A/ SIL-9A SIL-10A/SIL-10AF,SIL-10AP/SIL-Ai/SIL-1AxL; Rack S 100 Pos.; SIL-10ADvp; SIL-10HTA / SIL-10HTC; 140 Pos. Tray; SIL-20A (Prominence); 105 vial tray/SIL-20AC (Prominence) 70 vial tray								**2in1 KIT** **11 24 1143** AOC-20/AOC20i/ AOC-20s 150 Pos. Tray, AOC-17, AOC-14 / 1400 ,							
11 09 0519 1.5ml Short Thread Vial, clear ,with label and filling lines 09 15 1907 9mm Short Thread Cap, blue, with assembled magnetic cap, gold; Silicone white/PTFE red, 1.0mm									**2in1 KIT** **11 25 2564** AOC-5000							
Headspace Vials and Crimp Seals ND20/Screw Seal ND18 (Chapter 10, pages 36 to 43)																
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0142 20mm Alu-Cap, plain, Silicone transparent blue/PTFE white, 3.0mm														**2in1 KIT** **20 33 2568** HT200H		
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0975 20mm Magnetic Cap, gold, 8mm hole; Silicone transparent blue/PTFE transparent, 3.0mm														**2in1 KIT** **20 33 1615** AOC-5000		
18 091307 20ml Precision Thread HS-Vial, clear, rounded bottom 18 03 1414 18mm Magnetic Universal Screw Cap, silver, Silicone white/PTFE blue, 1.5mm														**2in1 KIT** **18 33 1426** (AOC-5000		
Screw Neck Vials ND24 and Screw Seal ND24 (Chapter 12, pages 45 to 46)																
24 09 0402 40ml EPA Screw Neck Vial, clear 24 04 0842 24mm UltraBond PP Screw Cap, white, Silicone/PTFE beige, 3.2mm																**KIT** **24 14 2577** ASI-V

All 2in1 KITs indicated are product recommendations, which can differ from the recommendations of the instrument manufacturer.

Application: HPLC | GC | HS | TOC

Instrument Company Thermo Scientific = Thermo Finnigan/ Thermo Quest/ Carlo Erba/Fisons	HPLC: AS100 (Carlo Erba/Fisons/Thermo Scientific) A200LC (Carlo Erba/Fisons/Thermo Scientific) AS300 (Carlo Erba/Fisons) SpectraSYSTEM AS1000 SpectraSYSTEM AS3000 SpectraSYSTEM AS3500 Surveyor (Surveyor Plus) Accela High Speed LC Autosampler (200 Pos.)	GC: AS200 (Carlo Erba/Fisons/Thermo Scientific) AS800 - 42 vial tray (Carlo Erba, Fisons) AS800 - 60 vial tray (Carlo Erba, Fisons) AS1000 (Trace GC) AS2000 - 90 vial tray (Trace GC) AS2000 - 30 vial tray (Trace GC) AI3000 (II) / AS3000 (II) / AS3500 (Trace GC + Focus GC) TriPlus AS + DUO (vgl. CTC GC PAL)	HS: HS250 (Carlo Erba/Fisons/Thermo Scientific) HS500 (Carlo Erba/Fisons/Thermo Scientific) HS800 (Carlo Erba/Fisons/Thermo Scientific) HS850 (Carlo Erba/Fisons/Thermo Scientific) HS2000 (Thermo Scientific) TriPlus HS TriPlus SPME	TOC: HiPer TOC
Crimp Neck Vials ND8 and Crimp Seals ND8 (Chapter 2, pages 18 to 20)				
08 09 0276 0.3ml Crimp Neck Micro-Vial, clear glass, round bottom 08 03 0249 8mm Alu-Cap, clear, Silicone white/ PTFE red, 1.3mm	**2in1 KIT** **08 27 2558** AS100 (Carlo Erba/Fisons/Thermo), A200LC (Carlo Erba/Fisons/Thermo), AS300 (Carlo Erba/Fisons), SpectraSYSTEM AS1000, SpectraSYSTEM AS3000, SpectraSYSTEM AS3500, Surveyor (Surveyor Plus), Accela High Speed LC AS (200 Pos.)	**2in1 KIT** **08 27 2558** AS200 (Carlo Erba/Fisons/Thermo), AS800 - 60 vial tray (Carlo Erba, Fisons), AS1000 (Trace GC), AS2000 - 90 vial tray (Trace GC), AI3000 (II) / AS3000 (II) / AS3500 (Trace GC + Focus GC) TriPlus AS + DUO (vgl. CTC GC PAL)		
08 09 0305 0.6ml Crimp Neck Micro-Vial, clear glass, conical 08 03 0249 8mm Alu-Cap, clear, Silicone white/ PTFE red, 1.3mm	**2in1 KIT** **08 27 2579** AS100 (Carlo Erba/Fisons/Thermo), A200LC (Carlo Erba/Fisons/Thermo), AS300 (Carlo Erba/Fisons), SpectraSYSTEM AS1000, SpectraSYSTEM AS3000, SpectraSYSTEM AS3500, Surveyor (Surveyor Plus), Accela High Speed LC AS (200 Pos.)	**2in1 KIT** **08 27 2579** AS200 (Carlo Erba/Fisons/Thermo), AS800 - 60 vial tray (Carlo Erba, Fisons), AS1000 (Trace GC), AS2000 - 90 vial tray (Trace GC), AI3000 (II) / AS3000 (II) / AS3500 (Trace GC + Focus GC) TriPlus AS + DUO (vgl. CTC GC PAL)		
Crimp Neck Vials ND11 and Crimp Seals ND11 (Chapter 5, pages 27 to 29)				
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE, 1.3mm	**2in1 KIT** **11 25 1922** AS100 (Carlo Erba/Fisons/Thermo), A200LC (Carlo Erba/Fisons/Thermo), AS300 (Carlo Erba/Fisons), SpectraSYSTEM AS1000, SpectraSYSTEM AS3000, SpectraSYSTEM AS3500, Surveyor (Surveyor Plus), Accela High Speed LC AS (200 Pos.)	**2in1 KIT** **11 25 1922** AS200 (Carlo Erba/Fisons/Thermo) AS800 - 42 vial tray (Carlo Erba, Fisons) AS800 - 60 vial tray (Carlo Erba, Fisons) AS1000 (Trace GC) AS2000 - 90 vial tray (Trace GC) AI3000 (II) / AS3000 (II) / AS3500 (Trace GC + Focus GC) TriPlus AS + DUO (vgl. CTC GC PAL)		
Short Thread Vials ND9 and Short Thread Seal ND9 (Chapter 3, pages 21 to 25)				
11 09 0519 1.5ml Short Thread Vial, clear ,with label and filling lines 09 15 0838 9mm Short Thread Cap, blue, Silicone white/PTFE red, 1.0mm	**2in1 KIT** **11 24 1143** AS100 (Carlo Erba/Fisons/Thermo), A200LC (Carlo Erba/Fisons/Thermo), AS300 (Carlo Erba/Fisons), SpectraSYSTEM AS1000, SpectraSYSTEM AS3000, SpectraSYSTEM AS3500, Surveyor (Surveyor Plus), Accela High Speed LC AS (200 Pos.)	**2in1 KIT** **11 25 1143** AS200 (Carlo Erba/Fisons/Thermo) AS800 - 42 vial tray (Carlo Erba, Fisons) AS800 - 60 vial tray (Carlo Erba, Fisons) AS1000 (Trace GC) AS2000 - 90 vial tray (Trace GC) AI3000 (II) / AS3000 (II) / AS3500 (Trace GC + Focus GC) TriPlus AS + DUO (vgl. CTC GC PAL)		
Headspace Vials and Crimp Seals ND20 (Chapter 10, pages 36 to 43)				
20 09 1405 10ml HS-Vial, clear glass, DIN-Crimp Neck, rounded bottom 20 03 0665 20mm Magnetic Cap, gold, 5mm hole; Silicone transp. blue/PTFE transp.,3.0mm		**2in1 KIT** **20 33 2570** AS2000 - 30 vial tray (Trace GC)	**2in1 KIT** **20 33 2570** HS250 (Carlo Erba/Fisons/Thermo) HS500 (Carlo Erba/Fisons/Thermo) HS800 (Carlo Erba/Fisons/Thermo)	
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0142 20mm Alu-Cap, plain, Silicone transparent blue/PTFE white, 3.0mm			**2in1 KIT** **20 33 2568** HS850 (Carlo Erba/Fisons/Thermo) HS2000 (Thermo Scientific) TriPlus HS TriPlus SPME	
Screw Neck Vials ND24 and Screw Seal ND24 (Chapter 12, pages 45 to 46)				
24 09 0402 40ml EPA Screw Neck Vial, clear 24 04 0842 24mm UltraBond PP Screw Cap, white, Silicone/PTFE beige, 3.2mm				**KIT** **24 14 2577** HiPer TOC

All 2in1 KITs indicated are product recommendations, which can differ from the recommendations of the instrument manufacturer.

Application: **HPLC** | **GC** | **HS** | **TOC**

Instrument Company Varian

Vials and Seals	HPLC: ProStar 400, Standard 96 Pos. Tray; ProStar 400, King Size 48 Pos. Tray; ProStar 410, Standard 84 Pos. Tray; ProStar 410, Large Capacity 96 Pos. Tray; ProStar 410, Large Volume 24 Pos. Tray; ProStar 420, Standard 96 Pos. Tray; ProStar 420, LSV 72 Pos. Tray; ProStar 420, Super-LSV 32 Pos.Tray; ProStar 420, Micro 160 Pos. Tray; ProStar 430 48 Pos. Tray; Marathon Basic, Standard 96 Pos. Tray; Marathon Basic Präp, King Size 48 Pos. Tray; Varian LC 9100/9095/9090	GC: 8400 (100 Pos.); 8410-Autoinjector (10 x 2ml; 6 x 5ml; 5 x 10ml); 8000; 8035; 8100; 8200; CP-9010; CP-910, 911, 912; CP-940, 941; Varian Vista; COMBI PAL (200 Pos. Tray) GC PAL (200 Pos. Tray); COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray); COMBI PAL SPME mode (98 Pos. Tray)	HS: COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray); COMBI PAL SPME mode (32 Pos. Tray); CP-9020/9025; CP-9060; Genesis	TOC: Archon
Crimp Neck Vials ND8 and Crimp Seals ND8 (Chapter 2, pages 18 to 20)				
08 09 0276 0.3ml Crimp Neck Micro-Vial, clear glass, round bottom 08 03 0249 8mm Alu-Cap, clear, Silicone white/PTFE red, 1.3mm	**2in1 KIT** **08 27 2558** ProStar 420, LSV 72, ProStar 420, Micro	**2in1 KIT** **08 27 2558** COMBI PAL (200 Pos. Tray) GC PAL (200 Pos. Tray) COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray)		
08 09 0405 0.7ml Crimp Neck Vial, clear glass 08 03 0249 8mm Alu-Cap, clear, Silicone white/PTFE red, 1.3mm	**2in1 KIT** **08 27 2559** ProStar 420, LSV 72, ProStar 420, Micro	**2in1 KIT** **08 27 2559** COMBI PAL (200 Pos. Tray) GC PAL (200 Pos. Tray) CCOMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray)		
Crimp Neck Vials ND11and Crimp Seals ND11 (Chapter 5, pages 27 to 29)				
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0300 11mm Alu-Cap, clear, Natural Rubber/TEF, 1.0mm	**2in1 KIT** **11 25 2281** ProStar 400, Standard 96 Pos. Tray, ProStar 410, Standard 84 Pos. Tray, ProStar 410, Large Capacity 96 Pos.Tray, ProStar 420, Standard 96 Pos. Tray , ProStar 430 48 Pos. Tray, Marathon Basic, Standard 96 Pos. Tray, Varian LC9100/9095/9090	**2in1 KIT** **11 25 2281** 8400 (100 Pos.), 8410-Autoinjector(10 x 2ml; 6 x 5ml; 5 x 10ml), 8000, 8035, 8100, 8200, CP-9010, CP-910, 911, 912, CP-940, 941		
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0247 11mm Alu-Cap, clear, Silicone white/PTFE ,1.3mm	**2in1 KIT** **11 25 1922** ProStar 400, Standard 96 Pos. Tray, ProStar 410, Standard 84 Pos. Tray, ProStar 410, Large Capacity 96 Pos.Tray, ProStar 420, Standard 96 Pos. Tray , ProStar 430 48 Pos. Tray, Marathon Basic, Standard 96 Pos. Tray, Varian LC9100/9095/9090	**2in1 KIT** **11 25 1922** 8400 (100 Pos.), 8410-Autoinjector(10 x 2ml; 6 x 5ml; 5 x 10ml), 8000, 8035, 8100, 8200, CP-9010, CP-910, 911, 912, CP-940, 941		
11 09 0476 1.5ml Crimp Neck Vial, clear, with label and filling lines 11 03 0318 11mm Magnetic Cap, gold, Silicone white/PTFE red, 1.3mm		**2in1 KIT** **11 25 2562** COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray) COMBI PAL SPME mode (98 Pos. Tray)		
Screw Neck Vials ND8 and Screw Seal ND8 (Chapter 2, pages 18 to 20)				
11 09 0419 1.5ml Screw Neck Vial, clear, with label and filling lines 08 15 0293 8mm Screw Cap, black Silicone white/PTFE red, 1.3mm	**2in1 KIT** **11 23 1280** ProStar 400, Standard 96 Pos. Tray, ProStar 410, Standard 84 Pos. Tray, ProStar 410, Large Capacity 96 Pos.Tray, ProStar 420, Standard 96 Pos. Tray, ProStar 430 48 Pos. Tray, Marathon Basic, Standard 96 Pos. Tray	**2in1 KIT** **11 23 1280** 8400 (100 Pos.), 8410-Autoinjector(10 x 2ml; 6 x 5ml; 5 x 10ml), 8000, 8035, 8100, 8200, CP-9010, CP-910, 911, 912, CP-940, 941		
Short Thread Vials ND9 and Short Thread Seals ND9 (Chapter 3, pages 21 to 25)				
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 2012 9mm Short Thread Cap, red, RedRubber/PTFE beige, 1.0mm	**2in1 KIT** **11 24 2565** ProStar 400, Standard 96 Pos. Tray, ProStar 410, Standard84 Pos. Tray, ProStar 410, Large Capacity 96 Pos.Tray, ProStar 420, Standard 96 Pos. Tray, ProStar 430 48 Pos. Tray , Marathon Basic, Standard 96 Pos. Tray, Varian LC9100/9095/9090	**2in1 KIT** **11 24 2565** 8400 (100 Pos.), 8410-Autoinjector (10 x 2ml; 6 x 5ml; 5 x 10ml), 8000, 8035, 8100, 8200, CP-9010, CP-910, 911, 912, CP-940, 941		
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 1178 9mm Short Thread Cap, red, Silicone white/PTFE red, 1.0mm	**2in1 KIT** **11 24 2563** ProStar 400, Standard 96 Pos. Tray, ProStar 410, Standard84 Pos. Tray, ProStar 410, Large Capacity 96 Pos.Tray, ProStar 420, Standard 96 Pos. Tray, ProStar 430 48 Pos. Tray , Marathon Basic, Standard 96 Pos. Tray, Varian LC9100/9095/9090	**2in1 KIT** **11 25 2563** 8400 (100 Pos.), 8410-Autoinjector (10 x 2ml; 6 x 5ml; 5 x 10ml), 8000, 8035, 8100, 8200, CP-9010, CP-910, 911, 912, CP-940, 941		
11 09 0519 1.5ml Short Thread Vial, clear, with label and filling lines 09 15 1907 9mm Short Thread Cap, blue, RedRubber/PTFE beige, 1.0mm		**2in1 KIT** **11 25 2564** COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray) COMBI PAL SPME mode (98 Pos. Tray)		
Screw Neck Vials ND13 and Screw Seal ND13 (Chapter 8, pages 33 to 34)				
13 09 1335 4ml Screw Neck Vial, clear, with label and filling lines 13 15 0815 13mm Screw Cap, black, Silicone cream/PTFE red, 1.5mm	**2in1 KIT** **13 28 2532** ProStar 420, LSV 72			
Headspace Vials and Crimp Seals ND20/Screw Seal ND18 (Chapter 10, pages 36 to 43)				
20 09 1405 10ml HS-Vial, clear glass, DIN-Crimp Neck, rounded bottom 20 03 0142 20mm Alu-Cap, plain, Silicone transparent blue/PTFE white, 3.0mm	**2in1 KIT** **20 33 2571** ProStar 410, Standard 84 Pos. Tray, ProStar 410, Large Volume 24 Pos. Tray, ProStar 420, Super-LSV 32 Pos.Tray		**2in1 KIT** **20 33 2571** CP-9020/9025 CP-9060	
20 09 0342 5ml HS-Vial, clear glass, rounded bottom 20 03 0142 20mm Alu-Cap, plain, Silicone transparent blue/PTFE white, 3.0mm	**2in1 KIT** **20 33 2566** ProStar 400, King Size 48 Pos. Tray, ProStar 420, Super-LSV 32 Pos.Tray, Marathon Basic, Standard 96 Pos. Tray			
20 09 0873 20ml HS-Vial, clear glass, DIN Crimp Neck, long neck, rounded bottom 20 03 0975 20mm Magnetic Cap, gold, 8mm hole; Silicone transp. blue/PTFE transp. ,3.0mm			**2in1 KIT** **20 33 1615** COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray)	
20 09 1405 10ml HS-Vial, clear glass, DIN-Crimp Neck, rounded bottom 20 03 0975 20mm Magnetic Cap, gold, 8mm hole; Silicone transp. blue/PTFE transp. ,3.0mm			**2in1 KIT** **20 33 2569** COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray)	
20 09 0796 20ml HS-Vial, clear, Crimp Neck, long neck, flat bottom 20 03 0901 20mm Alu-Crimp Cap, plain, Silicone white/PTFE beige, 3.2mm			**2in1 KIT** **20 33 1618** Genesis	
18 091307 20ml Precision Thread HS-Vial, clear, rounded bottom 18 03 1414 18mm Magnetic Universal Screw Cap, silver, Silicone white/PTFE blue, 1.5mm	**2in1 KIT** **18 33 1426** (HTX,HTS,HTCPal 32 pos. Tray)		**2in1 KIT** **18 33 1426** COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray)	
Screw Neck Vials ND24 and Screw Seal ND24 (Chapter 12, pages 45 to 46)				
24 09 0402 40ml EPA Screw Neck Vial, clear 24 04 0842 24mm UltraBond PP Screw Cap, white, Silicone/PTFE beige, 3.2mm				**KIT** **24 14 2577** Archon

Quick-Reference-Charts

La-Pha-Pack

Autosampler Kompatibilitätsübersicht

		Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Gewinde ND8	Gewinde ND8	Kurzgewinde ND9	Gewinde ND10	Rollrand ND11	Rollrand ND11	Rollrand ND11	Rollrand ND11
		08 09 0405 08 09 0406	08 09 0284	08 09 0845 08 09 0953	08 09 0276 08 09 0606	08 09 0258 08 09 0305	08 09 1080	11 09 0210 11 09 0259 11 09 0382 11 09 0419	11 09 0417	11 09 0500 11 09 0519 11 09 0520 11 09 1241 11 09 1242 11 09 0999 11 09 1957 11 09 0620 11 09 2275 11 09 2357 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1516 11 19 1216 11 19 1706	10 09 0743 10 09 1196 10 09 1197	11 09 0184 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619	11 09 0486	11 09 0415	11 09 0831
		Kapitel 1 Seite 16	Kapitel 1 Seite 16	Kapitel 1 Seite16	Kapitel 1 Seite 16	Kapitel 1 Seite 16	Kapitel 1 Seite 16	Kapitel 2 Seite 18	Kapitel 2 Seite 18	Kapitel 3, 7 Seite21,22 32	Kapitel 4 Seite 26	Kapitel 5 Seite 27	Kapitel 5 Seite 27	Kapitel 5 Seite 27	Kapitel 21 Seite 60
Agilent	1050									X		X			
Agilent	1050 (34 Pos. Tray)				X										
Agilent	1090									X		X			
Agilent	1090 (34 Pos. Tray)				X										
Agilent	1100									X		X			
Agilent	1200									X		X			
Agilent	G1888A														
Agilent	7673A				X					X		X			
Agilent	7683A				X		X			X		X			
Agilent	HS7694														
Agilent	7695A														
Agilent	79855(A)									X		X			
Agilent	5880									X		X			
Agilent	5890									X		X			
Agilent	6850 (27 Pos. Tray)									X		X			
Agilent	6850 (22 Pos. Tray)														
Agilent	6890									X		X			
Agilent	CTC HTS+HTC PAL	X			X	X				X		X			
Agilent	CTC GC PAL	X			X	X				X		X			
Agilent	CTC Combi PAL														
Agilent	Tekmar SOLATek72														
Agilent	Archon Pluge + Trap														
Agilent	AQUATek 70														
Agilent	7693A							X				X			
Agilent	HS7694														
Agilent	7697A														
AI	42 vial tray							X	X	X		X		X	X
AI	60 vial tray		X	X	X			X		X		X			
AI	CTC A200S	X				X		X		X		X			
AI	Headspace														
AIM	CPS-100							X		X		X			
AIM	CPS-200							X		X		X			
Alcott	708 AL														
Alcott	728														
Alcott	738							X		X	X	X			
Alcott	719 AL							X		X	X	X			
Alcott	719 D/ D-PCS							X		X	X	X			
Analytik Jena	multi N/C 3000 (TOC)														
Antec Leyden	AS 100							X		X	X	X			
Antek	736 Unisampler							X		X	X	X			
Antek	738							X		X	X	X			
Beckman	501				X			X		X	X	X			
Beckman	502/502e				X			X		X	X	X			
Beckman	504	X				X									
Beckman	507/507e				X			X	X	X	X	X			
Beckman	508 (System Gold)									X					
Beckman	Marathon							X	X	X		X		X	
Beckman	Promis							X	X	X		X		X	
Beckman	Triathlon,Standard Tray							X	X	X		X		X	X
Beckman	Triathlon, LSV Tray				X										
Beckman	Triathlon, Super-LSV Tray														
Beckman	Triathlon, Micro-Tray	X				X									
Bruker	LC51														
Cambridge Scientific Instruments	205 Series							X		X	X	X			
Cambridge Scientific Instruments	300 Series							X		X	X	X			
Carlo Erba	AS100	X			X	X		X	X	X		X		X	
Carlo Erba	AS200	X				X		X		X		X		X	
Carlo Erba	A200LC	X				X		X	X	X		X		X	
Carlo Erba	AS200S	X				X		X	X	X		X		X	
Carlo Erba	AS300	X			X	X		X	X	X		X		X	
Carlo Erba	AS800, 42 vial tray							X		X		X		X	X
Carlo Erba	AS800, 60 vial tray		X	X	X			X		X		X			
Carlo Erba	HS250														
Carlo Erba	HS500														
Carlo Erba	HS800														
Carlo Erba	HS850														
Cecil Instruments	CE4800							X		X	X	X			
Cecil Instruments	AutoQuest								X		X	X	X		
CTC (LEAP)	LC PAL (216 Pos.)							X	X	X	X	X		X	
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (200 Pos. Tray)	X													
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (54/98 Pos. Tray)				X			X	X	X	X	X		X	
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (32 Pos. Tray)														
CTC (LEAP)	Combi PAL (200 Pos. Tray), GC PAL (200 Pos. Tray)	X													
CTC (LEAP)	Combi PAL (98 Pos. Tray), GC PAL (98 Pos. Tray)				X					X		X		X	
CTC (LEAP)	Combi PAL SPME Mode (98 Pos. Tray)									X		X		X	
CTC (LEAP)	Combi PAL (32 Pos. Tray), GC PAL (32 Pos. Tray)														
CTC (LEAP)	Combi PAL SPME Mode (32 Pos. Tray)														
CTC	PAL HPLC-Systems	X						X		X	X	X			
CTC	PAL Combi-xt Liqid Mode	X						X		X	X	X			
CTC	Combi-xt Headspace Option											X			
CTC	GC-xt Headspace Option	X						X		X	X	X			
CTC	PAL HTC-xt	X						X		X	X	X			
CTC	HTS-xt	X						X		X	X	X			
CTC	HTX-xt	X						X		X	X	X			

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Autosampler Kompatibilitätsübersicht

		Schnappring ND11 (11 09 0627, 11 09 0644, 11 09 0645, 11 09 2276, 11 09 2353, 11 14 1190, 11 14 1266, 11 14 1656, 11 14 1695, 11 19 0933, 11 19 1022, 11 19 1217, 11 19 1707) Kapitel 6 Seite 30 / 7 32	Gewinde ND13 (13 09 0222, 13 09 0280, 13 09 1335, 13 09 1336) Kapitel 8 Seite 33	Flachbodengläser (08 14 0641) Kapitel 9 Seite 35	Flachbodengläser (08 14 1168, 08 14 1169, 08 14 0513, 08 14 0595) Kapitel 9 Seite 35	Flachbodengläser (11 14 0544, 11 14 0545) Kapitel 9 Seite 35	Flachbodengläser (15 14 0548, 15 14 0562) Kapitel 9 Seite 35	Headspace ND20 (ND18) (20 09 0342) Kapitel 10 Seite 37, 39	Headspace ND20 (ND18) (20 09 1405, 20 09 1691) Kapitel 10 Seite 37, 38	Headspace ND20 (ND18) (18 09 0864, 20 09 0297, 20 09 0440, 20 09 1223) Kapitel 10 Seite 37, 39	Headspace ND20 (ND18) (20 09 0795, 20 09 0796) Kapitel 10 Seite 37, 38	Headspace ND20 (ND18) (18 09 1306, 18 09 1307, 18 09 1310, 18 09 1311, 20 09 0873, 20 09 1222, 20 09 1690) Kapitel 10 Seite 37-39	Headspace ND20 (ND18) (20 09 0801) Kapitel 10 Seite 37, 39	Headspace ND20 (ND18) (20 09 0802) Kapitel 10 Seite 37, 39	Gewinde ND24 (EPA) (24 09 0402, 24 09 0589, 24 09 0839, 24 09 0923, 24 09 0927, 24 09 0928, 24 09 1089, 24 09 1090) Kapitel 12 Seite 45
Agilent	1050	X													
Agilent	1050 (34 Pos. Tray)														
Agilent	1090	X													
Agilent	1090 (34 Pos. Tray)														
Agilent	1100	X													
Agilent	1200	X													
Agilent	G1888A		X								X				
Agilent	7673A														
Agilent	7683A														
Agilent	HS7694		X								X				
Agilent	7695A														X
Agilent	79855(A)	X													
Agilent	5880														
Agilent	5890														
Agilent	6850 (27 Pos. Tray)														
Agilent	6850 (22 Pos. Tray)		X												
Agilent	6890														
Agilent	CTC HTS+HTC PAL	X													
Agilent	CTC GC PAL														
Agilent	CTC Combi PAL								X			X			
Agilent	Tekmar SOLATek72														X
Agilent	Archon Pluge + Trap														X
Agilent	AQUATek 70														X
Agilent	7693A	X	X		X										
Agilent	HS7694		X								X				
Agilent	7697A										X				
AI	42 vial tray														
AI	60 vial tray														
AI	CTC A200S														
AI	Headspace								X			X			
AIM	CPS-100														
AIM	CPS-200														
Alcott	708 AL			X											
Alcott	728			X											
Alcott	738	X				X									
Alcott	719 AL	X	X					X							
Alcott	719 D/ D-PCS	X													
Analytik Jena	multi N/C 3000 (TOC)														X
Antec Leyden	AS 100	X													
Antek	736 Unisampler	X													
Antek	738	X													
Beckman	501	X													
Beckman	502/502e	X													
Beckman	504														
Beckman	507/507e	X													
Beckman	508 (System Gold)								X						
Beckman	Marathon	X													
Beckman	Promis	X													
Beckman	Triathlon,Standard Tray	X						X	X						
Beckman	Triathlon, LSV Tray		X												
Beckman	Triathlon, Super-LSV Tray								X						
Beckman	Triathlon, Micro-Tray														
Bruker	LC51		X												
Cambridge Scientific Instruments	205 Series		X												
Cambridge Scientific Instruments	300 Series		X												
Carlo Erba	AS100	X				X									
Carlo Erba	AS200														
Carlo Erba	A200LC	X				X									
Carlo Erba	AS200S														
Carlo Erba	AS300	X				X									
Carlo Erba	AS800, 42 vial tray														
Carlo Erba	AS800, 60 vial tray														
Carlo Erba	HS250								X						
Carlo Erba	HS500								X						
Carlo Erba	HS800								X			X			
Carlo Erba	HS850								X			X			
Cecil Instruments	CE4800	X													
Cecil Instruments	AutoQuest	X	X		X										
CTC (LEAP)	LC PAL (216 Pos.)	X							X						
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (200 Pos. Tray)														
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (54/98 Pos. Tray)	X							X						
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (32 Pos. Tray)											X			
CTC (LEAP)	Combi PAL (200 Pos. Tray), GC PAL (200 Pos. Tray)														
CTC (LEAP)	Combi PAL (98 Pos. Tray), GC PAL (98 Pos. Tray)														
CTC (LEAP)	Combi PAL SPME Mode (98 Pos. Tray)														
CTC (LEAP)	Combi PAL (32 Pos. Tray), GC PAL (32 Pos. Tray)								X			X			
CTC (LEAP)	Combi PAL SPME Mode (32 Pos. Tray)											X			
CTC	PAL HPLC-Systems								X			X			
CTC	PAL Combi-xt Liqid Mode								X			X			
CTC	Combi-xt Headspace Option								X			X			
CTC	GC-xt Headspace Option								X			X			
CTC	PAL HTC-xt								X			X			
CTC	HTS-xt								X			X			
CTC	HTX-xt								X			X			

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Autosampler Kompatibilitätsübersicht

		Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Rollrand ND8	Gewinde ND8	Gewinde ND8	Kurzgewinde ND9	Gewinde ND10	Rollrand ND11	Rollrand ND11	Rollrand ND11
		08 09 0405 08 09 0406	08 09 0284	08 09 0845 08 09 0953	08 09 0276 08 09 0606	08 09 0258 08 09 0305	08 09 1080	11 09 0210 11 09 0259 11 09 0382 11 09 0419	11 09 0417	11 09 0500 11 09 0519 11 09 0520 11 09 1241 11 09 1242 11 09 0999 11 09 1957 11 09 0620 11 09 2275 11 09 2357 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1516 11 19 1216 11 19 1706	10 09 0743 10 09 1196 10 09 1197	11 09 0184 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619	11 09 0486	11 09 0415	11 09 0831
		Kapitel 1 Seite 16	Kapitel 1 Seite 16	Kapitel 1 Seite16	Kapitel 1 Seite 16	Kapitel 1 Seite 16	Kapitel 1 Seite 16	Kapitel 2 Seite 18	Kapitel 2 Seite 18	Kapitel 3, 7 Seite21,22 32	Kapitel 4 Seite 26	Kapitel 5 Seite 27	Kapitel 5 Seite 27	Kapitel 5 Seite 27	Kapitel 21 Seite 60
CTC	Combi-xt SPME Options											X			
CTC	A200S	X				X		X		X	X	X			
CTC	A200 LC	X				X		X	X	X	X	X		X	
CTC	HS 500														
DANI	ALS 39.80									X		X			
DANI	ALS 86.80									X		X			
DANI	ALS 1000									X		X			
DANI	HS39.50														
DANI	HS86.50														
DANI	Master AS									X		X			
Dimatec	Dimatoc 2000														
Dionex	Gina 50			X						X		X			
Dionex	AS 50				X			X		X	X				
Dionex	Summit ASI 100, Micro-Tray (192 Pos.)			X											
Dionex	Summit ASI 100, Analytical-Tray (117 Pos.)							X		X		X			
Dionex	Summit ASI 100, Semiprep.-Tray (63 Pos.)														
Dionex	Famos (LC Packings/Dionex)							X		X	X	X			
Dionex	UltiMate Analytical, cylindrical, WPS-3000 SL, 120 Pos. Rack (2ml)							X		X	X	X			
Dionex	UltiMate Analytical, conical, WPS-3000 SL, 120 (3x40) Pos. Rack (1.1ml=2ml w. Inserts)													X	
Dionex	UltiMate Micro, conical, WPS-3000 SL, 120 (3x40) Pos. Rack (250µl)				X										
Dionex	UltiMate Semipreparative, WPS-3000 SL, 66 (3x22) Pos. Rack (4ml)														
Dionex	UltiMate Nano/Cap/Micro, WPS-3000 SL, 216 (3x72) Pos. Rack (1.2ml)			X											
Dionex	ASE 200														
Dionex	AS 40														
Dionex	HS-HV							X							
Dimatec	Dimatoc 200														
Dimatec	Dimatoc 300														
Dimatec	Dimatoc 400														
D-Star	DAS 10							X				X			
Dynatech	42 vial tray							X	X	X		X		X	X
Dynatech	60 vial tray		X	X	X			X		X		X			
Dynatech	LC2000			X											
Dynatech	GC111		X					X				X			
Dynatech	GC311		X					X				X			
EST Analytical	Cobra L/S GC Autosampler; 120 vial tray							X		X	X	X			
EST Analytical	Cobra L/S GC Autosampler; 60 vial tray														
EST Analytical	Markelov HS9000														
EST Analytical	Archon P/T														
EST Analytical	Centurion 100														
Finnigan	A200S	X				X		X		X		X			
Fisons	AS100	X			X	X		X	X	X		X		X	
Fisons	AS200	X				X		X		X		X		X	
Fisons	A200LC	X				X		X	X	X		X		X	
Fisons	AS200S	X				X		X	X	X		X		X	
Fisons	AS300	X			X	X		X	X	X		X		X	
Fisons	AS800, 42 vial tray							X		X		X		X	X
Fisons	AS800, 60 vial tray		X	X	X			X		X		X			
Fisons	HS250														
Fisons	HS500														
Fisons	HS800														
Fisons	HS850														
GBC	Avanta Ultra Z									X		X			
GE Instruments	Sievers® 900														
Gerstel	MPS2	X			X	X						X		X	
Gilson	201/202							X		X					
Gilson	221/222							X		X					
Gilson	231/401							X		X					
Gilson	232/402							X		X					
Gilson	Aspec							X		X					
Gilson	Aspec Xli							X		X					
Gilson	Aspec XL4							X		X					
Gilson	221XL/222XL	X			X (nur f. 221XL)	X									
Gilson	223	X				X									
Gilson	231XL/232XL/233XL	X			X (nur f. 231XL)	X									
Gilson	Nano Injektor							X		X					
Gilson	235/235P/SP 235/SP 235P	X				X		X		X					
Gynkotek	Gina 50			X						X		X			
Hach Lange	IL 550 TOC-TN														
HTA	HT200H														
HTA	HT250D							X		X	X	X			X
HTA	HT280T							X		X	X	X			X
HTA	HT300A							X		X	X	X			X
HTA	HT310A							X		X	X	X			X
HTA	HT300L							X		X	X	X			
ICI	LC1600	X				X									X
IMT GmbH	VSP4000														
IMT GmbH	PTA3000														

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Autosampler Kompatibilitätsübersicht

		Schnappring ND11	Gewinde ND13	Flachbodengläser	Flachbodengläser	Flachbodengläser	Flachbodengläser	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Gewinde ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 1022 11 19 1217 11 19 1707	13 09 0222 13 09 0280 13 09 1335 13 09 1336	08 14 0641	08 14 1168 08 14 1169 08 14 0513 08 14 0595	11 14 0544 11 14 0545	15 14 0548 15 14 0562	20 09 0342	20 09 1405 20 09 1691	18 09 0864 20 09 0297 20 09 0440 20 09 1223	20 09 0795 20 09 0796	18 09 1306 18 09 1307 18 09 1310 18 09 1311 20 09 0873 20 09 1222 20 09 1690	20 09 0801	20 09 0802	24 09 0402 24 09 0589 24 09 0839 24 09 0923 24 09 0927 24 09 0928 24 09 1089 24 09 1090
		Kapitel 6 7 Seite 30 32	Kapitel 8 Seite 33	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 38	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 38	Kapitel 10 Seite 37-39	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 39	Kapitel 12 Seite 45
CTC	Combi-xt SPME Options								X			X			
CTC	A200S														
CTC	A200 LC	X							X						
CTC	HS 500								X						
DANI	ALS 39.80	X													
DANI	ALS 86.80	X													
DANI	ALS 1000	X													
DANI	HS39.50										X				
DANI	HS86.50										X				
DANI	Master AS	X									X				
Dimatec	Dimatoc 2000														X
Dionex	Gina 50	X	X												
Dionex	AS 50	X													
Dionex	Summit ASI 100, Micro-Tray (192 Pos.)														
Dionex	Summit ASI 100, Analytical-Tray (117 Pos.)	X													
Dionex	Summit ASI 100, Semiprep.-Tray (63 Pos.)		X												
Dionex	Famos (LC Packings/Dionex)	X							X						
Dionex	UltiMate Analytical, cylindrical, WPS-3000 SL, 120 Pos. Rack (2ml)	X							X						
Dionex	UltiMate Analytical, conical, WPS-3000 SL, 120 (3x40) Pos. Rack (1.1ml=2ml w. Inserts)								X						
Dionex	UltiMate Micro, conical, WPS-3000 SL, 120 (3x40) Pos. Rack (250µl)								X						
Dionex	UltiMate Semipreparative, WPS-3000 SL, 66 (3x22) Pos. Rack (4ml)		X						X						
Dionex	UltiMate Nano/Cap/Micro, WPS-3000 SL, 216 (3x72) Pos. Rack (1.2ml)								X						
Dionex	ASE 200														X
Dionex	AS 40		X		X										
Dionex	HS-HV														
Dimatec	Dimatoc 200														X
Dimatec	Dimatoc 300														X
Dimatec	Dimatoc 400														X
D-Star	DAS 10														
Dynatech	42 vial tray														
Dynatech	60 vial tray														
Dynatech	LC2000														
Dynatech	GC111														
Dynatech	GC311														
EST Analytical	Cobra L/S GC Autosampler; 120 vial tray														
EST Analytical	Cobra L/S GC Autosampler; 60 vial tray								X						
EST Analytical	Markelov HS9000											X			
EST Analytical	Archon P/T														X
EST Analytical	Centurion 100														X
Finnigan	A200S														
Fisons	AS100	X				X									
Fisons	AS200														
Fisons	A200LC	X				X									
Fisons	AS200S														
Fisons	AS300	X				X									
Fisons	AS800, 42 vial tray														
Fisons	AS800, 60 vial tray														
Fisons	HS250								X						
Fisons	HS500								X						
Fisons	HS800								X			X			
Fisons	HS850								X			X			
GBC	Avanta Ultra Z	X				X									
GE Instruments	Sievers® 900														X
Gerstel	MPS2								X			X			
Gilson	201/202					X	X								
Gilson	221/222					X	X								
Gilson	231/401					X									
Gilson	232/402					X									
Gilson	Aspec					X	X								
Gilson	Aspec Xli														
Gilson	Aspec XL4														
Gilson	221XL/222XL														
Gilson	223														
Gilson	231XL/232XL/233XL														
Gilson	Nano Injektor														
Gilson	235/235P/SP 235/SP 235P														
Gynkotek	Gina 50	X	X												
Hach Lange	IL 550 TOC-TN														X
HTA	HT200H										X				
HTA	HT250D	X									X				
HTA	HT280T	X									X				
HTA	HT300A	X													
HTA	HT310A	X													
HTA	HT300L	X									X				
ICI	LC1600														
IMT GmbH	VSP4000														X
IMT GmbH	PTA3000														

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Autosampler Kompatibilitätsübersicht

Hersteller	Modell	Rollrand ND8 08 09 0405 08 09 0406 Kapitel 1 Seite 16	Rollrand ND8 08 09 0284 Kapitel 1 Seite 16	Rollrand ND8 08 09 0845 08 09 0953 Kapitel 1 Seite16	Rollrand ND8 08 09 0276 08 09 0606 Kapitel 1 Seite 16	Rollrand ND8 08 09 0258 08 09 0305 Kapitel 1 Seite 16	Rollrand ND8 08 09 1080 Kapitel 1 Seite 16	Gewinde ND8 11 09 0210 11 09 0259 11 09 0382 11 09 0419 Kapitel 2 Seite 18	Gewinde ND8 11 09 0417 Kapitel 2 Seite 18	Kurzgewinde ND9 11 09 0500 11 09 0519 11 09 0520 11 09 1241 11 09 1242 11 09 0999 11 09 1957 11 09 0620 11 09 2275 11 09 2357 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1516 11 19 1216 11 19 1706 Kapitel 3, 7 Seite21,22 32	Gewinde ND10 10 09 0743 10 09 1196 10 09 1197 Kapitel 4 Seite 26	Rollrand ND11 11 09 0184 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619 Kapitel 5 Seite 27	Rollrand ND11 11 09 0486 Kapitel 5 Seite 27	Rollrand ND11 11 09 0415 Kapitel 5 Seite 27	Rollrand ND11 11 09 0831 Kapitel 21 Seite 60
Jasco	AS 2055/AS 2055 (i)				X			X		X	X	X			
Jasco	AS 2057/AS 2057 (i)				X			X		X	X	X			
Jasco	AS 2059				X			X		X	X	X			
Knauer	K-3800 (Basic Marathon)							X	X	X		X		X	
Knauer	Smartline K-3950							X		X		X			
Knauer	PLATINblue AS-1							X		X		X			
Konik -Tech	Robokrom Static HS														
Konik -Tech	Robokrom HRGC	X				X						X			
Konik -Tech	Robokrom HPLC							X	X	X	X	X		X	
Kontron	MSI 660							X							
Kontron	360, 460				X			X	X	X		X		X	
LDC	713-60		X		X										
LDC	Marathon							X	X	X		X		X	
LDC	Promis							X	X	X		X		X	
LEAP	siehe CTC														
O.I. Analytical	1020A														
O.I. Analytical	1088														
O.I. Analytical	1096+														
O.I. Analytical	4551A														
O.I. Analytical	1552														
PerkinElmer	Series 200, 25 vial tray														
PerkinElmer	Series 200, 85 vial tray										X	X			
PerkinElmer	Series 200, 81/100 vial tray										X	X			
PerkinElmer	Series 200, 205 vial tray				X						X	X			
PerkinElmer	Series 200, 225 vial tray				X										
PerkinElmer	AI-1		X		X							X			
PerkinElmer	AS-100/AS-100B		X		X							X			
PerkinElmer	AS2000/AS2000B		X				X				X	X			
PerkinElmer	AS-300		X		X							X			
PerkinElmer	AS8300		X		X							X			
PerkinElmer	Autosystem		X		X							X			
PerkinElmer	HS 6														
PerkinElmer	HS40/HS100/101														
PerkinElmer	TurboMatrix HS16/HS40/ HS40 XL/ HS40 Trap/ HS110/ HS110 Trap														
PerkinElmer	Integral 4000										X	X			
PerkinElmer	ISS-100, 85 vial tray										X	X			
PerkinElmer	ISS-100, 100 vial tray										X	X			
PerkinElmer	ISS-200, 85 vial tray										X	X			
PerkinElmer	ISS-200, 100 vial tray										X	X			
PerkinElmer	ISS-200, 145 vial tray				X										
PerkinElmer	ISS-225, 205 vial tray				X						X	X			
PerkinElmer	ISS-225, 100 vial tray + 80 vial tray										X	X			
PerkinElmer	ISS-225, 85 vial tray										X	X			
PerkinElmer	ISS-225, 25 vial tray														
PerkinElmer	LC 600, 42 vial tray		X												
PerkinElmer	LC 600, 60 vial tray										X	X			
PerkinElmer	Clarus 400, 500, 600											X			
Pharmacia	LKB 2157-010							X		X		X			
Pharmacia	LKB 2157-020	X				X									X
Polymer Laboratories	PL-AS RT							X		X	X	X			
Quma Elektronik	QHSS-40														
Sedere										X		X			
SGE	LS-3200	X				X									
Shimadzu	AOC-5000	X			X	X				X		X		X	
Shimadzu	AOC-14/1400							X	X	X	X	X		X	
Shimadzu	AOC-17							X	X	X	X	X		X	
Shimadzu	AOC-20/20i/20s 150 Pos. Tray							X	X	X	X	X		X	
Shimadzu	AOC-20/20i/20s 96 Pos. Tray														
Shimadzu	LC-20A							X	X	X	X	X		X	
Shimadzu	SIL-2AS				X			X	X	X	X	X		X	
Shimadzu	SIL-6A				X			X	X	X	X	X		X	
Shimadzu	SIL-6B/SIL-7A/SIL-8A/SIL-9A							X	X	X	X	X		X	
Shimadzu	SIL-10A/SIL-10AF/SIL-10AP/ SIL-10Ai/SIL-10AxL/Rack S 100 Pos.				X			X	X	X	X	X		X	
Shimadzu	SIL-10A/SIL-10AF/SIL-10AP/ SIL-10Ai/SIL-10AxL/Rack L 80 Pos.														
Shimadzu	SIL-10A/SIL-10AF/SIL-10AP/ SIL-10Ai/SIL-10AxL/Rack MTP2 192 Pos.														
Shimadzu	SIL-10HTA/SIL-10HTC 350 pos. Tray														
Shimadzu	SIL-10HTA/SIL-10HTC 140 Pos. Tray							X		X	X	X			
Shimadzu	SIL-10HTA/SIL-10HTC 100 Pos. Tray														
Shimadzu	SIL-10ADvp							X	X	X	X	X		X	
Shimadzu	HTA 200 H														
Shimadzu	SIL-20A (Prominence) 105 vial tray/SIL-20AC (Prominence) 70 vial tray				X			X	X	X	X	X		X	
Shimadzu	SIL-20A/Sil-20AC (Prominence) 175 vial tray														
Shimadzu	SIL-20A/Sil-20AC (Prominence) 50 vial tray														

La-Pha-Pack

Autosampler Kompatibilitätsübersicht

		Schnappring ND11	Gewinde ND13	Flachbodengläser	Flachbodengläser	Flachbodengläser	Flachbodengläser	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Gewinde ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 1022 11 19 1217 11 19 1707	13 09 0222 13 09 0280 13 09 1335 13 09 1336	08 14 0641	08 14 1168 08 14 1169 08 14 0513 08 14 0595	11 14 0544 11 14 0545	15 14 0548 15 14 0562	20 09 0342	20 09 1405 20 09 1691	18 09 0864 20 09 0297 20 09 0440 20 09 1223	20 09 0795 20 09 0796	18 09 1306 18 09 1307 18 09 1310 18 09 1311 20 09 0873 20 09 1222 20 09 1690	20 09 0801	20 09 0802	24 09 0402 24 09 0589 24 09 0839 24 09 0923 24 09 0927 24 09 0928 24 09 1089 24 09 1090
		Kapitel 6 Seite 30 / 7 32	Kapitel 8 Seite 33	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 38	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 38	Kapitel 10 Seite 37-39	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 39	Kapitel 12 Seite 45
Jasco	AS 2055/AS 2055 (i)	X													
Jasco	AS 2057/AS 2057 (i)	X													
Jasco	AS 2059	X													
Knauer	K-3800 (Basic Marathon)	X						X							
Knauer	Smartline K-3950	X						X							
Knauer	PLATINblue AS-1	X													
Konik -Tech	Robokrom Static HS								X			X			
Konik -Tech	Robokrom HRGC														
Konik -Tech	Robokrom HPLC	X													
Kontron	MSI 660		X												
Kontron	360, 460	X													
LDC	713-60														
LDC	Marathon	X													
LDC	Promis	X													
LEAP	siehe CTC														
O.I. Analytical	1020A														X
O.I. Analytical	1088														X
O.I. Analytical	1096+														X
O.I. Analytical	4551A														X
O.I. Analytical	1552														X
PerkinElmer	Series 200, 25 vial tray							X							
PerkinElmer	Series 200, 85 vial tray							X							
PerkinElmer	Series 200, 81/100 vial tray														
PerkinElmer	Series 200, 205 vial tray														
PerkinElmer	Series 200, 225 vial tray														
PerkinElmer	AI-1														
PerkinElmer	AS-100/AS-100B														
PerkinElmer	AS2000/AS2000B														
PerkinElmer	AS-300														
PerkinElmer	AS8300														
PerkinElmer	Autosystem														
PerkinElmer	HS 6							X							
PerkinElmer	HS40/HS100/101							X		X					
PerkinElmer	TurboMatrix HS16/HS40/ HS40 XL/ HS40 Trap/ HS110/HS110 Trap							X** (Nicht geeignet für Turboma-trix™ 110)		X		X* (Für Turboma-trix™ 16, 40, 110 produziert nach dem 1.9.06)			
PerkinElmer	Integral 4000														
PerkinElmer	ISS-100, 85 vial tray							X							
PerkinElmer	ISS-100, 100 vial tray														
PerkinElmer	ISS-200, 85 vial tray							X							
PerkinElmer	ISS-200, 100 vial tray														
PerkinElmer	ISS-200, 145 vial tray														
PerkinElmer	ISS-225, 205 vial tray														
PerkinElmer	ISS-225, 100 vial tray + 80 vial tray														
PerkinElmer	ISS-225, 85 vial tray							X							
PerkinElmer	ISS-225, 25 vial tray							X							
PerkinElmer	LC 600, 42 vial tray														
PerkinElmer	LC 600, 60 vial tray														
PerkinElmer	Clarus 400, 500, 600														
Pharmacia	LKB 2157-010	X													
Pharmacia	LKB 2157-020														
Polymer Labora-tories	PL-AS RT	X	X												
Quma Elektronik	QHSS-40										X				
Sedere		X													
SGE	LS-3200														
Shimadzu	AOC-5000								X			X			
Shimadzu	AOC-14/1400	X	X						X						
Shimadzu	AOC-17	X	X												
Shimadzu	AOC-20/20i/20s 150 Pos. Tray		X												
Shimadzu	AOC-20/20i/20s 96 Pos. Tray		X												
Shimadzu	LC-20A	X	X												
Shimadzu	SIL-2AS	X	X				X								
Shimadzu	SIL-6A	X	X				X								
Shimadzu	SIL-6B/SIL-7A/SIL-8A/SIL-9A	X	X			X	X								
Shimadzu	SIL-10A/SIL-10AF/SIL-10AP/ SIL-10Ai/SIL-10AxL/Rack S 100 Pos.	X				X									
Shimadzu	SIL-10A/SIL-10AF/SIL-10AP/ SIL-10Ai/SIL-10AxL/Rack L 80 Pos.		X				X								
Shimadzu	SIL-10A/SIL-10AF/SIL-10AP/ SIL-10Ai/SIL-10AxL/Rack MTP2 192 Pos.				X										
Shimadzu	SIL-10HTA/SIL-10HTC 350 pos. Tray				X										
Shimadzu	SIL-10HTA/SIL-10HTC 140 Pos. Tray	X				X									
Shimadzu	SIL-10HTA/SIL-10HTC 100 Pos. Tray		X				X								
Shimadzu	SIL-10ADvp	X	X		X	X	X								
Shimadzu	HTA 200 H										X	X			
Shimadzu	SIL-20A (Prominence) 105 vial tray/SIL-20AC (Promi-nence) 70 vial tray	X													
Shimadzu	SIL-20A/Sil-20AC (Promi-nence) 175 vial tray				X										
Shimadzu	SIL-20A/Sil-20AC (Promi-nence) 50 vial tray		X				X								

La-Pha-Pack

Autosampler Kompatibilitätsübersicht

		Rollrand ND8 08 09 0405 08 09 0406 Kapitel 1 Seite 16	Rollrand ND8 08 09 0284 Kapitel 1 Seite 16	Rollrand ND8 08 09 0845 08 09 0953 Kapitel 1 Seite16	Rollrand ND8 08 09 0276 08 09 0606 Kapitel 1 Seite 16	Rollrand ND8 08 09 0258 08 09 0305 Kapitel 1 Seite 16	Rollrand ND8 08 09 1080 Kapitel 1 Seite 16	Gewinde ND8 11 09 0210 11 09 0259 11 09 0382 11 09 0419 Kapitel 2 Seite 18	Gewinde ND8 11 09 0417 Kapitel 2 Seite 18	Kurzgewinde ND9 11 09 0500 11 09 0519 11 09 0520 11 09 1241 11 09 1242 11 09 0999 11 09 1957 11 09 0620 11 09 2275 11 09 2357 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1516 11 19 1216 11 19 1706 Kapitel 3, 7 Seite21,22 32	Gewinde ND10 10 09 0743 10 09 1196 10 09 1197 Kapitel 4 Seite 26	Rollrand ND11 11 09 0184 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619 Kapitel 5 Seite 27	Rollrand ND11 11 09 0486 Kapitel 5 Seite 27	Rollrand ND11 11 09 0415 Kapitel 5 Seite 27	Rollrand ND11 11 09 0831 Kapitel 21 Seite 60
Shimadzu	LC2010C + LC2010A 350 Pos. Tray														
Shimadzu	LC2010C + LC2010A 140 Pos. Tray							X		X	X	X		X	
Shimadzu	LC2010C + LC2010A 100 Pos. Tray														
Shimadzu	ASI-V														
Shimadzu	HSS-2B														
Shimadzu	SIL 30-ACMP							X		X		X			
Sievers (GE Instruments)	Sievers® 900														
Spark	Marathon Basic, Standard 96 Pos. Tray							X	X	X		X		X	
Spark	Marathon Basic Präp King Size 48 Pos. Tray														
Spark	Midas, Standard 84 Pos. Tray							X	X	X		X		X	X
Spark	Midas, Large Capacity 96 Pos. Tray							X	X	X		X		X	X
Spark	Midas, Large Volume 24 Pos. Tray														
Spark	Alias							X	X	X		X		X	
Spark	Promis							X	X	X		X		X	
Spark	SPH 125								X	X		X		X	
Spark	Triathlon,Standard 96 Tray							X	X	X		X		X	X
Spark	Triathlon, LSV 72 Pos. Tray														
Spark	Triathlon, Super-LSV 32 Pos. Tray														
Spark	Triathlon, Micro 160 Pos. Tray	X				X									
Spark	Endurance 48 Pos. Tray							X	X	X		X		X	
Spark	Reliance 48 Pos. Tray							X	X	X		X		X	
Spark	Interity									X		X			
Spark	Prospekt 2											X			
Spark	Reliance/Symbiosis Pharma											X			
Spark	Dried Blood Spot (DBS)							X		X		X			
Spark	Integrity							X		X		X			
Spark	Optimas							X		X		X			
Spark	Alias							X	X	X		X		X	
Spectra-Physics	8875							X		X		X			
Spectra-Physics	8880							X		X		X			
Spectra-Physics	SpectraSYSTEM AS1000	X			X	X		X		X		X		X	
Spectra-Physics	SpectraSYSTEM AS 3000	X		X	X	X		X		X		X		X	X
Spectra-Physics	SpectraSYSTEM AS 3500	X			X	X		X		X		X		X	
Sykam	S 5200									X					
Talbot										X		X			
Teledyne Tekmar	7000/7000HT/7050														
Teledyne Tekmar	AQUATek 70/SOLATek 72™														
Teledyne Tekmar	STS 8000 TOC														
Teledyne Tekmar	HT3														
Thermo Scientific	AS1000 (Trace GC)	X			X	X		X		X		X		X	
Thermo Scientific	AS200	X				X		X	X	X		X		X	
Thermo Scientific	AS300	X			X	X		X	X	X		X		X	
Thermo Scientific	AS2000 30 vial tray														
Thermo Scientific	AS2000 90 vial tray (Trace GC)			X				X	X	X		X		X	X
Thermo Scientific	AI3000 (II)/AS3000 (II) AS3500 (Trace GC + Focus GC)	X			X	X				X		X		X	
Thermo Scientific	A200LC	X				X		X	X	X		X		X	
Thermo Scientific	SpectraSYSTEM AS 1000	X			X	X		X		X		X		X	
Thermo Scientific	SpectraSYSTEM AS 3000	X		X	X	X		X		X		X		X	X
Thermo Scientific	SpectraSYSTEM AS 3500	X			X	X		X		X		X		X	
Thermo Scientific	A200S	X				X		X	X	X		X		X	
Thermo Scientific	AS100	X			X	X		X	X	X		X		X	
Thermo Scientific	AS800, 42 vial tray							X		X		X		X	X
Thermo Scientific	AS800, 60 vial tray		X	X	X			X		X		X			
Thermo Scientific	HS250														
Thermo Scientific	HS500														
Thermo Scientific	HS800														
Thermo Scientific	HS850														
Thermo Scientific	HS2000														
Thermo Scientific	TriPlus (=GC PAL) (AS+ Duo)	X		X	X	X		X		X		X		X	X
Thermo Scientific	TriPlus HS														
Thermo Scientific	TriPlus SPME														
Thermo Scientific	HiPerTOC														
Thermo Scientific	Surveyor (Surveyor Plus)	X			X	X		X		X		X		X	
Thermo Scientific	Accela High Speed LC Autosampler (200 Pos.)	X			X	X		X		X		X			
Thermo Scientific	Accela Open Autosampler	X				X	X		X	X		X			
Thermo Scientific	Trace 1300 Series							X		X	X	X			
Tosoh	AS-8010									X		X			
Tosoh	TSK-6080									X		X			
Tracor	770/771/772							X		X		X			
TSP	8875							X		X		X			
TSP	8880							X		X		X			
Unicam	4247							X		X		X			
Unicam	4710							X		X		X			
Unicam	4700 (GC)	X				X									
Unicam	4700 (LC)	X				X		X	X	X					
Unicam	LC-XP							X	X	X		X		X	
Unicam	S4/S8	X				X									
Varian	ProStar 400, Standard 96 Pos. Tray							X	X	X	X	X		X	

La-Pha-Pack

Autosampler Kompatibilitätsübersicht

		Schnappring ND11	Gewinde ND13	Flachbodengläser	Flachbodengläser	Flachbodengläser	Flachbodengläser	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Gewinde ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 1022 11 19 1217 11 19 1707	13 09 0222 13 09 0280 13 09 1335 13 09 1336	08 14 0641	08 14 1168 08 14 1169 08 14 0513 08 14 0595	11 14 0544 11 14 0545	15 14 0548 15 14 0562	20 09 0342	20 09 1405 20 09 1691	18 09 0864 20 09 0297 20 09 0440 20 09 1223	20 09 0795 20 09 0796	18 09 1306 18 09 1307 18 09 1310 18 09 1311 20 09 0873 20 09 1222 20 09 1690	20 09 0801	20 09 0802	24 09 0402 24 09 0589 24 09 0839 24 09 0923 24 09 0927 24 09 0928 24 09 1089 24 09 1090
		Kapitel 6 Seite 30 / 7 32	Kapitel 8 Seite 33	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 9 Seite 35	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 38	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 38	Kapitel 10 Seite 37-39	Kapitel 10 Seite 37, 39	Kapitel 10 Seite 37, 39	Kapitel 12 Seite 45
Shimadzu	LC2010C + LC2010A 350 Pos. Tray				X										
Shimadzu	LC2010C + LC2010A 140 Pos. Tray	X				X									
Shimadzu	LC2010C + LC2010A 100 Pos. Tray		X				X								
Shimadzu	ASI-V														X
Shimadzu	HSS-2B										X	X			
Shimadzu	SIL 30-ACMP														
Sievers (GE Instruments)	Sievers® 900														X
Spark	Marathon Basic, Standard 96 Pos. Tray	X													
Spark	Marathon Basic Präp King Size 48 Pos. Tray							X							
Spark	Midas, Standard 84 Pos. Tray	X							X						
Spark	Midas, Large Capacity 96 Pos. Tray	X													
Spark	Midas, Large Volume 24 Pos. Tray								X						
Spark	Alias	X								X					
Spark	Promis	X													
Spark	SPH 125	X													
Spark	Triathlon,Standard 96 Tray	X				X									
Spark	Triathlon, LSV 72 Pos. Tray		X												
Spark	Triathlon, Super-LSV 32 Pos. Tray								X						
Spark	Triathlon, Micro 160 Pos. Tray														
Spark	Endurance 48 Pos. Tray	X													
Spark	Reliance 48 Pos. Tray	X													
Spark	Interity	X													
Spark	Prospekt 2	X													
Spark	Reliance/Symbiosis Pharma	X													
Spark	Dried Blood Spot (DBS)														
Spark	Integrity														
Spark	Optimas														
Spark	Alias	X							X						
Spectra-Physics	8875	X													
Spectra-Physics	8880	X													
Spectra-Physics	SpectraSYSTEM AS1000	X				X									
Spectra-Physics	SpectraSYSTEM AS 3000	X				X									
Spectra-Physics	SpectraSYSTEM AS 3500	X				X									
Sykam	S 5200	X													
Talbot		X													
Teledyne Tekmar	7000/7000HT/7050									X					
Teledyne Tekmar	AQUATek 70/SOLATek 72™														X
Teledyne Tekmar	STS 8000 TOC														X
Teledyne Tekmar	HT3									X		X			
Thermo Scientific	AS1000 (Trace GC)														
Thermo Scientific	AS200														
Carlo Erba	AS300	X				X									
Thermo Scientific	AS2000 30 vial tray								X						
Thermo Scientific	AS2000 90 vial tray (Trace GC)														
Thermo Scientific	AI3000 (II)/AS3000 (II) AS3500(Trace GC + Focus GC)								X						
Thermo Scientific	A200LC	X				X									
Thermo Scientific	SpectraSYSTEM AS 1000	X				X									
Thermo Scientific	SpectraSYSTEM AS 3000	X				X									
Thermo Scientific	SpectraSYSTEM AS 3500	X				X									
Thermo Scientific	A200S														
Thermo Scientific	AS100	X				X									
Thermo Scientific	AS800, 42 vial tray														
Thermo Scientific	AS800, 60 vial tray														
Thermo Scientific	HS250								X						
Thermo Scientific	HS500								X						
Thermo Scientific	HS800								X			X			
Thermo Scientific	HS850								X			X			
Thermo Scientific	HS2000								X			X			
Thermo Scientific	TriPlus (=GC PAL) (AS+ Duo)								X			X			
Thermo Scientific	TriPlus HS								X			X			
Thermo Scientific	TriPlus SPME								X			X			
Thermo Scientific	HiPerTOC														X
Thermo Scientific	Surveyor (Surveyor Plus)	X				X			X						
Thermo Scientific	Accela High Speed LC Autosampler (200 Pos.)	X													
Thermo Scientific	Accela Open Autosampler	X													
Thermo Scientific	Trace 1300 Series	X						X		X	X				
Tosoh	AS-8010	X													
Tosoh	TSK-6080	X	X												
Tracor	770/771/772														
TSP	8875	X													
TSP	8880	X													
Unicam	4247														
Unicam	4710														
Unicam	4700 (GC)														
Unicam	4700 (LC)														
Unicam	LC-XP		X												
Unicam	S4/S8														
Varian	ProStar 400, Standard 96 Pos. Tray	X													

La-Pha-Pack

Autosampler Kompatibilitätsübersicht

		Rollrand ND8 08 09 0405 08 09 0406 Kapitel 1 Seite 16	Rollrand ND8 08 09 0284 Kapitel 1 Seite 16	Rollrand ND8 08 09 0845 08 09 0953 Kapitel 1 Seite16	Rollrand ND8 08 09 0276 08 09 0606 Kapitel 1 Seite 16	Rollrand ND8 08 09 0258 08 09 0305 Kapitel 1 Seite 16	Rollrand ND8 08 09 1080 Kapitel 1 Seite 16	Gewinde ND8 11 09 0210 11 09 0259 11 09 0382 11 09 0419 Kapitel 2 Seite 18	Gewinde ND8 11 09 0417 Kapitel 2 Seite 18	Kurzgewinde ND9 11 09 0500 11 09 0519 11 09 0520 11 09 1241 11 09 1242 11 09 0999 11 09 1957 11 09 0620 11 09 2275 11 09 2357 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1516 11 19 1216 11 19 1706 Kapitel 3, 7 Seite21,22 32	Gewinde ND10 10 09 0743 10 09 1196 10 09 1197 Kapitel 4 Seite 26	Rollrand ND11 11 09 0184 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619 Kapitel 5 Seite 27	Rollrand ND11 11 09 0486 Kapitel 5 Seite 27	Rollrand ND11 11 09 0415 Kapitel 5 Seite 27	Rollrand ND11 11 09 0831 Kapitel 21 Seite 60
Varian	ProStar 400, King Size 48 Pos. Tray														
Varian	ProStar 410, Standard 84 Pos. Tray							X	X	X	X	X		X	X
Varian	ProStar 410, Large Capacity 96 Pos. Tray							X	X	X	X	X		X	X
Varian	ProStar 410, Large Volume 24 Pos. Tray														
Varian	ProStar 420, Standard 96 Pos. Tray							X	X	X	X	X		X	X
Varian	ProStar 420, LSV 72 Pos. Tray				X										
Varian	ProStar 420, Super-LSV 32 Pos. Tray														
Varian	ProStar 420, Micro 160 Pos. Tray	X				X									
Varian	ProStar 430, 48 Pos. Tray							X	X	X		X		X	
Varian	8035							X	X	X					
Varian	8000							X		X		X			
Varian	8400 (100 Pos.)							X		X		X			
Varian	8410-Autoinjector (10 x 2ml; 6 x 5ml; 5 x 10ml)							X		X		X			
Varian	8100							X		X		X			
Varian	8200							X		X	X	X			
Varian	CP-910, 911, 912							X		X		X			
Varian	CP-940, 941											X			
Varian	LC 9100/LC 9095/LC 9090									X		X			
Varian	Archon														
Varian	COMBI PAL (200 Pos. Tray) GC PAL (200 pos. Tray)	X				X									
Varian	COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray)				X					X		X			
Varian	COMBI PAL SPME mode (98 Pos. Tray)									X		X			
Varian	COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray)														
Varian	COMBI PAL SPME mode (32 Pos. Tray)														
Varian	Genesis														
Varian	Marathon Basic, Standard 96 Pos. Tray							X	X	X		X		X	
Varian	Marathon Basic, Präp, King Size 48 Pos. Tray														
Varian	Vista							X		X					
Varian	CP-9020/CP-9025														
Varian	CP-9060														
Varian	CP-9010							X		X		X			
Varian	920-LC/940-LC							X							
Viscotek	Vortex™														
Viscotek	GPC Autosampler							X		X	X				
VWR	Hitachi Chromaster							X		X		X			
VWR(Merck®)/ Hitachi	L2200 (LaChrom Elite)/ L2200-U (LaChrom Ultra) (200 Pos. Tray)							X		X					
VWR(Merck®)/ Hitachi	L2200 (LaChrom Elite) (128 Pos. Tray)														
VWR(Merck®)/ Hitachi	L7200 (LaChrom) (80 Pos. Tray)/L7250(LaChrom) (120 Pos. Tray)							X		X					
VWR(Merck®)/ Hitachi	L7250 (LaChrom) (Rack Holder for combination Racks)				X			X		X					
VWR(Merck®)/ Hitachi	655-A40 (108 Pos. Tray)							X		X					
VWR(Merck®)/ Hitachi	L-9100							X		X					
VWR(Merck®)/ Hitachi	AS 2000 (50 Pos. Tray)							X		X		X			
VWR(Merck®)/ Hitachi	AS 4000 (150 Pos. Tray)							X		X		X			
VWR(Merck®)/ Hitachi	AS 4000 (198 Pos. Tray)				X										
VWR(Merck®)/ Hitachi	AS 6000				X			X		X					
Waters®	ACQUITY™ UPLC Systeme									X					
Waters®	Wisp 48 position														
Waters®	Wisp 96 position														
Waters®	717, 96 Position Carousel														
Waters®	717, 48 Position Carousel														
Waters®	Alliance®									X	X	X			
Waters®	Alliance® GPC 2000														
Waters®	Alliance® HT Syst.									X	X	X			
Waters®	Alliance® 2790/2795									X	X	X			
Waters®	Acquity Sample Organizer									X					
Waters®	Acquity/CapLC/Waters/ Nano Acquity									X					
Waters®	Alliance® 2690/2695									X (nicht für 11 09 0620)	X	X			

X**: für 24 Position Plate

La-Pha-Pack

Autosampler Kompatibilitätsübersicht

Hersteller	Modell	Schnappring ND11 11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 1022 11 19 1217 11 19 1707 Kapitel 6 Seite 30 / 7 32	Gewinde ND13 13 09 0222 13 09 0280 13 09 1335 13 09 1336 Kapitel 8 Seite 33	Flachbodengläser 08 14 0641 Kapitel 9 Seite 35	Flachbodengläser 08 14 1168 08 14 1169 08 14 0513 08 14 0595 Kapitel 9 Seite 35	Flachbodengläser 11 14 0544 11 14 0545 Kapitel 9 Seite 35	Flachbodengläser 15 14 0548 15 14 0562 Kapitel 9 Seite 35	Headspace ND20 (ND18) 20 09 0342 Kapitel 10 Seite 37, 39	Headspace ND20 (ND18) 20 09 1405 20 09 1691 Kapitel 10 Seite 37, 38	Headspace ND20 (ND18) 18 09 0864 20 09 0297 20 09 0440 20 09 1223 Kapitel 10 Seite 37, 39	Headspace ND20 (ND18) 20 09 0795 20 09 0796 Kapitel 10 Seite 37, 38	Headspace ND20 (ND18) 18 09 1306 18 09 1307 18 09 1310 18 09 1311 20 09 0873 20 09 1222 20 09 1690 Kapitel 10 Seite 37-39	Headspace ND20 (ND18) 20 09 0801 Kapitel 10 Seite 37, 39	Headspace ND20 (ND18) 20 09 0802 Kapitel 10 Seite 37, 39	Gewinde ND24 (EPA) 24 09 0402 24 09 0589 24 09 0839 24 09 0923 24 09 0927 24 09 0928 24 09 1089 24 09 1090 Kapitel 12 Seite 45
Varian	ProStar 400, King Size 48 Pos. Tray							X							
Varian	ProStar 410, Standard 84 Pos. Tray	X							X						
Varian	ProStar 410, Large Capacity 96 Pos. Tray	X													
Varian	ProStar 410, Large Volume 24 Pos. Tray								X						
Varian	ProStar 420, Standard 96 Pos. Tray	X				X									
Varian	ProStar 420, LSV 72 Pos. Tray		X												
Varian	ProStar 420, Super-LSV 32 Pos. Tray							X	X						
Varian	ProStar 420, Micro 160 Pos. Tray														
Varian	ProStar 430, 48 Pos. Tray	X													
Varian	8035														
Varian	8000														
Varian	8400 (100 Pos.)												X		
Varian	8410-Autoinjector (10 x 2ml; 6 x 5ml; 5 x 10ml)												X	X	
Varian	8100														
Varian	8200														
Varian	CP-910, 911, 912														
Varian	CP-940, 941														
Varian	LC 9100/LC 9095/LC 9090	X													
Varian	Archon														X
Varian	COMBI PAL (200 Pos. Tray) GC PAL (200 pos. Tray)								X						
Varian	COMBI PAL (98 Pos. Tray) GC PAL (98 Pos. Tray)								X						
Varian	COMBI PAL SPME mode (98 Pos. Tray)								X						
Varian	COMBI PAL (32 Pos. Tray) GC PAL (32 Pos. Tray)								X			X			
Varian	COMBI PAL SPME mode (32 Pos. Tray)								X			X			
Varian	Genesis										X				
Varian	Marathon Basic, Standard 96 Pos. Tray	X													
Varian	Marathon Basic, Präp, King Size 48 Pos. Tray							X							
Varian	Vista														
Varian	CP-9020/CP-9025								X						
Varian	CP-9060								X						
Varian	CP-9010														
Varian	920-LC/940-LC	X													
Viscotek	Vortex™														X
Viscotek	GPC Autosampler														
VWR	Hitachi Chromaster		X												
VWR(Merck®)/ Hitachi	L2200 (LaChrom Elite)/ L2200-U (LaChrom Ultra) (200 Pos. Tray)	X													
VWR(Merck®)/ Hitachi	L2200 (LaChrom Elite) (128 Pos. Tray)		X												
VWR(Merck®)/ Hitachi	L7200 (LaChrom) (80 Pos. Tray)/L7250(LaChrom) (120 Pos. Tray)	X													
VWR(Merck®)/ Hitachi	L7250 (LaChrom) (Rack Holder for combination Racks)	X	X												X
VWR(Merck®)/ Hitachi	655-A40 (108 Pos. Tray)	X													
VWR(Merck®)/ Hitachi	L-9100	X													
VWR(Merck®)/ Hitachi	AS 2000 (50 Pos. Tray)	X													
VWR(Merck®)/ Hitachi	AS 4000 (150 Pos. Tray)	X													
VWR(Merck®)/ Hitachi	AS 4000 (198 Pos. Tray)														
VWR(Merck®)/ Hitachi	AS 6000	X													
Waters®	ACQUITY™ UPLC Systeme		X (für 24 Position Plate)												
Waters®	Wisp 48 position		X				X								
Waters®	Wisp 96 position				X										
Waters®	717, 96 Position Carousel				X										
Waters®	717, 48 Position Carousel		X				X								
Waters®	Alliance®	X													
Waters®	Alliance® GPC 2000		X						X						
Waters®	Alliance® HT Syst.	X													
Waters®	Alliance® 2790/2795	X													
Waters®	Acquity Sample Organizer	X													
Waters®	Acquity/CapLC/Waters/ Nano Acquity	X													
Waters®	Alliance® 2690/2695	X													

Zum Zeitpunkt des Druckes war diese Kompatibilitätsübersicht korrekt. Bitte beachten Sie, dass spätere Änderungen in den Spezifikationen der Hersteller zu abweichenden Kompatibilitäten führen können.

Chemikalienresistenz Übersicht

Legende s.S. 87

Chemikalie	LDPE	HDPE	PP	PTFE	TPX	Glas
1,2 Dichlorethan	NN	NN	NN	EE	NN	EE
1,2,4-Trichlorbenzol	NN	NN	NN	EE	GF	EE
1,4-Dioxan	GF	GG	GF	EE	GF	EE
2,2,4-Trimethylpentan	FN	FN	FN	EE	FN	EE
2,4 Dichlorphenol	NN	NN	NN	EE	FN	EE
2-Butanol	EE	EE	EE	EE	EG	EE
2-Methoxyethanol	EG	EE	EE	EE	EE	EE
2-Propanol	EE	EE	EE	EE	EE	EE
Acetaldehyd	GN	GF	GN	EE	GN	EE
Acetamid, gesättigt	EE	EE	EE	EE	EE	EE
Essigsäure, 5%	EE	EE	EE	EE	EE	EE
Essigsäure, 50%	EE	EE	EE	EE	EE	EE
Eisessig	EG	EE	EG	EE	EG	EE
Essigsäureanhydrid	NN	FF	GF	EE	EG	EE
Aceton	NN	NN	EG	EE	EE	EE
Acetonitril	EE	EE	FN	EE	FN	EE
Acetophenon	NN	FF	FF	EE	GN	EE
Acrylonitril	EE	EE	FN	EE	FN	EE
Adipinsäure	EG	EE	EE	EE	EE	EE
Allylalkohol	EE	EE	EE	EE	EG	EE
Aluminiumhydroxid	EG	EE	EG	EE	EG	SS
Aminosäuren	EE	EE	EE	EE	EE	EE
Ammoniak	EE	EE	EE	EE	EE	SS
Ammoniak, 25%	EE	EE	EE	EE	EE	SS
Ammoniumglykolat	EG	EE	EG	EE	EG	EE
Ammoniumhydroxid, 30%	EG	EE	EG	EE	EG	SS
Ammoniumhydroxid, 5%	EE	EE	EE	EE	EE	SS
Ammoniumoxalat	EG	EE	EG	EE	EG	EE
Ammoniumsalze	EE	EE	EE	EE	EE	EE
Amylalkohol	EE	EE	EE	EE	EE	EE
Amylchlorid	NN	FN	NN	EE	NN	EE
Anilin	EG	EG	GF	EE	GF	EE
Königswasser	NN	NN	NN	EE	NN	SS
Arsensäure	GF	EG	EE	EE	EE	EE
Benzaldehyd	EG	GN	EG	EE	EG	EE
Benzamin	EG	EG	GF	EE	GF	EE
Benzol	NN	NN	NN	EE	GF	EE
Benzolsäure, gesättigt	EE	EE	EG	EE	EG	EE
Benzylacetat	EG	EE	EG	EE	EG	EE
Benzylalkohol	NN	FN	NN	EE	NN	EE
Borsäure	EE	EE	EE	EE	EE	EE
Brom	NN	FN	NN	EE	NN	EE
Brombenzol	NN	NN	NN	EE	NN	EE
Bromoform	NN	NN	NN	EE	NN	EE
Butadien	NN	FN	NN	EE	NN	EE
Butylacetat	NN	FF	FF	EE	GF	EE
Butylchlorid	NN	NN	NN	EE	FN	EE
Buttersäure	NN	FN	NN	EE	NN	EE
Calciumhydroxid	EE	EE	EE	EE	EE	SS
Calciumhypochlorit	EE	EE	EE	EE	EG	EE
Carbazol	EE	EE	EE	EE	EE	EE
Schwefelkohlenstoff	NN	NN	NN	EE	NN	EE
Karbontetrachlorid	FN	GF	GF	EE	NN	EE
Cellosolvacetat	EG	EE	EG	EE	EG	EE
Chlorwasser	GN	GF	FN	EE	GF	EE
Chlor, 10% (wasserhaltig)	GN	GF	FN	EE	GN	EE
Chlor, 10% in Luft	GN	EF	GN	EE	GN	EE
Chlorgas (wasserhaltig)	GN	GF	FN	EE	GN	EE

Chemikalie	LDPE	HDPE	PP	PTFE	TPX	Glas
Chloressigsäure	EE	EE	EG	EE	EG	EE
Chlorbenzol	NN	NN	NN	EE	FN	EE
Chloroform	FN	FN	NN	EE	NN	EE
Chromsäure, 10%	EE	EE	EE	EE	EE	EE
Chromsäure, 20%	EE	EE	GG	EE	EE	EE
Chromsäure, 50%	EE	EE	GF	EE	GF	EE
Mischung Chrom-/ Schwefelsäure, 96%	NN	NN	NN	EE	NN	EE
Zitronensäure, 10%	EE	EE	EE	EE	EE	EE
Kresol	NN	FN	GF	EE	NN	EE
Cyclohexan	FN	FN	FN	EE	NN	EE
Cyclohexanon	NN	FN	FN	EE	GF	EE
Cyclopentan	NN	FN	FN	EE	FN	EE
Decahydronaphtalin	GF	EG	GF	EE	FN	EE
Diaceton	NN	NN	GF	EE	FF	EE
Diacetonalkohol	FN	EE	EF	EE	EE	EE
Dibutylphthalat	--	-N	NN	EE	GG	EE
Diethylbenzol	NN	FN	NN	EE	NN	EE
Diethylether	NN	FN	NN	EE	NN	EE
Diethylketon	NN	NN	GG	EE	GF	EE
Diethylmalonat	EE	EE	EE	EE	EG	EE
Diethylamin	NN	FN	GN	EE	FF	EE
Diethylendioxid	GF	GG	GF	EE	FN	EE
Diethylenglykol	EE	EE	EE	EE	EE	EE
Diethylenglykolethylether	EE	EE	EE	EE	EE	EE
Dimethylacetamid	FN	EE	EE	EE	FG	EE
Dimethylformamid	EE	EE	EE	EE	EE	EE
Dimethylsulphoxid (DMSO)	EE	EE	EE	EE	EE	EE
Dioxan	GF	GG	GF	EE	FN	EE
Dipropylenglykol	EE	EE	EE	EE	EE	EE
Ethanol, 40%	EG	EE	EG	EE	EG	EE
Äther	NN	FN	NN	EE	NN	EE
Ethylacetat	EE	EE	EG	EE	FN	EE
Ethylalkohol (absolut)	EG	EE	EG	EE	EG	EE
Ethylalkohol, 40%	EG	EE	EE	EE	EG	EE
Ethylalkohol, 96%	EG	EG	EE	EE	EG	EE
Ethylbenzol	NN	NN	NN	EE	NN	EE
Ethylbenzoat	FF	GG	GF	EE	GF	EE
Ethylbutyrat	GN	GF	GN	EE	FN	EE
Ethylchlorid	FN	FF	FN	EE	FN	EE
Ethylchlorid, flüssig	FN	FF	FN	EE	FN	EE
Ethylcyanoacetat	EE	EE	EE	EE	EE	EE
Ethyllactat	EE	EE	EE	EE	EE	EE
Ethylenchlorid	GN	GF	FN	EE	NN	EE
Ethylenglykol	EE	EE	EE	EE	EE	EE
Ethylenglykol-monomethylether	EE	EE	EE	EE	EE	EE
Ethylenoxid Gas	FF	GF	FF	EE	FN	EE
Ethylenoxid, 100%	FF	GF	FF	EE	FN	EE
Fettsäuren	EG	EE	EG	EE	EG	EE
Fluor	FN	GN	FN	EG	FN	EE
Formaldehyd, 10%	EE	EE	EE	EE	EG	EE
Formaldehyd, 40%	EG	EE	EG	EE	EG	EE
Formalin, 10%	EE	EE	EE	EE	EG	EE
Formalin, 40%	EG	EE	EG	EE	EG	EE
Ameisensäure	EG	EE	EG	EE	EF	EE
Ameisensäure, 100%	EG	EE	EG	EE	EF	EE
Ameisensäure, 3%	EG	EE	EG	EE	EG	EE

Chemikalie	LDPE	HDPE	PP	PTFE	TPX	Glas
Ameisensäure, 50%	EG	EE	EG	EE	EG	EE
Ameisensäure, 85%	EE	EE	EG	EE	EF	EE
Freon TF	EG	EG	EG	EE	FN	EE
Glutaraldehyd	EG	EE	EE	EE	FF	EE
Glycerin (Glycerol)	EE	EE	EE	EE	EE	EE
Hexan	NN	GF	GF	EE	FN	EE
Hydrazin	NN	NN	NN	EE	NN	EE
Bromwasserstoffsäure, 4%	EG	EE	EG	EE	EG	EE
Bromwasserstoffsäure, 48%	EE	EE	EE	EE	EE	EE
Bromwasserstoffsäure, 69%	--	-N	EG	EE	EE	EE
Salzsäure, 20%	EE	EE	EE	EE	EG	EE
Salzsäure, 35%	EE	EE	EG	EE	EG	EE
Salzsäure, 5%	EE	EE	EE	EE	EG	EE
Wasserstoffperoxid, 3%	EE	EE	EE	EE	EE	EE
Wasserstoffperoxid, 30%	EG	EE	EG	EE	EG	EE
Wasserstoffperoxid, 90%	EG	EE	EG	EE	EG	EE
Isobutanol	EE	EE	EE	EE	EG	EE
Isopropanol, 100%	EE	EE	EE	EE	EE	EE
Isopropylacetat	GF	EG	GF	EE	GF	EE
Isopropylbenzol	FN	GF	FN	EE	NN	EE
Isopropylether	NN	NN	NN	EE	EE	EE
Milchsäure, 3%	EG	EE	EG	EE	EG	EE
Milchsäure, 85%	EG	EE	EG	EE	EG	EE
Jodkristalle	NN	NN	FN	EE	GN	EE
Quecksilber	EE	EE	EE	EE	EE	EE
Methanol, 100%	EE	EE	EE	EE	EE	EE
Methoxyethyloleat	EG	EE	EG	EE	EG	EE
Methylacetat	FN	FF	GF	EE	EE	EE
Methylethylketon	NN	NN	EG	EE	NN	EE
Methylisobutylketon (MIBK)	NN	NN	GF	EE	FF	EE
Methylpropylketon	GF	EG	GF	EE	FF	EE
Methylenchlorid	FN	FN	FN	EE	FN	EE
Methyl-t-Butylether	NN	FN	FN	EE	EE	EE
n-Amylacetat	GF	EG	GF	EE	GF	EE
n-Butanol	EE	EE	EE	EE	EG	EE
n-Butylacetat	GF	EG	GF	EE	GF	EE
n-Decan	FN	FN	FN	EE	FN	EE
n-Heptan	FN	GF	FF	EE	FF	EE
Salpetersäure, 10%	EE	EE	EE	EE	EE	EE
Salpetersäure, 20%	EG	GF	FF	EE	GF	EE
Salpetersäure 50%	GN	GN	FN	EE	FN	EE
Salpetersäure, 70%	FN	GN	NN	EE	FN	EE
Nitrobenzol	NN	FN	NN	EE	NN	EE
Nitromethan	NN	FN	FN	EE	EF	EE
n-Oktan	EE	EE	EE	EE	EE	EE
o-Dichlorbenzol	FN	FF	FN	EE	FN	EE
Mineralöl	GN	EE	EE	EE	EG	EE
Oxalsäure, 10%	EE	EE	EE	EE	EE	EE
Ozon	EG	EE	EG	EE	EE	EE
p-Chloracetophenon	EE	EE	EE	EE	EE	EE
p-Dichlorbenzol	FN	GF	GF	EE	GF	EE
Perchlorsäure	GN	GN	GN	GF	GN	EE
Perchlorsäure , 70%	GN	GN	GN	GF	GN	EE
Perchlorethylen	NN	NN	NN	EE	NN	EE
Phenol, 100%	NN	NN	NN	EE	NN	EE
Phenol, 50%	NN	NN	NN	EE	NN	EE
Phenol, kristallin	GN	GF	GN	EE	FG	EE
Phenol, flüssig	NN	NN	NN	EE	NN	EE

Chemikalie	LDPE	HDPE	PP	PTFE	TPX	Glas
Phosphorsäure, 5%	EE	EE	EE	EE	EE	EE
Phosphorsäure, 85%	EE	EE	EG	EE	EG	EE
Pikrinsäure	NN	NN	NN	EE	EE	EE
Kaliumhydroxid, 1%	EE	EE	EE	EE	EE	SS
Kaliumhydroxid, 30%	EE	EE	EE	EE	EE	SS
Kaliumhydroxid, konzentriert	EE	EE	EE	EE	EE	SS
Kaliumpermanganat	EE	EE	EE	EE	EE	EE
Propangas	NN	FN	NN	EE	NN	EE
Proprionsäure	FN	EF	EG	EE	EF	EE
Propylenglykol	EE	EE	EE	EE	EE	EE
Propylenoxid	EG	EE	EG	EE	EG	EE
Pyridin	NN	NN	NN	EE	NN	EE
Resorcin, 5%	EE	EE	EE	EE	EE	EE
Resorcin, gesättigt	EE	EE	EE	EE	EE	EE
Salicylaldehyd	EG	EE	EG	EE	EG	EE
Salicylsäure, gesättigt	EE	EE	EE	EE	EE	EE
Metallsalzlösungen	EE	EE	EE	EE	EE	SS
Siliconöl	EG	EE	EE	EE	EE	EE
Silbernitrat	EG	EE	EG	EE	EE	EE
Natriumdichromat	EE	EE	EE	EE	EE	EE
Natriumhydroxid, 50%	GG	GF	EE	EE	EE	SS
Natriumhydroxid, 1%	EE	GF	EE	EE	EE	SS
Natriumhydroxid, 10%	EE	GF	EE	EE	EE	SS
Natriumhypochlorit, 15%	EE	EE	GF	EE	EE	EE
Stearinsäure	EE	EE	EE	EE	EE	EE
Schwefeldioxid	NN	FN	NN	EE	NN	EE
Schwefeldioxid, trocken oder wasserhaltig	EE	EE	EE	EE	EE	EE
Schwefelsalze	FN	GF	FN	EE	FN	EE
Schwefelsäure, (96%)	GG	GG	FN	EE	GG	EE
Schwefelsäure, 20%	EE	EE	EG	EE	EG	EE
Schwefelsäure, 30%	EE	EE	GG	EE	EG	EE
Schwefelsäure, 6%	EE	EE	EE	EE	EE	EE
Schwefelsäure, 60%	EG	EE	EG	EE	EG	EE
Schwefelsäure, 98%	GG	GG	FN	EE	GG	EE
Weinsäure	EE	EE	EE	EE	EE	EE
Tetrahydrofuran	FN	GF	GF	EE	FF	EE
Thionylchlorid	NN	NN	NN	EE	NN	EE
Jodtinktur	EG	EG	GG	EE	NN	EE
Toluol	FN	FN	FN	EE	FF	EE
Tributylcitrat	GF	EG	GF	EE	GF	EE
Trichloressigsäure (TCA)	FN	FF	FN	EE	EE	EE
Trichlorethan	NN	FN	NN	EG	NN	EE
Trichlorethylen	NN	FN	NN	EE	NN	EE
Triethylenglykol	EE	EE	EE	EE	EE	EE
Tripropylenglykol	EE	EE	EE	EE	EE	EE
Tris Pufferlösung	EG	EG	EG	EE	EG	EE
Harnstoff	EE	EE	EE	EE	EE	EE
Xylol	GN	GF	FN	EE	NN	EE

Legende

E – Keine Schädigung nach 30 Tagen konstanter Exposition
G – Geringe oder keine Schädigung nach 30 Tagen konstanter Exposition
F – Leichte Auswirkungen nach 7 Tagen konstanter Exposition
N – Es kann eine sofortige Schädigung auftreten.
Nicht für Daueranwendung empfohlen.

Der 1. Buchstabe eines jeden Buchstabenpaares gilt für die minimale Temperaturbedingung; der 2. Buchstabe eines jeden Bachstabenpaares gilt für die maximale Temperaturbedingung.

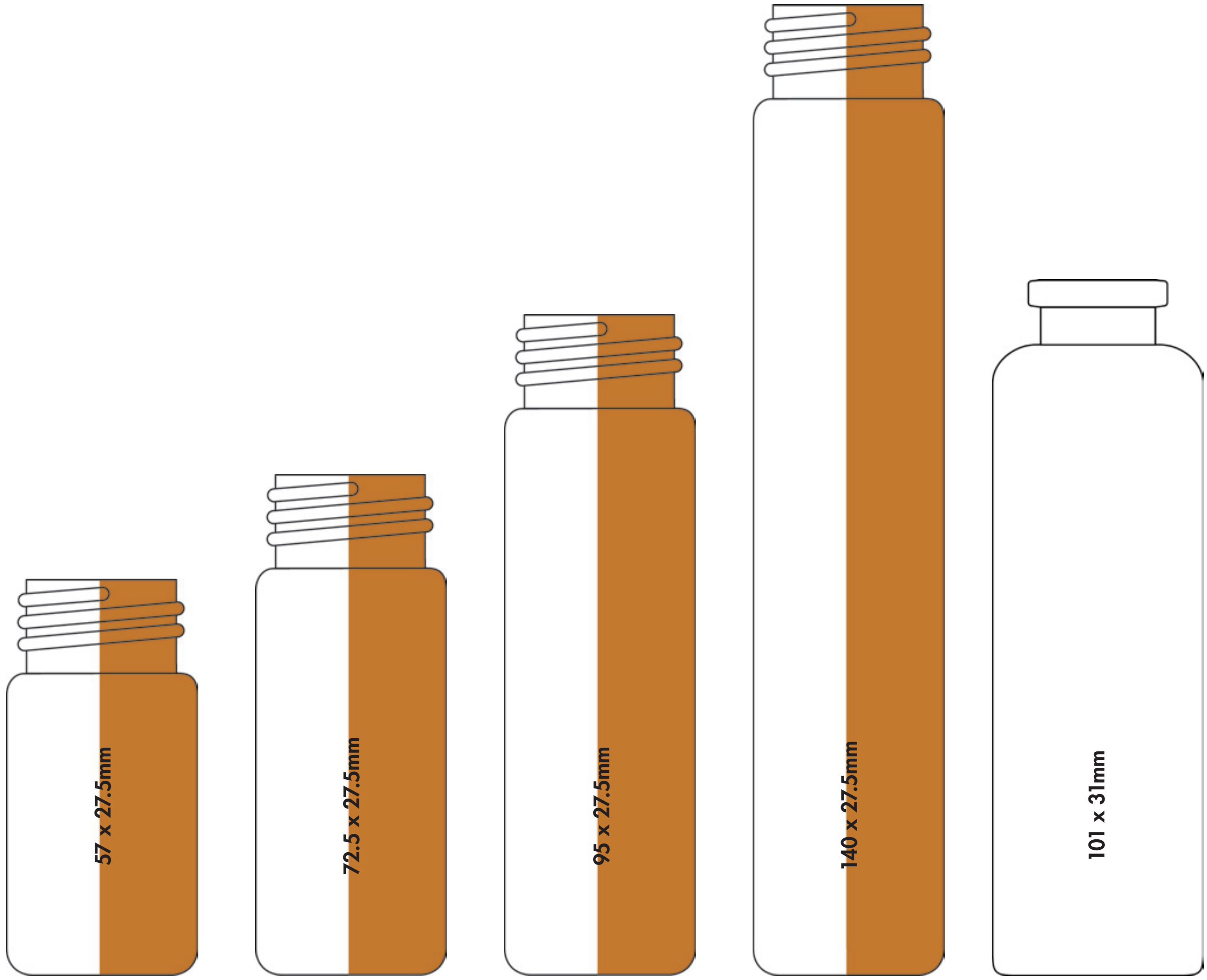
On our 6 pages pull-out sheet you will find on pages 89-92 actual size drawings of all standard glass articles and on pages 93-94 drawings of all cap types.

All drawings of the glass articles are marked with our article number and the chapter where you can find the respective product.

The drawings of the caps are not actual size. They should only visualize the special features of certain types of caps.

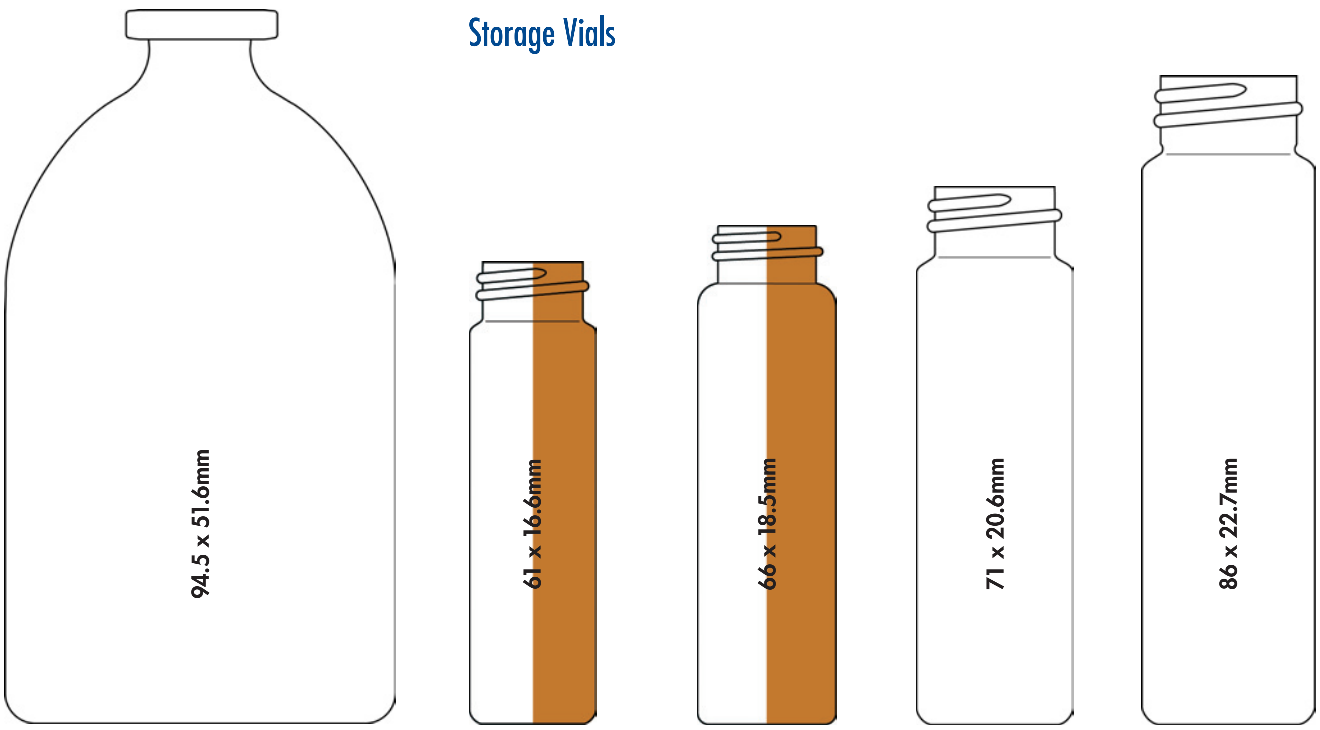
EPA-Vials ND24

Crimp Neck ND20



24 09 0589 24 09 0927	24 09 0839 24 09 0923	24 09 0402 24 09 0928	24 09 1089 24 09 1090	20 09 0289
12, 20	12, 20	12, 20	12, 20	10

Storage Vials



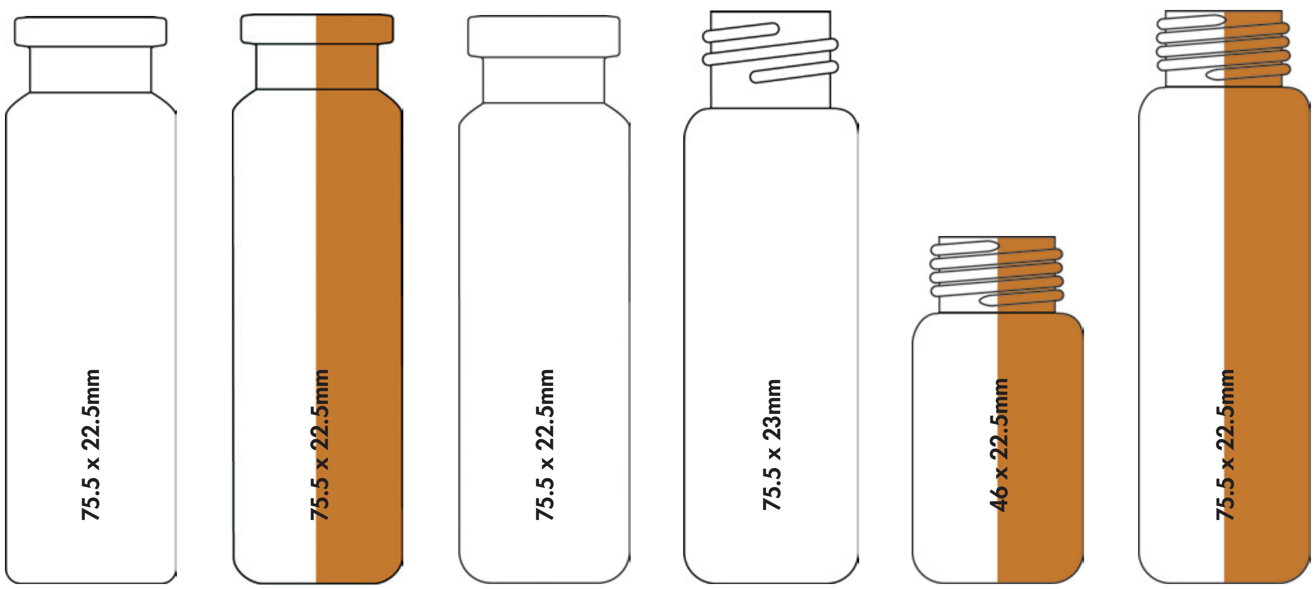
20 09 0343	15 09 1703 15 09 1774	15 09 1657 15 09 1800	18 09 1704	20 09 1705
10	20	20	20	20

Headspace ND20

20 09 0342	20 09 0801	20 09 0802	20 09 1405 20 09 1691	20 09 0795	20 09 0297 20 09 1223	20 09 0440
10	**10**	**10**	**10**	**10**	**10**	**10**

Headspace ND20

Headspace ND18

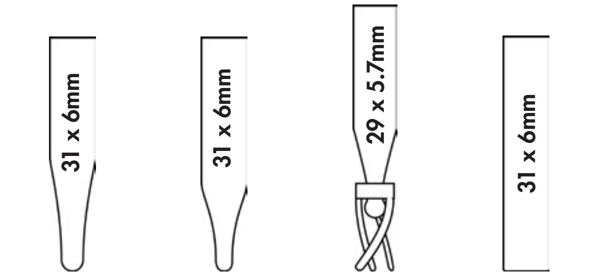


20 09 0796	20 09 0873 20 09 1690	20 09 1222	18 09 0864	18 09 1306 18 09 1310	18 09 1307 18 09 1311
10	**10**	**10**	**10**	**10**	**10**

Snap Cap Vials

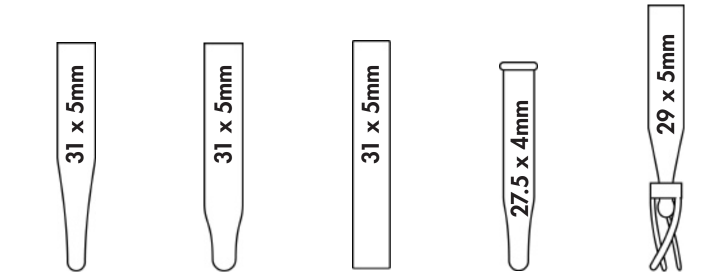
40 09 0678	18 09 0906	18 09 0907	20 09 0784	22 09 0908
21	**11**	**11**	**11**	**11**

Micro-Inserts for wide opening



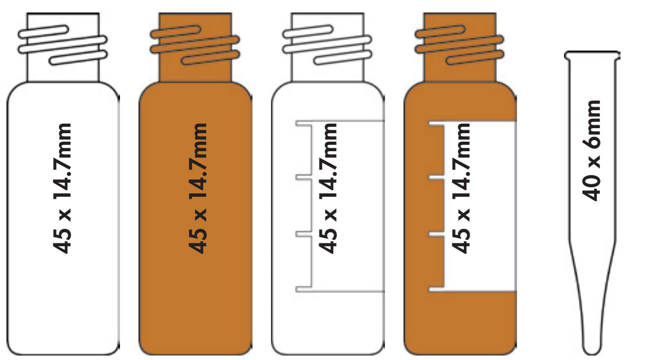
06 09 0357 06 09 1240	06 09 0669	06 09 0865 06 09 1343	06 09 0866
3,4,5,6,9	3,4,5,6,9	3,4,5,6	3,4,5,6,9

Micro-Inserts for small opening



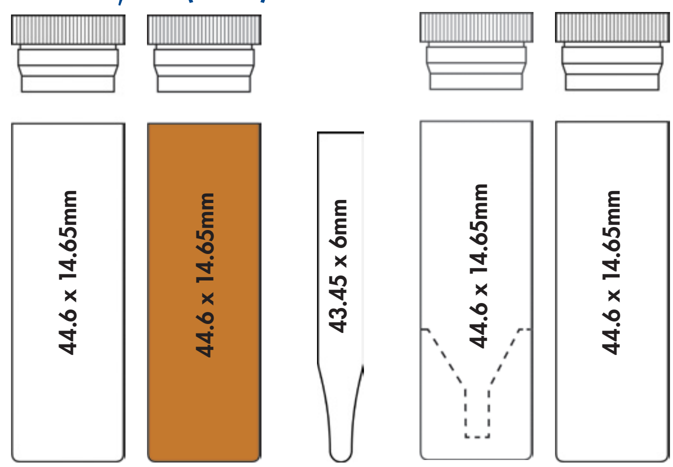
05 09 0129	05 09 0269	05 09 1674	05 09 0279	05 09 0968
2	2	2	2	2

Screw Neck ND13



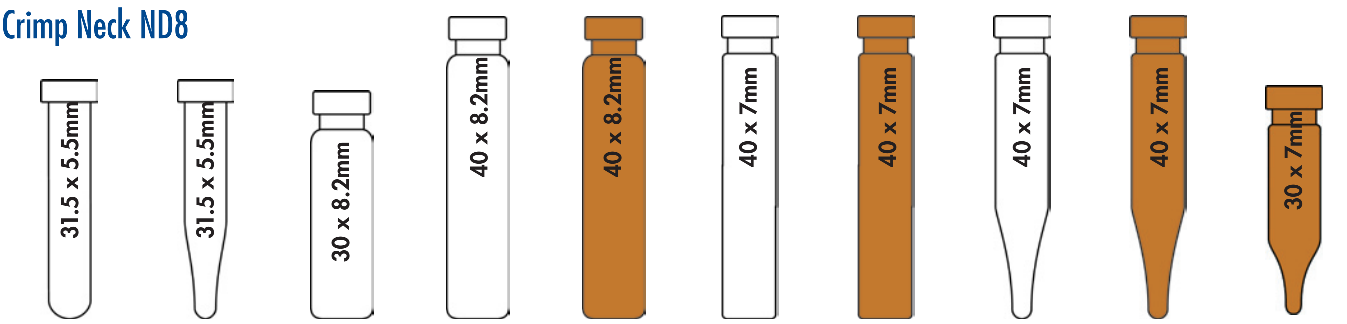
13 09 0222	13 09 0280	13 09 1335	13 09 1336	40 09 0146
8, 20	8, 20	8	8	8

Shell Vials, 4ml (Insert)



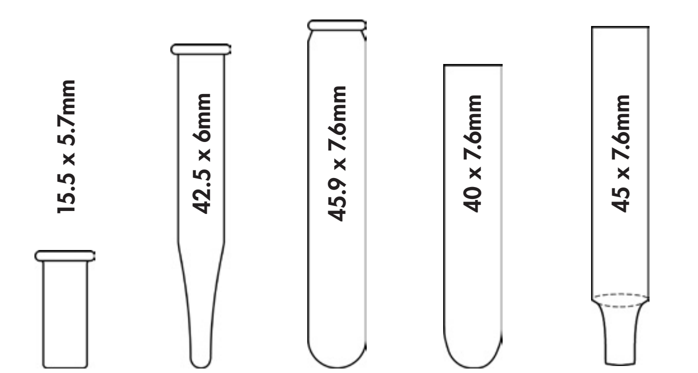
15 14 0548	15 14 0562	06 09 0651	15 34 2199	15 34 2197
9	9	9	9	9

Crimp Neck ND8



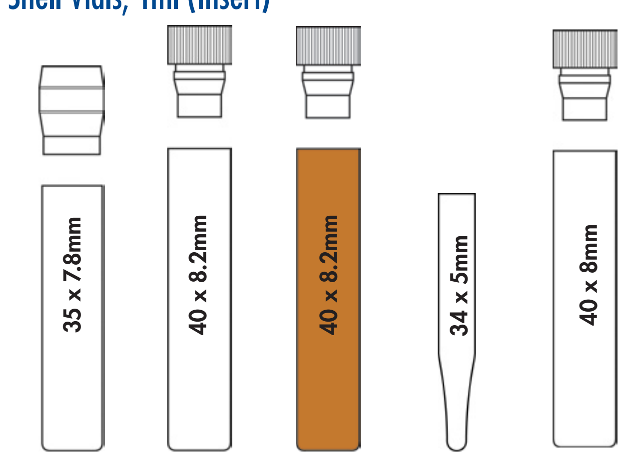
08 09 0276	08 09 0606	08 09 0284	08 09 0845	08 09 0953	08 09 0405	08 09 0406	08 09 0305	08 09 0258	08 09 1080
1	1	1	1	1	1	1	1	1	1

Inserts for 96 Position Block Systems (RITTER)



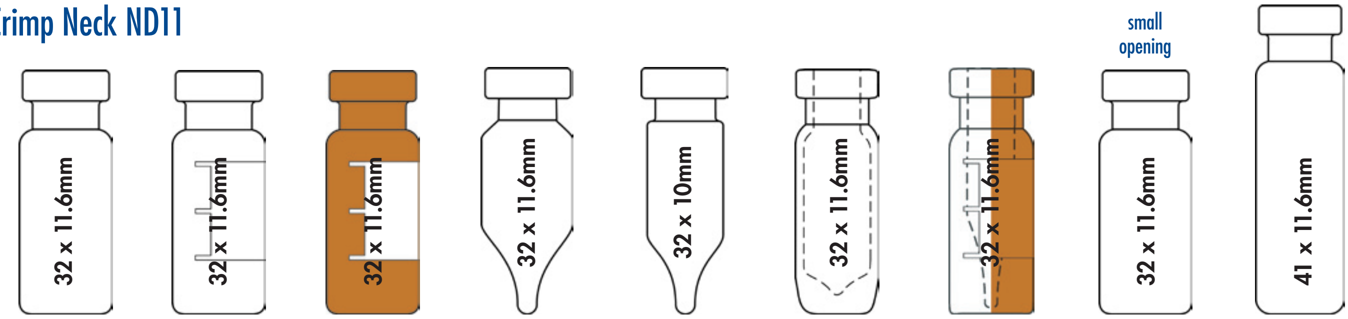
08 09 0875 (MT-Plate)	08 09 0888 (DW-Block)	08 09 0909 (SQW-Block)	08 09 0903 (MTRS)	08 09 1081 (SQW/Sealmat)
13	13	13	13	13

Shell Vials, 1ml (Insert)



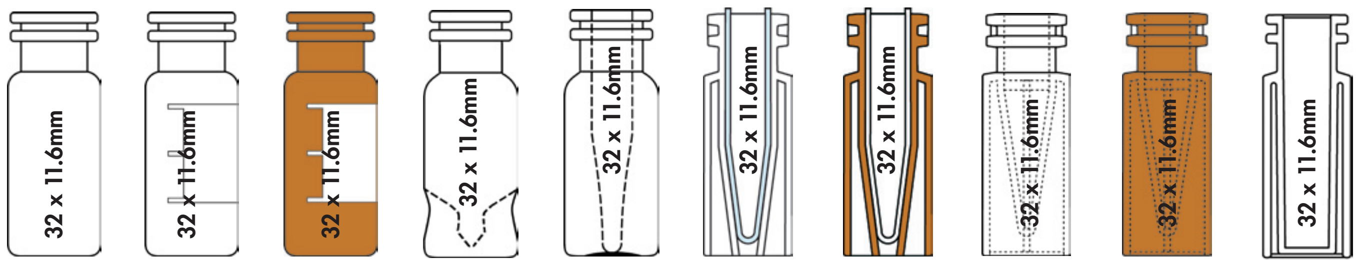
08 14 0641	08 14 1168 08 14 0513	08 14 1169 08 14 0595	05 09 0706	08 34 2194
9	9	9	9	9

Crimp Neck ND11



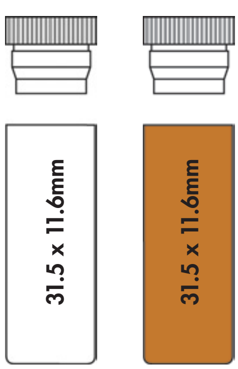
11 09 0356 11 09 2085	11 09 0476	11 09 0477 11 09 1767	11 09 0415	11 09 0486	11 09 0619 11 09 2177	11 09 0921 11 09 1956	11 09 0184	11 09 0831
5	5	5	5	5	5	5	5	21

Snap Ring ND11



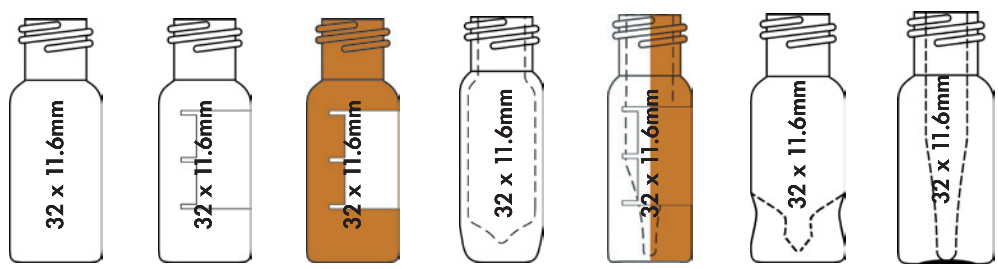
11 09 0627 11 09 2173	11 09 0644	11 09 0645 11 09 2189	11 09 2276	11 09 2353	11 14 1190 11 14 1266	11 14 1656 11 14 1695	11 19 0933 11 19 1022	11 19 1217	11 19 1707
6	6	6	6	6	5, 6	5, 6	7	7	7

Shell Vials, 2ml

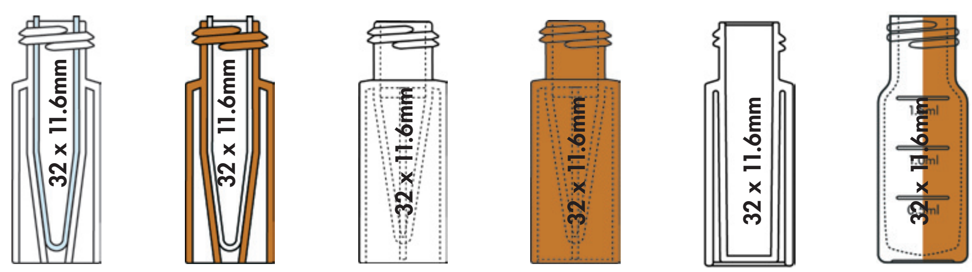


11 14 0544	11 14 0545
9	9

Short Thread ND9



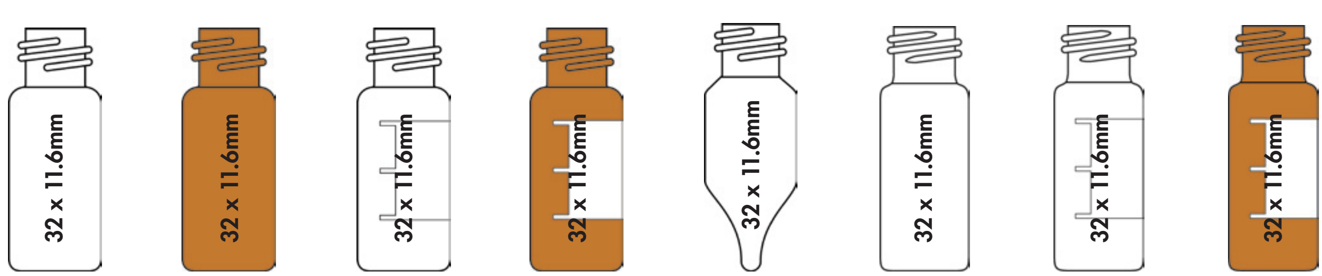
11 09 0500 11 09 1241	11 09 0519	11 09 0520 11 09 1242	11 09 0620	11 09 0999 11 09 1957	11 09 2275	11 09 2357
3	3	3	3	3	3	3



11 14 1189 11 14 1265	11 14 1655 11 14 1694	11 19 0932 11 19 1021	11 19 1216	11 19 1706	11 19 1205 11 19 1516
3	3	3, 7	3, 7	3, 7	3, 7

Screw Neck ND8, small opening

Screw Neck ND10, wide opening

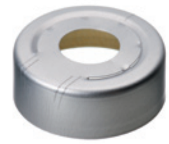


11 09 0210 11 09 2175	11 09 0259	11 09 0419	11 09 0382 11 09 2190	11 09 0417	10 09 0743	10 09 1196	10 09 1197
2, 20	2, 20	2	2	2	4	4	4

Aluminum Crimp Caps, centre hole

				
Size	**8mm**	**11mm**	**13mm**	**20mm**
Size centre hole Material Lacquer	4mm centre hole Aluminum clear	5.5mm centre hole Aluminum clear, red, blue, green, gold	6mm centre hole Aluminum clear, red, blue, green, gold	10mm centre hole Aluminum plain, red, blue, green, gold

Special Aluminum Crimp Caps

						
Size	**11mm**	**13mm**	**13mm**	**20mm**	**20mm**	**20mm**
Type of Cap Material Lacquer	Centre hole Cap Aluminum clear	Centre Tear Off Cap Aluminum clear, red, blue, green, gold	Complete Tear Off Cap Aluminum clear, red, blue, green, gold	Centre Tear Off Cap Aluminum clear, red, blue, green, gold	Complete Tear Off Cap Aluminum clear, red, blue, green, gold	Headspace Cap* Aluminum clear
Special features	with roll grove					

Headspace Cap:* This cap has the function of a pressure release cap and is designed with special scorelines whose bridges break open at an internal vial pressure of 3.0 ± 0.5 bar to let the excess pressure escape. It is comparable with the three component PerkinElmer Headspace Closure (Aluminum Crimp Cap with slits, metal star washer, liner with ears) which offers the same effect with a different technical design.

Magnetic Caps, centre hole

							
Size	**9mm Screw Cap**	**11mm Crimp Cap**	**20mm Crimp Cap**	**20mm Crimp Cap**	**20mm Bimetal Crimp Cap**	**18mm Screw Cap**	**18mm Screw Cap**
Size centre hole Application Material Lacquer	6mm centre hole (GC) PP Screw Cap blue/ magn. overcap gold GC PAL Thermo Scientific TriPlus	5mm centre hole (GC) magnetic gold GC PAL, Thermo Scientific TriPlus	5mm centre hole (HS) magnetic gold CE HS250/500/HS800, CTC 500 Fisons HS250/500/ HS800	8mm centre hole (HS) magnetic gold CTC Combi PAL	8mm centre hole (HS) Alu/magnetic red CTC Combi PAL	8mm centre hole (Universal) (Headspace/SPME) magnetic silver CTC Combi PAL PerkinElmer Agilent G1888A	closed top Universal Screw Cap silver

PE-Caps for Crimp Necks

							
Size	**8mm**	**9mm**	**9mm**	**11mm**	**13mm**	**22mm**	**22mm**
Approp. Vial	For Crimp Neck ND8	For 96 Block Inserts	For Crimp Neck ND8	For Crimp Neck and Snap Ring ND11	For Crimp Neck ND11	For HS Neck ND20	For Crimp Neck ND20
Size Cap Size centre hole	8mm with thinned penetration point	9 x 5.9mm 4mm centre hole	9 x 5.9mm 4mm centre hole	11mm with thinned penetration point	13 x 7.5mm 4.5mm centre hole	22 x 8.4mm 4.3mm centre hole	22 x 9.1mm 4.3mm centre hole or 6mm centre hole
Material, colour	PE, blue	PE, red	PE, transparent	PE, blue	PE, transparent	PE, transparent only for bevelled tops	PE, transparent only for flat DIN Crimp Necks!

Screw Caps

								
Size	**8mm**	**9mm**	**10mm**	**13mm**	**15mm**	**18mm**	**20mm**	**24mm**
Approp. Vial Thread Cap Design Size centre hole Material, colour	Screw Neck Vials ND8 8-425 thread, closed or open top 5.5mm centre hole PP, black or white, pink	Short Thread Vials ND9 Short thread, closed or open top 6mm centre hole PP, black, transparent, blue, red, yellow, green, pink	Screw Neck Vials ND10 10-425 thread, closed or open top 7mm centre hole PP, black	Screw Neck Vials ND13 13-425 thread, closed or open top 8.5mm centre hole PP, black, white	Screw Neck Vials ND15 15-425 thread, closed or open top, 9mm centre hole PP, black	Screw Neck Vials ND18 18-400 thread, closed or open top 12mm centre hole PP, black	Screw Neck Vials ND20 20-400 thread, closed top, PP, white	Screw Neck Vials ND24 24-400 thread, closed or open top 12.5mm centre hole PP, white

PE-Plugs for Shell Vials

						
Size	**8mm**	**8mm**	**8mm**	**8mm**	**12mm**	**15mm**
Vial/Plug combination Plug Size Material, colour Special Features	Plug of 08 14 0641 6mm PE, transparent	Plug of 08 14 0904 8mm PE, blue	Plug of 08 14 0513 or 08 14 0595 8mm PE, transparent with insertion barrier for Micro-Inserts	Plug of 08 14 1168 or 08 14 1169 8mm PE, transparent without insertion barrier for Micro-Inserts	Plug of 11 14 0544 or 11 14 0545 12mm PE, transparent	Plug of 15 14 0548 or 15 14 0562 15mm PE, transparent

Snap Ring Caps

	
Size	**11mm**
Approp. Vial Cap Design Size Material Colour	Snap Ring Vials ND11 open top 6mm centre hole PE transparent*, blue*, red, yellow, green, pink

Snap Caps

			
Size	**18mm**	**22mm**	**28mm**
Approp. Vial Cap Design Size Cap Material Colour	Snap Cap Vials ND18 closed top 19.8 x 5.2mm PE transparent	Snap Cap Vials ND22 closed top 23.5 x 5.5mm PE transparent	Snap Cap Vials ND28 closed top 29.7 x 5.6mm PE transparent

* available as a hard or soft PE Caps
Hard Cap: tighter, but not so easy to push on or to remove
Soft Cap: convenient in handling, but not as tight

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La-Pha-Pack GmbH
Am Parir 20 • 52379 Langerwehe • Germany
Tel.: +49 (0) 24 23 / 94 31-0
Fax: +49 (0) 24 23 / 94 31-33
Internet: www.la-pha-pack.com
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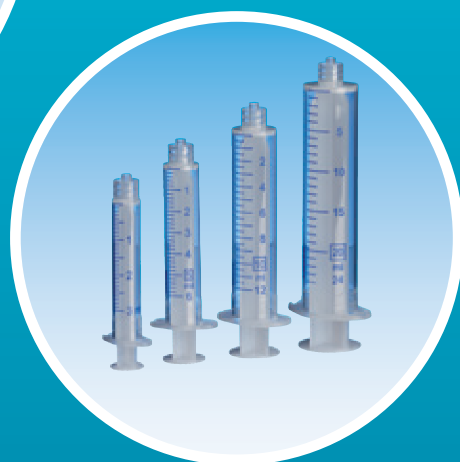

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