



La-Pha-Pack
OEM Solutions for Chromatography



**Your reliable partner
for Chromatography Consumables**

Thermo
SCIENTIFIC

Innovations



**1.5ml Short Thread SureStop™ Vials ND9
with sure Screw-Stop-Function**
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LC/MS and GC/MS Certified Vial Kits
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**Standard, Certified and High Performance 96
and 384 Position Block Systems**
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**9mm Short Thread Cap (Phthalate Free Seal)
with assembled aluminum liner**
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20mm Ultra High Temperature (UHT) closure
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11mm Pneumatic Airgo Crimper
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Electronic Crimpers and Decappers
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Programmable Electronic High Power Crimp Station
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Preface

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 9. On the following pages you will find some recommendations, how to use the 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 distributors 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



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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 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 distributors 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% higher or lower than the original quantity.

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
	<small>(for Connectors for 2 columns)</small>
	1 piece
	<small>(for Connectors for 3 columns)</small>
Crimpers/Decappers:	1 piece
2in1 KITS:	10 pieces
Vial Racks/Storage Boxes:	1 piece
Storage Boxes (16 cavities):	5 pieces per colour

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.

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.
 - 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 9 on pages 40 and 41. 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 on page 41 20mm septa for crimp caps- and 17.5mm septa for magnetic Precision Thread Caps- photographs and article descriptions.
- 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 74 and 75 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 72 to 73 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 kinds of listings (Product Names, Alphabetical Index, Numerical Index, Annex of Numerical Index, 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 9 on pages 40 and 41.
- 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 digit article number comprises the following indications:



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 devote 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 chromatography vials are packed in cleanrooms. 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 in 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.

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% 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.

Production

Glass Production



- 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.
- Besides this 100% control, manual in-process controls and a final inspection according to DIN/ISO standards assure further product safety.
- Packaging of the vials in a cleanroom provides a high standard of cleanliness for chromatography which ensures a correct and reliable analysis.

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.

High Performance Slitting Automate



- Fully automatic slitting process with high productivity
- High performance slitting automate guarantees excellent and continuous quality of positioning the slit as well as size accuracy
- Gentle slitting process for the liner
- Opto-electronic monitoring of the complete process, automatic selection of defective parts
- Variability of the slitting geometry – different forms of slitting and diameter possible

Lining/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.).

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.

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.

Innovation

La-Pha-Pack develops 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

1.5ml Short Thread SureStop™ Vials ND9 with sure Screw-Stop-Function



SureStop™ vials, are designed with an additional overwind-barrier and remove any subjectivity around achieving the optimal seal compression when closing a vial. As an integral component of technology SureStop™ vials offer the sealing and performance characteristics of a crimp top vial and the versatility and convenience of a threaded vial. This is achieved by incorporating a definite stop point into the design of the vial finish, preventing overtightening of the closure. SureStop™ vials remove all doubt about the degree of tightening necessary for optimal sealing.

- Provide a consistent seal independent of user or the amount of torque applied when closing the vial.
- Provide optimal septum compression across the opening of the vial.
- Design allows the positioning of the closure to be consistently "flat," producing a more cylindrical vial profile, which improves autosampler recognition and compatibility.
- Vial designed for use with nearly every autosampler on the market.
- When compared to other 1.5ml/2ml vials, SureStop yields the lowest loss to evaporation and the lowest standard deviation in evaporation studies.

Standard, Certified and High Performance 96 and 384 Position Block Systems



The La-Pha-Pack WebSeal™ system presents a new range of well plates which meet the requirements of today's chromatographer using well plate compatible autosamplers. It provides all of the advantages of sample handling using plates, the security of achieving reliable results along with decades of experience from the market leader in sample containers for chromatography.

- The first complete and chromatography tested portfolio of well plates for separations science applications.
- Prepare and analyze samples in less time with less lab bench space and storage space required per sample.
- Easier and quicker filling and sealing process using multi-channel pipetting tools.
- Efficient transport of many samples in a single plate.
- SBS/ANSI standard footprint assures compatibility with all well plate capable prep stations and chromatography autosamplers.

cooperation with instrument manufacturers. The most important product launches of this catalogue are shown below along with some short product profiles.

LC/MS and GC/MS Certified KITS



Certifications are getting more and more important, in order to make processes more reproducible and avoid possible sources of errors from the beginning. The LC/MS and GC/MS Certified KITS represent our premium range of certified products. Each lot of the vial/closure combination has been tested by LC/MS and GC/MS on traces of blank values and contaminations.

- Available as clear and amber 9mm Short Thread Vial in the SureStop version with the sure-stop function for the lowest evaporation rate of all autosampler vials. Additionally the glass surface provides very low adsorption tendencies for all types of polar compounds; in fact a lot lower as for all other vials of 1st hydrolytic class glass (without surface treatment).
- The closure contains a very soft ultra low bleed silicone septum with PTFE layer, optimized for ultra trace analysis.
- The batch-specific test certificate with the MS-Chromatograms can be handed out on request.
- The LC/MS and GC/MS certified KITS are delivered completely shrink wrapped in order to assure originality, purity and transport safety.
- Upon request further LC/MS and GC/MS Certified Vial KITS will be available.

20mm Ultra High Temperature (UHT) Closure



Extended temperature range products for high-temperature headspace applications.

- High temperature Headspace closures as Crimp and Precision Thread version available .
- Operation up to 300°C possible.
- High temperature, high quality Silicone/PTFE septum for less extractables at low to mid-high temperatures.
- Low bleeding level at high temperatures (>120°C).

9mm Short Thread Cap (Phthalate Free Seal) with assembled aluminum liner



La-Pha-Pack offer the first 9mm Short Thread 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.

Application areas:

- Analytic of elastomers und plastomers.
- Phthalate analysis.
- Analytic of polymerisation catalysts.
- Analytic of silicones und silicates.
- Analytic of fluorinated, halogenated organic compounds

Electronic Crimpers and Decappers



- Electronic Crimpers and Decappers provide secure, reproducible crimps and quick and easy removal of aluminum seals with the push of a button.
- Ergonomic design and push button operation eliminates wrist strain.
- Built in long life lithium ion rechargeable battery with low battery indicator.
- Universal 100V–240V charger includes plug adaptors for most power outlets.
- Crimpers and decappers can be operated while plugged in and recharging.
- Crimp force sensing assures consistent proper sealing.
- Vials can be crimped or decapped while they remain in most standard removable sample trays.
- Adjustable crimp settings for compatibility with most vial/septum/seal combinations.

Pneumatic Airgo Crimper



- Completely new designed ergonomic hand-held tool with easy push button for a completely joint-friendly work position.
- Unique ultra slim design of the crimping jaws is perfect for in-tray crimping of the vial.
- Slim jaw shape allows for the first time an optical control of the crimping process.
- Combines convenient large sample series processing with cleanroom usability.
- The weight of the new pneumatic hand-held tool generation is reduced by 50%.
- The optional balancer helps to save space on the lab bench and keeps the crimper clean and ready to use in reach.

Programmable Electronic High Power Crimp Station



- Fully programmable station with quick exchange crimping and decapping heads.
- High power, perfect for magnetic steel caps.
- Adjustable crimp settings for compatibility with most vial/septum/seal combinations including aluminum, steel and bi-metal seals.
- Exchangeable crimping and decapping heads can be removed or installed in seconds.
- For each head, a set of up to 10 adjustment programs is available and can be saved.
- A reliable crimp is guaranteed various closures, septa thickness and vials.
- Crimp-force sensing automatically determines when a proper seal has been formed and opens the jaws to release the vial.

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 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 now by three consecutive certification steps.



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 % 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 in the instrument, but also all components that might be connected to it, such as Micro-Inserts, Seals, etc. A correct and reproducible 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/MS-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.
- Upon request further HPLC and GC Certified Vial KITS will be available.



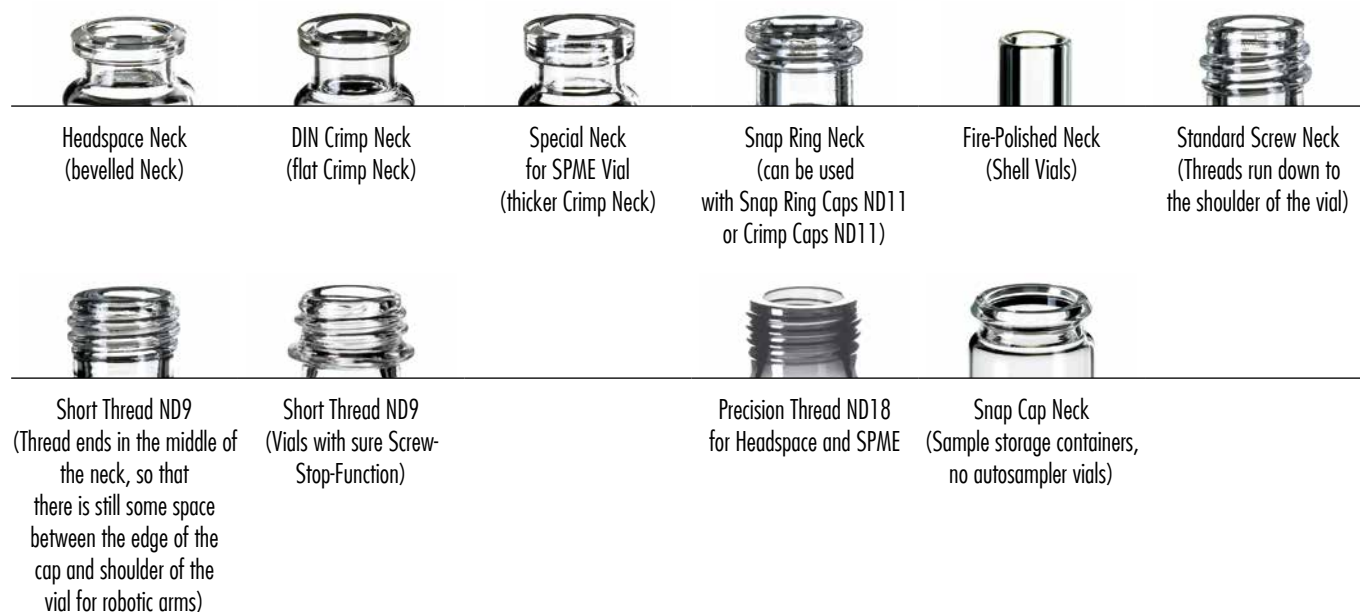
LC/MS and GC/MS Certified KITS

The LC/MS and GC/MS Certified KITS represent our premium range of certified products. Each lot of the vial/closure combination has been tested by LC/MS and GC/MS on traces of blank values and contaminations.

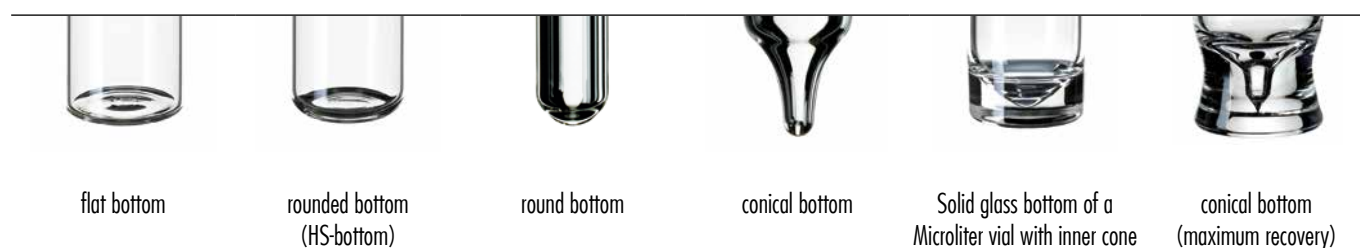
- Available as clear and amber 9mm Short Thread Vial in the SureStop version with the sure-stop function for the lowest evaporation rate of all autosampler vials.
- Additionally the glass surface of these specific SureStop vials provides very low adsorption tendencies for all types of polar compounds; in fact a lot lower as for all other vials of 1st hydrolytic class glass (without surface treatment).
- The closure contains a very soft ultra low bleed (Ultra High Performance) silicone septum with PTFE layer, optimized for ultra trace analysis.
- The batch-specific test certificate with the MS-Chromatograms can be handed out on request.
- The LC/MS and GC/MS certified KITS are delivered completely shrink wrapped in order to assure originality, purity and transport safety.
- Upon request further LC/MS and GC/MS 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



B) Design of the Bottom



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 manufactured 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 UltraBond Seals for Short Thread Vials.

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)



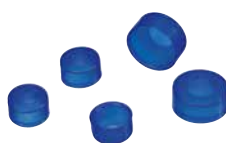
Various UltraBond Seals ND9 + ND24



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



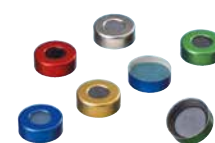
Snap Caps
(for sample storage containers)



PE Push-On Caps
ND8 + ND11



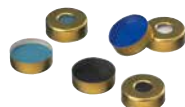
PE Caps
(for Crimp Necks ND8, ND11 + ND20)



Aluminum Caps,
centre hole



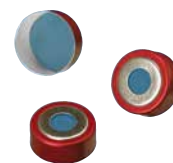
Magnetic Crimp Caps
(5mm centre hole)



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 groove

Septa

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? ↓ good resealability properties necessary ↓ Natural Rubber/TEF	Temperature? ↓ -40°C up to 120°C ↓ Natural Rubber/TEF; Butyl/PTFE	Temperature? ↓ -40°C up to 110°C ↓ RedRubber/PTFE	Temperature? ↓ -60°C up to 200°C ↓ Silicone/PTFE	Thin, fragile needle? ↓ soft and thin septa required ↓ e.g. Silicone/PTFE	Blunt, thick needle? ↓ Slitted/pre-cut liner as penetration aid (HPLC) ↓ e.g. 08 02 0039 (page 18-chapter 2.4)	Critical analysis? ↓ very clean liner required ↓ UltraClean Silicone/PTFE septa	Low coring? ↓ Both sided PTFE laminated liners required ↓ PTFE/Silicone/PTFE PTFE/Butyl/PTFE
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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



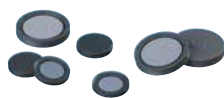
RedRubber/PTFE beige



Butyl



Butyl/PTFE



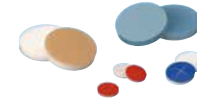
Pharma-Fix-Septa
(Butyl/PTFE)



Silicone/Aluminum foil



PTFE/Silicone/PTFE
PTFE/Butyl/PTFE



Silicone/PTFE



Pre-cut liners
Silicone/PTFE



Viton



PTFE



Aluminum



Septa for Schott
Screw Caps



PTFE/EPDM/PTFE



High Temperature Silicone/PTFE

1. Crimp Neck ND8

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:

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.

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



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, 1 st hydrol. class	0.7ml Crimp Neck Vial, 40 x 7mm, amber glass, 1 st hydrol. class	0.8ml Crimp Neck Vial, 30 x 8.2mm, clear glass, 1 st hydrol. class	1.2ml Crimp Neck Vial, 40 x 8.2mm, clear glass, 1 st hydrol. class	1.2ml Crimp Neck Vial, 40 x 8.2mm, amber glass, 1 st 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, 1 st hydrol. class, round bottom	0.2ml Micro-Vial, 31.5 x 5.5mm, clear glass, 1 st hydrol. class, conical	0.6ml Micro-Vial, 40 x 7mm, clear glass, 1 st hydrol. class, conical	0.6ml Micro-Vial, 40 x 7mm, amber glass, 1 st hydrol. class, conical	0.4ml Micro-Vial, 30 x 7mm, amber glass, 1 st 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				

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	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.



Art. No.	08 03 0268
Description Cap	Aluminum Cap, clear lacquered, 4mm centre hole
Septa Material	PTFE virginal
Durometer	53° shore D
Thickness	0.25mm
	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, 1 st hydrol. class, small opening	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1 st hydrol. class, small opening	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, small opening, label + filling lines	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1 st hydrol. class, small opening, label + filling lines	1.1ml Micro-Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, conical, small opening
	SILANIZED 11 09 2175			SILANIZED 11 09 2190	
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, 1 st hydrol. class, 15mm top	0.1ml Micro-Insert, 31 x 5mm, clear glass, 1 st hydrol. class, 9mm top	0.2ml Micro-Insert, 31 x 5mm, clear glass, 1 st hydrol. class, flat bottom	0.1ml Micro-Insert, 29 x 5mm, clear glass, 1 st hydrol. class, with assembled plastic spring	0.1ml Micro-Insert, 27.5 x 4mm, clear glass, 1 st hydrol. class	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

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

- Natural Rubber is ideal for multiple injections due to high resealability, but not as easy to penetrate as RR/PTFE.
- 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 same resealability as NR/TEF.
- Temperature resistant from -40°C up to 120°C for NR/TEF + Butyl/PTFE resp. up to 110°C for RR/PTFE.
- Butyl as a synthetic rubber has good chemical properties (cleanliness).



Art. No.	08 15 0460	08 15 1965	08 15 1637
Description Cap		Polypropylene Screw Cap black, 5.5mm centre hole, 8-425 thread	
Septa Material	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige	Butyl red/PTFE grey
Durometer	60° shore A	45° shore A	55° shore A
Thickness	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

- 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.
- Temperature resistant from -60°C up to 200°C.
- Silicone liners with PTFE on both sides for less coring.
- Much cleaner than Natural Rubber, RedRubber or Butyl.
- Different hardnesses (durometers) to meet requirements of the various types of needles regarding penetration.



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					

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				

Further 8mm screw caps with different colours are available upon request!

2.4 Septa 8mm

					
Art. No.	08 02 0177	08 02 0232	08 02 0355	08 02 1966	08 02 1633
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
Durometer	53° shore D	60° shore A	60° shore A	45° shore A	55° shore A
Thickness	0.25mm	1.0mm	1.3mm	1.0mm	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 0436	08 08 0435
Cap	Polypropylene Screw Cap, black, 5.5mm centre hole	Polypropylene Screw Cap, black, closed top	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 and/or pre-assembled Micro-Inserts for vials with small opening

- Pre-screwed vials and/or pre-assembled Micro-Inserts reduce the risk of contamination of vials in laboratories. Furthermore special applications could require (e.g. in the tobacco industry) a pre-screwed vial or pre-assembled inserts.

- Pre-screwed vials are available with any of the 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, 1 st hydrol. class, small opening (11 09 0210)	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, small opening (11 09 0210)	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1 st 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, slitted 45° shore A, 1.3mm, (08 15 1449)
100 pcs. per PP-Box			

Further pre-screwed and/or pre-assembled combinations upon request!

2.6 Screw Neck Vials ND8, small opening, 8-425 thread with pre-screwed PP Screw Seals ND8 and/or pre-assembled Micro-Inserts for vials with small opening (cont.)

Art. No.	11 14 1468	11 14 2319	11 14 1838
Description	1.5ml Screw Neck Vial, 8-425 thread; 32 x 11.6mm, clear glass, 1 st hydrol. class, small opening (11 09 0210)	1.5ml Screw Neck Vial, 8-425 thread, 32 x 11.6mm, amber glass, 1 st hydrolytic class, small opening (11 09 0259)	1.5ml Screw Neck Vial, 8-425 thread, 32 x 11.6mm, amber glass, 1 st hydrolytic class, small opening (11 09 0259)
	pre-screwed with	pre-screwed with	pre-screwed with
Seal	Polypropylene Screw Cap black, closed top, 8-425 thread; Silicone white/PTFE red, 45° shore A, 1.3mm (08 15 1040)	Polypropylene Screw Cap black, 5.5mm centre hole; 8-425 thread; Silicone white/PTFE red, 45° shore A, 1.3mm, (08 15 0293)	Polypropylene Screw Cap black, closed top, 8-425 thread; Silicone white/PTFE red, 45° shore A, 1.3mm (08 15 1040)
100 pcs. per PP-Box			

Further pre-screwed and/or pre-assembled combinations upon request!

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, 1 st 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, 1 st 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					

Further 3in1 KITS are available upon request!

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, 1 st 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, 1 st 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 2656
Description	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening SILANIZED 11 09 1241	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening, label + filling lines SILANIZED 11 09 2131	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st 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, 1 st hydrol. class, label + filling lines, "Top Bonded"	Short Thread Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, amber glass, 1 st hydrol. class, label + filling lines, "Top Bonded"	Short Thread Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1 st hydrol. class "Base Bonded"	Short Thread Vial with integrated Micro-Insert, 32 x 11.6mm, amber glass, 1 st hydrol. class "Base bonded"
TFVol. (ml)	1.85	1.85	1.85	0.34	0.34	0.4	0.4
UsVol. (ml)	1.5	1.5	1.5	0.2	0.2	0.3	0.3
MWVol. (µl)	200	200	200	25	25	30	30
Res. Vol. (µl)	<120	<120	<120	<1	<1	<3	<3

100 pcs. per PP-Box



Art. No.	11 09 0620	11 09 2275	11 14 1189	11 14 1655
Description	1.1ml Microliter Short Thread Vial ND9, 32 x 11.6mm, clear glass, 1 st hydrol. class SILANIZED 11 09 2178	0.9ml Total Microliter Short Thread Vial ND9, 32 x 11.6mm, clear glass, 1 st hydrol. class	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)	1.6	1.4	0.36	0.36
UsVol. (ml)	1.5	1.1	0.2	0.2
MWVol. (µl)	30	25	25	25
Res. Vol. (µl)	<3	<1	<1	<1

100 pcs. per PP-Box



CLEAN PACK

Any combination of 1.5ml vials with one of the appropriate seals can be supplied as 2in1 KIT!

All vials labelled with such a sticker are packed under pharmaceutical conditions in cleanrooms.

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)

3.2 Short Thread SureStop™ Vials ND9



1.5ml Short Thread SureStop™ Vials ND9 with with sure stop function

- The thread's additional Stopping defines the ideal endpoint of the screwing process.
- This objective screwing result eliminates an user-to-user variance.
- The optimal septum compression produces a significant higher analytical reproducibility.



Art. No	11 09 2746	11 09 2747	11 09 2748
Description	1.5ml Short Thread SureStop™ Vial, 32 x 11.6mm, clear glass, wide opening, with overwind-barrier	1.5ml Short Thread SureStop™ Vial, 32 x 11.6mm, clear glass, wide opening, label + filling lines, with overwind-barrier	1.5ml Short Thread SureStop™ Vial, 32 x 11.6mm, amber glass, wide opening, label + filling lines, with overwind-barrier
TFVol. (ml)	1.85	1.85	1.85
UsVol. (ml)	1.5	1.5	1.5
MWVol. (µl)	200	200	200
Res. Vol. (µl)	<120	<120	<120
	100 pcs. per PP-Box		

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



Art. No	06 09 0357	06 09 0669	06 09 0865	06 09 0866	06 19 2240	06 19 2241	06 19 2242
Description	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 15mm top	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1 st hydrol. class, with assembled plastic spring	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, flat bottom	0.1ml PP Micro-Insert, 29 x 6mm, clear, 10mm top, filling lines	0.1ml PP Micro-Insert, 29 x 6mm, clear, 10mm top, filling lines and attached Plastic Spring	0.2ml PP Micro-Insert, 31 x 6mm, clear, flat bottom
	SILANIZED 06 09 1240		SILANIZED 06 09 1343	SILANIZED 06 09 1792			
TFVol. (ml)	0.34	0.35	0.3	0.5	0.30	0.30	0.5
UsVol. (ml)	0.25	0.3	0.25	0.35	0.25	0.25	0.35
MWVol. (µl)	30	30	30	40	30	30	40
Res. Vol. (µl)	<4	<4	<4	<8	<4	<4	<8
	10 x 100 pcs. per PP-Box						

3.4 Plastic Vials ND9 and Plastic Micro-Vials ND9



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, filling lines, 32 x 11.6mm, slightly concave shaped bottom	1.5ml PP Short Thread Vial, amber, 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					

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

3.5 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.
- With pre-cut septa only the silicone material is slitted in Y-shape while the PTFE lamination remains intact. This way concentration changes occurring with completely slitted septa can be avoided.
- Short thread seals also available as closed top version (blue cap).
- Already assembled seal with slitted liner available, in order to avoid vacuum within the vial in case of multiple injections.
- Screw cap with the design of a crimp cap; therefore suitable for robotic handling.

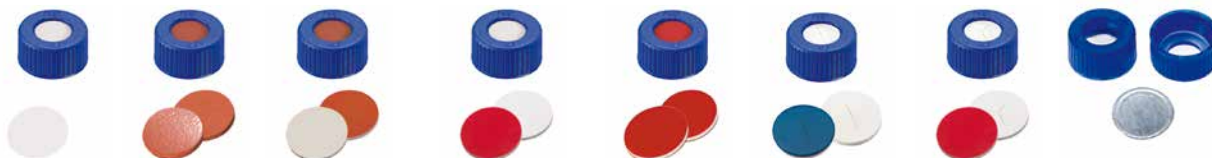
3.5.1 PP Short Thread Cap transparent, 6mm centre hole



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							

3.5.2. PP Short Thread Cap blue

3.5.2.1 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	09 15 2487
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)	Aluminum liner
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	0.06mm (sealed by transparent flat-seal)
100 pcs. per PE-Bag								

3.5.2.2 PP Short Thread Cap blue, closed top

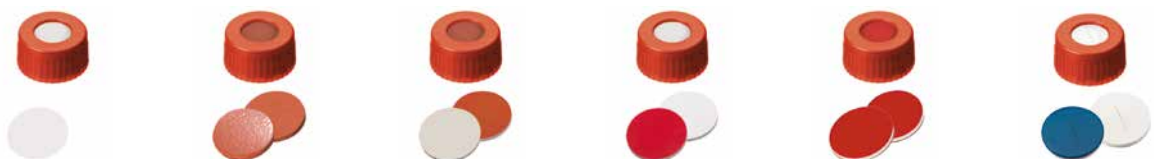


Art. No.	09 15 1828	09 15 1887	09 15 1799
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	Silicone white/PTFE red UltraClean
Durometer	53° shore D	60° shore A	55° shore A
Thickness	0.2mm	1.0mm	1.0mm
100 pcs. per PE-Bag			



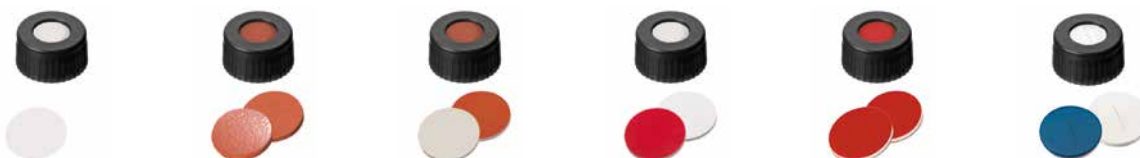
LC/MS and GC/MS Certified Vial Kits please see chapter 3.5.11 on page 25

3.5.3 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						

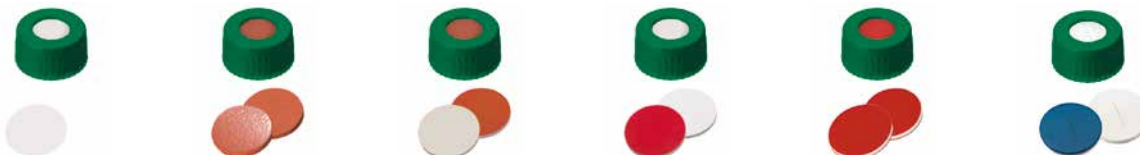
3.5.4 PP Short Thread Cap black, 6mm centre hole



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 <i>UltraClean</i>	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

3.5.5 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 <i>UltraClean</i>	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

3.5.6 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 <i>UltraClean</i>	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

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



Art. No.	09 15 1907
Septa Material	Silicone white/PTFE red <i>UltraClean</i>
Durometer	55° shore A
Thickness	1.0mm

100 pcs. per PE-Bag

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

3.5.8 9mm Short Thread MS Cap transparent



Art. No.	09 08 2000
Septa Material	with thinned penetration area and diaphragm

100 pcs. per PE-Bag

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

3.5.9 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	

Special 2in1 KITs for Waters Instruments

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal
11 24 1628 2in1 KIT consisting of: 11 09 0500 + 09 04 1533	11 09 0500 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening	09 04 1533 9mm UltraBond PP Short Thread Cap, blue, centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm
11 24 1622 2in1 KIT consisting of: 11 09 0500 + 09 04 1534	11 09 0500 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening	09 04 1534 9mm UltraBond PP Short Thread Cap, blue, centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm, SLIT
11 24 1859 2in1 KIT consisting of: 11 09 0519 + 09 04 1533	11 09 0519 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening, label and filling lines	09 04 1533 9mm UltraBond PP Short Thread Cap, blue, centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm
11 24 1860 2in1 KIT consisting of: 11 09 0519 + 09 04 1533	11 09 0519 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening, label and filling lines	09 04 1534 9mm UltraBond PP Short Thread Cap, blue, centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm, SLIT
11 24 1861 2in1 KIT consisting of: 11 09 0520 + 09 04 1533	11 09 0520 1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st hydrolytic class, wide opening, label and filling lines	09 04 1533 9mm UltraBond PP Short Thread Cap, blue, centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm
11 24 1696 2in1 KIT consisting of: 11 09 0520 + 09 04 1534	11 09 0520 1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st hydrolytic class, wide opening, label and filling lines	09 04 1534 9mm UltraBond PP Short Thread Cap, blue, centre hole; Silicone beige/PTFE white, 45° shore A, 1.3mm, SLIT

100 pcs. each in one KIT

Further 2in1 KITs are available upon request!

3.5.10 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/MS-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.



Art. Nr.	11 40 2556	11 40 2557
Description	HPLC/GC Certified Vial KIT 1.5ml Short Thread Vial, clear glass, 1 st hydrol. class, label + filling lines	HPLC/GC Certified Vial KIT 1.5ml Short Thread Vial, amber glass, 1 st hydrol. class, label + filling lines
Seal	Ultra Clean Seal: 9mm PP Short Thread Cap, blue, centre hole; Silicone white/PTFE red, 1.0mm	Ultra Clean Seal: 9mm PP Short Thread Cap, blue, centre hole; Silicone white/PTFE red, 1.0mm

100 Vials and Seals each in one KIT

Further certified combinations are available upon request!

3.5.11 LC/MS and GC/MS Certified Vial KITS (Short Thread Vials and Short Thread Seals ND9)

The LC/MS and GC/MS Certified KITS represent our premium range of certified products. Each lot of the vial/closure combination has been tested by LC/MS and GC/MS on traces of blank values and contaminations.

- Available as clear and amber 9mm Short Thread Vial in the SureStop version with the sure-stop function for the lowest evaporation rate of all autosampler vials.

- Additionally the glass surface of these specific SureStop vials provides very low adsorption tendencies for all types of polar compounds; in fact a lot lower as for all other vials of 1st hydrolytic class glass (without surface treatment).
- The closure contains a very soft ultra low bleed (Ultra High Performance) silicone septum with PTFE layer, optimized for ultra trace analysis.
- The batch-specific test certificate with the MS-Chromatograms can be handed out on request.
- The LC/MS and GC/MS certified KITs are delivered completely shrink wrapped in order to assure originality, purity and transport safety.



Art. Nr.	11 40 3196	11 40 3197
Description	LC/MS and GC/MS Certified Vial KIT 1.5ml Short Thread SureStop™ Vial, 32 x 11.6mm, clear glass, wide opening, label + filling lines with overwind-barrier	LC/MS and GC/MS Certified Vial KIT 1.5ml Short Thread SureStop™ Vial, 32 x 11.6mm, amber glass, wide opening, label + filling lines with overwind-barrier
Seal:	Ultra High Performance Seal: PP Short Thread Cap, blue, centre hole; Silicone darkblue-translucent/PTFE natural, 35° shore A, 1.0mm	Ultra High Performance Seal: PP Short Thread Cap, blue, centre hole; Silicone darkblue-translucent/PTFE natural, 35° shore A, 1.0mm

100 Vials and Seals each in one KIT

Further certified combinations are available upon request!

3.6 Short Thread Vials ND9, wide opening with pre-screwed PP Short Thread Seals ND9 and/or pre-assembled Micro-Inserts with wide opening

- 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 1963	11 14 1841	11 14 1867	11 14 2551
Description	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening (11 09 0500)	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st hydrol. class, wide opening, label + filling lines (11 09 0520)	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st hydrol. class, wide opening, label + filling lines (11 09 0520)	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st hydrolytic class, wide opening, label + filling lines (11 09 0520)
Seal	pre-screwed with PP Short Thread Cap blue, 6mm centre hole, Silicone white/PTFE blue, with slit, 55° shore A, 1.0mm (09 15 0869)	pre-screwed with PP Short Thread Cap blue, 6mm centre hole, Silicone white/PTFE blue, with slit, 55° shore A, 1.0mm (09 15 0869)	pre-screwed with PP UltraBond Seal blue, 6mm centre hole, Silicone beige/PTFE white, with slit (improved IM Quality*), 45° shore A, 1.3mm (09 04 1534)	pre-screwed with PP Short Thread Cap transparent, centre hole, Silicone white/PTFE red, 55° shore A, 1.0mm, pre-cut (Y) (09 15 2021)
100 pcs. per PP-Box				

Further pre-screwed and/or pre-assembled combinations upon request!

3.7 Special 2in1 KITS

2in1 KITS with Short Thread Vials

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal
11 24 1050 2in1 KIT consisting of: 11 09 0500 + 09 15 0838	11 09 0500 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening	09 15 0838 PP Short Thread Cap blue, 6mm centre hole; UltraClean Silicone white/PTFE red, 55° shore A, 1.0mm
11 24 1051 2in1 KIT consisting of: 11 09 0500 + 09 15 0869	11 09 0500 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening	09 15 0869 PP Short Thread Cap blue, 6mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.0mm, with slit
11 24 2391 2in1 KIT consisting of: 11 09 0519 + 09 15 1669	11 09 0519 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening, label and filling lines	09 15 1669 PP Short Thread Cap, black, 6mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.0mm, slit
11 24 1238 2in1 KIT consisting of: 11 09 0519 + 09 15 0869	11 09 0519 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening, label and filling lines	09 15 0869 PP Short Thread Cap blue, 6mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.0mm, slit
11 24 1141 2in1 KIT consisting of: 11 09 0500 + 09 15 0481	11 09 0500 1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening	09 15 0481 PP Short Thread Cap transparent, 6mm centre hole; UltraClean Silicone white/PTFE red, 55° shore A, 1.0mm
11 24 1091 2in1 KIT consisting of: 11 09 0520 + 09 15 0481	11 09 0520 1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 st hydrolytic class, wide opening, label and filling lines	09 15 0481 PP Short Thread Cap transparent, 6mm centre hole; UltraClean Silicone white/PTFE red, 55° shore A, 1.0mm
100 pcs. each in one KIT		

Further 2in1 KITS are available upon request!

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)



- Packed in a cleanroom which is a new hygienic standard for chromatography vials.
- Wide opening enables easy filling with viscous materials.
- 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.
- Closed top Seals and replacement septa are available.
- Broad range of Micro-Inserts.

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, 1 st hydrol. class, wide opening	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening, label + filling lines	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, amber glass, 1 st hydrol. class, wide opening, label + filling lines	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 15mm top	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1 st hydrol. class, with assembled plastic spring	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 st 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 PP Screw Caps ND10



Art. No.	10 08 0742	10 08 1899
Septa Material	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.
- 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.
- Vials with a barcode label can be obtained as well as pre-crimped vials.
- Standard vials for GC and HPLC.
- 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.



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 2786
Description	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening, label + filling lines	1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1 st hydrol. class, wide opening, label + filling lines	Crimp Neck Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, clear glass, 1 st hydrol. class, label + filling lines	Crimp Neck Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, amber glass, 1 st hydrol. class, label + filling lines	Snap/Crimp Vial ND11 with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1 st hydrol. class	Snap/Crimp Vial ND11 with integrated Micro-Insert, 32 x 11.6mm, amber glass, 1 st hydrolytic class
	SILANIZED 11 09 2085	SILANIZED 11 09 2172	SILANIZED 11 09 1767	"Top Bonded"	"Top Bonded"	"Base Bonded"	"Base bonded"
TFVol. (ml)	2.0	2.0	2.0	0.4	0.4	0.39	0.39
UsVol. (ml)	1.50	1.50	1.50	0.21	0.2	0.3	0.3
MWVol. (µl)	200	200	200	25	25	30	30
Res. Vol. (µl)	<100	<100	<100	<1	<1	<3	<3
	100 pcs. per PP-Box						



Art. No.	11 09 0619	11 09 2276	11 09 0415	11 09 0486	11 14 1190	11 14 1656
Description	1.1ml Microliter-Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class	0.9ml Total Microliter Snap/Crimp Ring Vial ND11, 32 x 11.6mm, clear glass, 1 st hydrolytic class	1.1ml Micro-Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, conical	0.9ml Micro-Vial, 32 x 10mm, clear glass, 1 st hydrol. class, conical	TopSert TPX Snap/Crimp Vial ND11, 32 x 11.6mm, clear, with integrated 0.2ml Glass Micro-Insert	TopSert TPX Snap/Crimp Vial ND11, 32 x 11.6mm, amber, with integrated 0.2ml Glass Micro-Insert
	SILANIZED 11 09 2177				SILANIZED 11 14 1266	SILANIZED 11 14 1695
TFVol. (ml)	1.8	1.4	1.3	1.1	0.35	0.35
UsVol. (ml)	1.5	1.2	1.1	0.9	0.2	0.2
MWVol. (µl)	40	25	30	30	30	30
Res. Vol. (µl)	<8	<1	<4	<2	<4	<4
	100 pcs. per PP-Box			10 x 100 pcs. per PP-Box	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)

5.2 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	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 15mm top	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1 st hydrol. class, with assembled plastic spring	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, flat bottom
	SILANIZED 06 09 1240		SILANIZED 06 09 1343	SILANIZED 06 09 1792
TFVol. (ml)	0.34	0.35	0.3	0.5
UsVol. (ml)	0.25	0.3	0.25	0.35
MWVol. (µl)	30	30	30	40
Res. Vol. (µl)	<4	<4	<4	<8
10 x 100 pcs.per PP-Box				

5.3 Aluminum Crimp Seals ND11

5.3.1 Natural Rubber/TEF Seals

- 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).
- Temperature resistant from -40°C up to 120°C.
- Standard seal for GC and HPLC.
- Ideal for multiple injections due to high resealability.



Art. No.	11 03 0209	11 03 0300	11 03 0535	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	1.0mm	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.
- Cleaner than Natural Rubber or Butyl; low fragmentation.
- softer alternative to Natural Rubber/TEF and Butyl/PTFE.
- 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

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



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 <i>UltraClean</i>	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 <i>UltraClean</i>	Silicone white/PTFE red <i>UltraClean</i>	Silicone white/PTFE red <i>UltraClean</i>	Silicone white/PTFE red <i>UltraClean</i>
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									

5.3.4 Other Aluminum Crimp Seals

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



Art. No.	11 03 2519	11 03 2578	11 03 0339	11 03 1641	11 03 1663
Description Cap	11mm TPF Combination Seal: Aluminum Cap, clear lacquered, 5.5 mm centre hole	11mm Combination Seal: Aluminum Cap, clear lacquered, 5.5 mm centre hole	Aluminum Cap clear lacquered, 5.5mm centre hole, roll groove	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
Durometer		53° shore D	53° shore D	55° shore A	55° shore A
Thickness	0.06mm	0.25mm	0.25mm	1.3mm	1.3mm
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	Art. No.	13 15 0996
Description Cap	Magnetic Cap, gold lacquered, 5mm centre hole	Magnetic Cap, gold lacquered, 5mm centre hole	Description Cap	PE-Cap, transparent, 13 x 7.5mm, 4.5mm centre hole
Septa Material	Silicone white/PTFE red <i>UltraClean</i>	PTFE red/Silicone white/PTFE red	Septa Material	Silicone white/PTFE red <i>UltraClean</i>
Durometer	45° shore A	45° shore A	Durometer	55° shore A
Thickness	1.3mm	1.0mm	Thickness	1.0mm
100 pcs. per PE-Bag		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	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						

5.6 Septa 11 mm (cont.)

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 and/ or pre-assembled Micro-Inserts for vials with wide opening

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



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, 1 st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrol. class, wide opening (11 09 0356)	1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1 st hydrol. class, wide opening, label + filling lines (11 09 0477)
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

Further pre-crimped and/or pre-assembled combinations upon request!

5.8 Special 2in1 KITS

2in1 Kits with Crimp Neck Vials ND11

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal
11 25 1054 2in1 KIT consisting of: 11 09 0356 + 11 03 0300	11 09 0356 1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening	11 03 0300 11mm Aluminum Cap, clear lacquered, centre hole; Natural Rubber red-orange/Butyl red/TEF transparent, 45° shore A, 1.0mm
11 25 1053 2in1 KIT consisting of: 11 09 0356 + 11 03 0209	11 09 0356 1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening	11 03 0209 11mm Aluminum Cap, clear lacquered, centre hole; Natural Rubber red-orange/TEF transparent, 60° shore A, 1.0mm
11 25 2281 2in1 KIT consisting of: 11 09 0476 + 11 03 0300	11 09 0476 1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening, label and filling lines	11 03 0300 11mm Aluminum Cap, clear lacquered, centre hole; Natural Rubber red-orange/Butyl red/TEF transparent, 45° shore A, 1.0mm
11 25 1287 2in1 KIT consisting of: 11 09 0477 + 11 03 0300	11 09 0477 1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1 st hydrolytic class, wide opening, label and filling lines	11 03 0300 11mm Aluminum Cap, clear lacquered, centre hole; Natural Rubber red-orange/Butyl red/TEF transparent, 45° shore A, 1.0mm
11 25 1097 2in1 KIT consisting of: 11 09 0477 + 11 03 0209	11 09 0477 1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1 st hydrolytic class, wide opening, label and filling lines	11 03 0209 11mm Aluminum Cap, clear lacquered, centre hole; Natural Rubber red-orange/TEF transparent, 60° shore A, 1.0mm
11 25 2263 2in1 KIT consisting of: 11 09 0356 + 11 03 0535	11 09 0356 1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 st hydrolytic class, wide opening	11 03 0535 11mm Aluminum Cap, clear lacquered, centre hole; Natural Rubber red-orange/TEF transparent, 60° shore A, 1.0mm

100 pcs. each in one KIT

Further 2in1 KITS are available upon request!

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



Art. No.	11 09 0627	11 09 0644	11 09 0645	11 09 2276	11 09 2353	11 09 2786
Description	1.5ml Snap Ring Vial, 32 x 11.6mm, clear glass, 1 st hydroly. class, wide opening	1.5ml Snap Ring Vial, 32 x 11.6mm, clear glass, 1 st hydroly. class, wide opening, label + filling lines	1.5ml Snap Ring Vial, 32 x 11.6mm, amber glass, 1 st hydroly. class, wide opening, label + filling lines	0,9ml Total Microliter Snap Ring Vial ND11, 32 x 11.6mm, clear glass, 1 st hydrolytic class	Snap/Crimp Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1 st hydrolytic class	Snap/Crimp Vial with integrated Micro-Insert, 32 x 11.6mm, amber glass, 1 st hydrolytic class
	SILANIZED 11 09 2173	SILANIZED 11 09 2174	SILANIZED 11 09 2189		"Base Bonded"	"Base bonded"
TFVol. (ml)	1.90	1.90	1.90	1.40	0.40	
UsVol. (ml)	1.5	1.5	1.5	1.2	0.3	
MWVol. (µl)	200	200	200	25	30	
Res. Vol. (µl)	<100	<100	<100	<1	<3	
	100 pcs. per PP-Box					

6.2 Plastic Snap Ring Micro-Vials ND11



Art. No.	11 14 1190	11 14 1656
Description	TopSert TPX Snap/Crimp Vial ND11, 32 x 11.6mm, clear, with integrated 0.2ml Glass Micro-Insert	TopSert TPX Snap/Crimp Vial ND11, 32 x 11.6mm, amber, with integrated 0.2ml Glass Micro-Insert
	SILANIZED: 11 14 1266	SILANIZED: 11 14 1695
	100 pcs. per PP-Box	

6.2 Plastic Snap Ring Micro-Vials ND11 (cont.)



Art. No.	11 19 0933	11 19 1022	11 19 1707	11 19 1217
Description	0.3ml PP Snap Ring Micro-Vial, transparent, 32 x 11.6mm	0.3ml TPX Snap Ring Micro-Vial, crystal clear, 32 x 11.6mm	0.7ml PP Snap Ring Micro-Vial, transparent, 32 x 11.6mm	0.3ml PP Snap Ring Micro-Vial, amber, 32 x 11.6mm
TFVol. (ml)	0.4	0.4	0.9	0.4
UsVol. (ml)	0.25	0.25	0.64	0.25
MWVol. (µl)	30	30	50	30
Res. Vol. (µl)	<4	<4	<25	<4
	100 pcs. per PE-Bag			

6.3 Micro-Inserts for Snap Ring Vials ND11 with wide opening



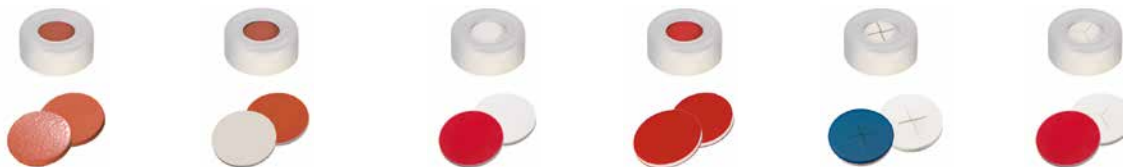
Art. No.	06 09 0357	06 09 0669	06 09 0865	06 09 0866
Description	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydroly. class, 15mm top	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydroly. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1 st hydroly. class, with assembled plastic spring	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydroly. class, flat bottom
	SILANIZED 06 09 1240		SILANIZED 06 09 1343	SILANIZED 06 09 1792
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)

6.4 PE Snap Ring Seals ND11

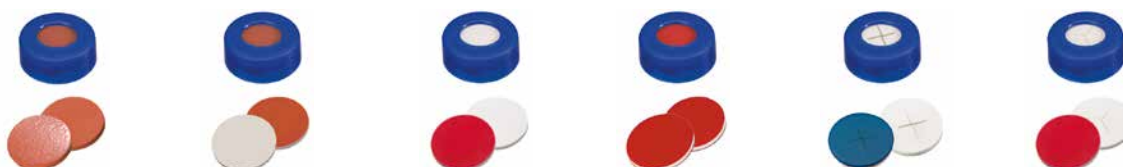
- Synthetic RedRubber/PTFE material as a cost-effective match of the Instrument Manufacturer Quality. In contrast to Natural Rubber it is not suitable for multiple injections, however softer for a safe penetration.
- Snap ring caps are also available in a soft quality with transparent or blue caps. Soft caps are more convenient in handling (pushing on/removal), however, they are less tight than hard caps.
- 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.

6.4.1 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						

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



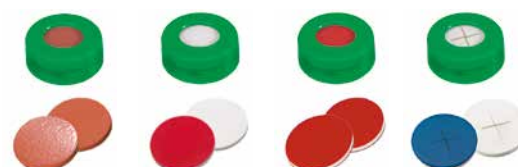
Art. No. Hard Cap	11 15 1267	11 15 2107	11 15 1151	11 15 1268	11 15 1269	11 15 2047
Art. No. Soft Cap	11 15 1856	11 15 1817	11 15 1854	11 15 1857	11 15 1858	11 15 2048
Septa Material	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige, instrument manuf. quality	Silicone white/PTFE red UltraClean	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						

6.4.3 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				

6.4.4 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				

6.4.5 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				

6.4.6 PE Snap Cap for Snap Ring Vials ND11



Art. No.	11 08 1676
Description	Cap, PE Push-On Cap, blue
Septa Material	with thinned penetration point
Durometer	
Thickness	
100 pcs. per PE-Bag	

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

7. 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 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 7.5).
- 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).



7.1 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, 1 st hydrol. class	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 st hydrol. class, label + filling lines	4ml Screw Neck Vial, 45 x 14.7mm, amber glass, 1 st hydrol. class	4ml Screw Neck Vial, 45 x 14.7mm, amber glass, label + filling lines	0.3ml Micro-Insert, 40 x 6mm, clear glass, 1 st 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

7.2 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)

7.3 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

7.4 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

7.5 Special 2in1 KITS

3in1 KITS for VWR (Merck®)/Hitachi and Waters® Autosamplers

Art. No. 3in1 KIT	Art. No. Vial	Art. No. Cap	Art. No. Septa
13 28 1071 3in1 KIT consisting of: 13 09 0222, 13 08 0166, 12 02 0168	13 09 0222 4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 st hydrol. class	13 08 0166 Polypropylene Screw Cap, black, 8.5mm centre hole	12 02 0168 PTFE virginal, 53° shore D, 0.25mm
13 28 1076 3in1 Kit consisting of: 13 09 0280 13 08 0166 12 02 0168	13 09 0280 4ml Screw Neck Vial, 45 x 14.7mm, amber glass, 1 st hydrol. class	13 08 0166 Polypropylene Screw Cap, black, 8.5mm centre hole	12 02 0168 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 2in1 KIT consisting of: 13 09 0222, 13 15 0456	13 09 0222 4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 st hydrol. class	13 15 0456 PP Screw Cap, black, 8.5mm centre hole; Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.3mm	
13 28 1069 2in1 KIT consisting of: 13 09 0222, 13 15 0815	13 09 0222 4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 st hydrol. class	13 15 0815 PP Screw Cap, black, 8.5mm centre hole; Silicone cream/PTFE red, 55° shore A, 1.5mm	13 28 1074 Same Seal in combination with 13 09 0280 (amber glass)
13 28 1070 2in1 KIT consisting of: 13 09 0222, 13 15 0292	13 09 0222 4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 st hydrol. class	13 15 0292 PP Screw Cap, black, 8.5mm centre hole; PTFE red/Silicone white/PTFE red, 45° shore A, 1.0mm	
13 28 1541 2in1 Kit consisting of: 13 09 0222 13 15 1293	13 09 0222 4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 st hydrol. class	13 15 1293 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!

8. 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)

- 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.
- 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.
- Star-shaped diaphragm enables easy penetration of the PE-Plug.
- 08 14 1168 + 08 14 1169 with soft style plug for Waters® and Shimadzu.
- Recommended for HPLC usage.
- Shell vials and the appropriate plugs can also be supplied as a 2in1 KIT.
- A handy and inexpensive vial/closure combination for uncritical analyses.



8.1 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, 1 st hydrol. class, 6mm PE-Plug, transparent, for ALCOTT	1ml Shell Vial, 40 x 8.2mm, clear glass, 1 st 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, 1 st 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, 1 st hydrol. class, 13mm top (only in comb. with 08 14 0513 + 08 14 0595)	4ml Shell Vial, 44.6 x 14.65mm, clear glass, 1 st hydrol. class, 15mm PE-Plug, transparent for Waters® Wisp 48 Pos. Carousel	4ml Shell Vial, 44.6 x 14.65mm, amber glass, 1 st hydrol. class, 15mm PE-Plug, transparent for Waters® Wisp 48 Pos. Carousel	0.3ml Micro-Insert, 43.45 x 6mm, clear glass, 1 st 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.

8.2 Shell Vials 2ml and appropriate Micro-Inserts



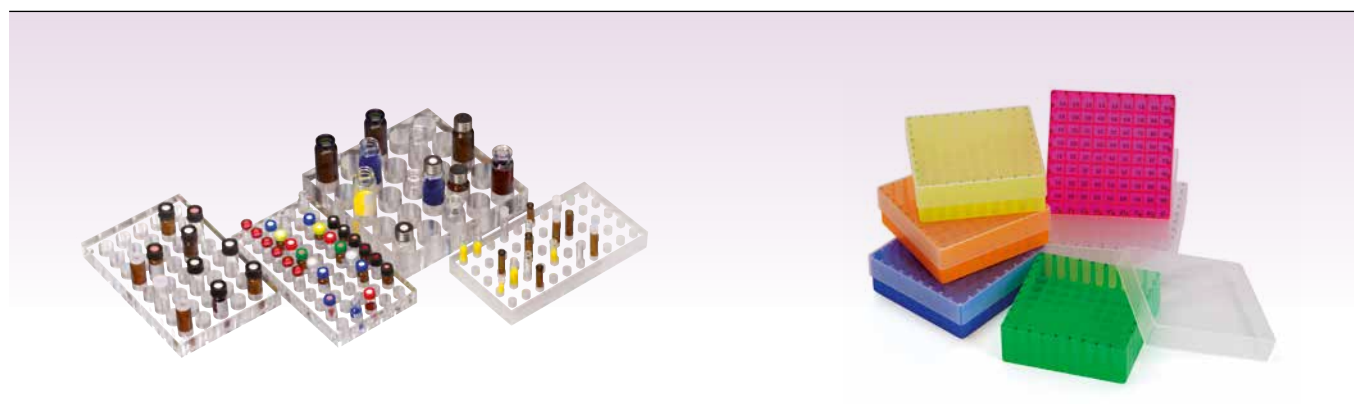
Art. No.	11 14 0544	11 14 0545	06 09 0357	06 09 0669	06 09 0866
Description	2ml Shell Vial, 31.5 x 11.6mm, clear glass, 1 st hydrol. class, 12mm PE-Plug, transparent for various instruments	2ml Shell Vial, 31.5 x 11.6mm, amber glass, 1 st hydrol. class, 12mm PE-Plug, transparent for various instruments	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 15mm top SILANIZED 06 09 1240	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, 12mm top	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 st hydrol. class, flat bottom SILANIZED 06 09 1792
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	

8.3 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)



Vial Racks
please see chapter 18.1 on page 62

Storage Boxes
please see chapter 18.2 on page 63

9. Headspace ND20 (ND18)

Chapter 9 “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 on page 41 photographs and article descriptions.



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 system. Under pressure the septa will bulge against the Aluminum cap with such a force that the cap is torn apart. By own testing we verified 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 (UltraClean).

9.1 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, 1 st hydrol. class, rounded bottom	5ml Crimp Neck Vial, 38 x 20mm, clear glass, 1 st hydrol. class, flat bottom	10ml Headspace-Vial, 46 x 22.5mm, clear/amber glass, 1 st hydrol. class, DIN-crimp neck, rounded bottom	10ml Crimp Neck Vial, 54.5 x 20mm, clear glass, 1 st hydrol. class, flat bottom	10ml Headspace-Vial, 46 x 22.5mm, clear glass, 1 st hydrol. class, DIN-crimp neck, long neck, flat bottom	20ml Headspace-Vial, 75.5 x 23mm, clear/amber glass, 1 st hydrol. class, rounded bottom	20ml Headspace-Vial, 75.5 x 23mm, clear glass, 1 st hydrol. class, rounded bottom, 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 3175	20 09 0796	20 09 0873 20 09 1690	20 09 1222	18 09 1306 18 09 1310	18 09 1307 18 09 1311
Description	20ml Headspace-Vial, 75.5 x 22.75mm, clear glass, 1 st hydrolytic class, bevelled Crimp Neck, long neck, flat bottom	20ml Headspace-Vial, 75.5 x 22.5mm, clear glass, 1 st hydrol. class, DIN-crimp neck, long neck, flat bottom	20ml Headspace-Vial, 75.5 x 22.5mm, clear/amber glass, 1 st hydrol. class, DIN-crimp neck, long neck, rounded bottom	20ml SPME Vial, 75.5 x 22.5mm, clear glass, 1 st hydrol. class, rounded bottom, special crimp neck	10ml Precision Thread Vial ND18, 46 x 22.5mm, clear/amber glass, 1 st hydrol. class, rounded bottom	20ml Precision Thread Vial ND18, 75.5 x 22.5mm, clear/amber glass, 1 st hydrol. class, rounded bottom
TFVol. (ml)	21.2	21.2	20.9	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					
	Agilent	Carlo Erba, Dani, Fisons, Agilent	CTC PAL (Varian, Gerstel, Atas, Shimadzu), TriPlus HS	SPME Vial for CTC PAL	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)

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



Scale 1:3
Original size p.s. 94

Art. No.	20 09 0795	20 09 0796 20 09 3175	20 09 1405 20 09 1691	20 09 0873 20 09 1690	20 09 1222	18 09 1306 18 09 1310
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	10ml Precision Thread Vial, rounded bottom 46 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	CTC Combi PAL (Varian, Gerstel, Atas, Shimadzu), PerkinElmer*, Agilent
Remarks	*** not suitable for Thermo Scientific HS250/HS500					
Autosampler Compatibility						
Agilent G1888A	20 03 0030/20 03 0901	20 03 0030/20 03 0901				
Agilent HS 7694 (DANI HS 39.50/HS 86.50)	20 03 0264/20 03 0828	20 03 0264/20 03 0828				
Agilent CTC Combi Pal						
CTC Combi PAL (HS Mode) (Gerstel MPS 2/Varian)						18 03 1578/18 03 1309 18 03 1414
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)					20 03 1246/20 03 1264	18 03 1578/18 03 1309 18 03 1414/18 03 2063
CTC Combi-xt SPME Options						
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)			20 03 0975	20 03 1536	20 03 0975	20 03 1536
Shimadzu SIL-30 ACMP						18 03 1578/18 03 1309 18 03 1414
Shimadzu AOC-5000 (SPME Mode)					20 03 1246/20 03 1264	18 03 1578/18 03 1309 18 03 1414/18 03 2063
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), Thermo Scientific TriPlus 300, Thermo Scientific TriPlus RSH			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	

9.3 Other Crimp Neck Vials ND20 and Screw Neck Vial ND18



Scale 1:2, Original size: P. 89



Scale 1:2, Original size: P. 89



Scale 1:2

Art. No.	20 09 0289	20 09 0343	18 09 0864
Description	50ml Crimp Neck Vial, 101 x 31mm, clear glass, 1 st hydrol. class	100ml Crimp Neck Vial, 94.5 x 51.6mm, clear glass, 3 rd hydrol. class	20ml Headspace-Vial, 75.5 x 23mm, clear glass, 1 st hydrol. class, rounded bottom, with screw thread ND18
TFVol. (ml)	58	118.8	21.2
UsVol. (ml)	50	100	20
MWVol. (µl)	3080	10 000	1500
Res. Vol. (µl)	1500	6000	800
	100 pcs. per PP-Box	88 pcs. shrink-wrapped	100 pcs. per PP-Box

9.4 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 ONLY be obtained in combination with a liner or a stopper!

9.4.1 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	Chloro-Butyl, dark grey					
Durometer	55° shore A					
Thickness	3.0mm					
	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)

9.4.2 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	Bromo-Butyl/PTFE, grey						
Durometer	50° shore A						
Thickness	3.0mm						
100 pcs. per PE-Bag							

9.4.3 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, Bromo-Butyl/PTFE					
Durometer	50° shore A					
Thickness	3.0mm					
100 pcs. per PE-Bag						

9.4.4 Silicone/PTFE Seals (completely PTFE laminated)

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



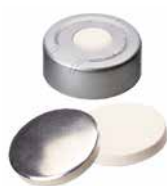
Art. No.	20 03 0142	20 03 0163	20 03 0226	20 03 0227	20 03 0665	20 03 0975	20 03 1536
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Centre Tear-Off Cap, clear lacquered	Complete Tear-Off Cap, clear lacquered	Magnetic Cap, gold, 5mm centre hole	Magnetic Cap, gold,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



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 (<i>HT Quality</i>)			
Durometer	45° shore A			
Thickness	3.2mm			
100 pcs. per PE-Bag				

9.4.5 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			

9.4.6 Ultra High Temperature (UHT) Seal (Silicone/PTFE)

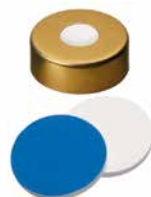
- High temperature, high quality Silicone/PTFE septum for less extractables at low to mid-high temperatures.
- Operation up to 300°C possible.
- Low bleeding level at high temperatures (>120°C).



Art. No.	20 03 3056
Description Cap	Ultra High Temperature Seal: 20mm Steel Crimp Cap, silver, with 5mm centre hole
Septa Material	Ultra High Temperature Septa (UHT) 20mm Silicone dark red/PTFE <i>UltraClean</i>
Durometer	45° shore A
Thickness	3.0mm
100 pcs. per PE-Bag	

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

- 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.
- Much thinner liners for easier penetration of the sensitive phase.



Art. No.	20 03 1246
Description Cap	Magnetic Cap, gold, 8mm centre hole
Septa Material	Silicone white/PTFE blue <i>UltraClean</i>
Durometer	55° shore A
Thickness	1.5mm
100 pcs. per PE-Bag	



Manual Crimping Tools
please see
chapter 17.1 and 17.2 on page 59



Electronic Crimpers and Decappers
please see
chapter 17.6 on page 61



Programmable Electronic High Power Crimp Station
please see
chapter 17.7 on page 61

9.5 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

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

- Seals for washer bottles on the instruments.
- Now also available as PE-Cap with 8mm hole.
- Intermediate closure when collecting samples out in the field.



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, 8.0mm 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			

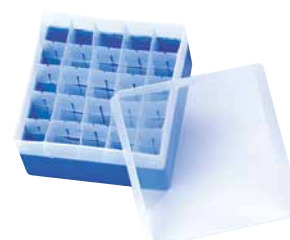
suitable for 20 09 0297, 20 09 0342, 20 09 0440, 20 09 1223
suitable for 20 09 0289, 20 09 0343, 20 09 0795, 20 09 0796, 20 09 0801, 20 09 0802, 20 09 0873, 20 09 1405, 20 09 1690, 20 09 1691
100 pcs. per PE-Bag

9.6.1 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



PP Storage Box for 5ml, 10ml and 20ml Headspace Vials please see chapter 18.2.3 on page 63

9.7 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.

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



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

9.7.1 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

9.8 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
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
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
Thickness	1.6mm	1.6mm	2.0mm	2.0mm	1.5mm	1.5mm	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!

9.8.1 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. 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
- For storage of powders and solids

10.1 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, 1 st hydrol. class	10ml Snap Cap Vial ND18, 50 x 22mm, clear glass, 1 st hydrol. class	15ml Snap Cap Vial ND22, 48 x 26mm, clear glass, 1 st hydrol. class	25ml Snap Cap Vial ND22, 65 x 26mm, clear glass, 1 st 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)

11. 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 11.5 "Pre-Screwed Vials").
- Broad range of EPA Vials in clear and amber glass.
- Volumes of 20ml, 30ml, 40ml and 60ml available.



11.1 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, 1 st hydrol. class	20ml EPA Screw Neck Vial, 57 x 27.5mm, amber glass, 1 st hydrol. class	30ml EPA Screw Neck Vial, 72.5 x 27.5mm, clear glass, 1 st hydrol. class	30ml EPA Screw Neck Vial, 72.5 x 27.5mm, amber glass, 1 st hydrol. class	40ml EPA Screw Neck Vial, 95 x 27.5mm, clear glass, 1 st hydrol. class	40ml EPA Screw Neck Vial, 95 x 27.5mm, amber glass, 1 st hydrol. class	60ml EPA Screw Neck Vial, 140 x 27.5mm, clear glass, 1 st hydrol. class	60ml EPA Screw Neck Vial, 140 x 27.5mm, amber glass, 1 st 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)

11.2 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!



11.2.1 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

11.2.2 UltraBond Seals ND24

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



Art. No.	24 04 0842	24 04 0841
Description Cap	PP Screw Cap white, centre hole	PP Screw Cap white, closed top
Septa Material	Silicone natural/PTFE beige (EPA-Quality)	Silicone natural/PTFE beige
Durometer	45° shore A	45° shore A
Thickness	3.2mm	3.2mm

100 pcs. per PE-Bag

11.3 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

11.4 PP Screw Caps ND24



Art. No.	24 08 0403	24 08 0592
Description Cap	Polypropylene Screw Cap, white, 12.5mm centre hole	Polypropylene Screw Cap, white, closed top
Durometer		
Thickness		

100 pcs. per PE-Bag

11.5 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, 1 st hydrolytic class, EPA (24 09 0589)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1 st hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1 st hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1 st hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, amber glass, 1 st hydrolytic class, EPA (24 09 0928)	60ml Screw Neck Vial, 140 x 27.5mm, clear glass, 1 st hydrolytic class, EPA (24 09 1089)	60ml Screw Neck Vial, 140 x 27.5mm, clear glass, 1 st hydrolytic class, EPA (24 09 1089)
Description of Screwed-on Seal	pre-screwed with UltraBond Seal, white, centre hole, Silicone nat./PTFE beige (EPA-Quality)	pre-screwed with PP Screw Cap, white, centre hole, Silicone white/PTFE beige	pre-screwed with UltraBond Seal, white, centre hole, Silicone natural/PTFE beige (EPA-Quality)	pre-screwed with UltraBond Seal, white, closed top, Silicone natural/PTFE beige (EPA-Quality)	pre-screwed with PP Screw Cap, white, centre hole, Silicone white/PTFE beige	pre-screwed with PP Screw Cap, white, centre hole, Silicone white/PTFE beige	pre-screwed with 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

12. Standard, Certified and High Performance 96 and 384 Position Block Systems

- The first complete and chromatography tested portfolio of well plates for separations science applications.
- Prepare and analyze samples in less time with less lab bench space and storage space required per sample.
- Easier and quicker filling and sealing process using multi-channel pipetting tools.
- Efficient transport of many samples in a single plate.
- SBS/ANSI standard footprint assures compatibility with all well plate capable prep stations and chromatography autosamplers.



12.1 Standard 96 Block Systems (Standard Well Plates, plastic, non coated, non sterile, chromatography tested)



Art. No.	08 05 2898	08 05 2899	08 05 2900	08 05 2901	08 05 2902
Description	Micro Well Microplate, round opening, 96 position	Micro Well Microplate, round opening, 96 position	Micro Well Microplate, round opening, 96 position	Deep Well Microplate, round opening, 96 position	Square Well Microplate, square opening
Material	PP				
Height (mm)	14.4	14.5	31.6	44	44
Shape	V-shape, 8mm diameter	U-shape, 8mm diameter	U-shape, 8mm diameter	U-shape, 8mm diameter	V-shape
TFVol. (µl)	450	500	1300	2000	2000
UsVol. (µl)	10-400	10-400	50-1000	50-2000	50-1900
	20 pieces	10 pieces	5 pieces	5 pieces	5 pieces

Blocks, Mats and Tapes for water, water & polar solvents, polar solvents; for simple applications; high sample concentrations; non regulated labs; MS single ion mode

12.1.1 Sealmats (Webseals) Block Cover, non sterile (for 08 05 2898, 08 05 2899, 08 05 2900 and 08 05 2901, 08 05 2902)



Art. No.	08 29 2928	08 29 2929	08 29 2930	08 29 2939
Description	Sealmat (Block Cover)	Sealmat (Block Cover)	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2931	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2941
Colour	clear	clear	blue	clear
Material	Silicone, slit	EVA	Silicone/PTFE	Silicone
Shape	round, for 8mm diameter	round, for 8mm diameter	round, for 8mm diameter	square (Square Well)
	10 pieces	5 pieces	5 pieces	5 pieces

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

12.2 Standard 384 Block Systems, Square Well

(Standard Well Plates, plastic, non coated, non sterile, chromatography tested)



Art. No.	08 05 2904	08 05 2905	08 05 2906	08 05 2903	
Description	Deep Well Microplate square opening (Square Well)	Well Microplate square opening (Square Well)	Well Microplate square opening (Square Well)	Shallow Well Standard Height Microplate (Square Well)	Blocks, Mats and Tapes for water, water & polar solvents, polar solvents; for simple applications; high sample concentrations; non regulated labs; MS single ion mode
Material	PP				
Height (mm)	22	14.4	14.4	14.4	
Shape	U-shape	U-shape	V-shape	U-shape	
TFVol. (µl)	252	120	145	58	
UsVol. (µl)	5-240	10-100	4-120	2-35	
	5 pieces	20 pieces	10 pieces	25 pieces	

12.2.1 Seal mats (Webseals) Block Cover, non sterile (for 08 05 2904, 08 05 2905, 08 05 2906, 08 05 2903)



Art. No.	08 29 2943	08 29 2950
Description	Sealmat – Webseal (Block Cover)	Sealmat – Webseal (Block Cover)
Colour	clear	clear
Material	Silicone	Silicone, slit
Shape	384 Pos., square (Square Well)	384 Pos., square (Square Well)
	5 pieces	5 pieces

12.3 Standard 96 Block Systems, Well-Plate, PP, CERTIFIED

(Standard Well Plates, plastic, non coated, non sterile)



Art. No.	08 05 2924	08 05 2925	08 05 2926	08 05 2920	08 05 2921	
Description	Micro Well Microplate, round opening, 96 position	Micro Well Microplate, round opening, 96 position	Micro Well Microplate, round opening, 96 position	Deep Well Microplate, round opening, 96 position	Square Well Microplate, square opening	Blocks, Mats and Tapes for water, water & polar solvents, polar solvents; for sensitive applications; lower sample concentrations; regulated labs; TIC and full chromatograms
Material	PP					
Height (mm)	14.7	14.7	14.7	41.6	44.4	
Shape	Flat bottom, 7mm diameter	U-shape, 7mm diameter	V-shape, 7mm diameter	U-shape, 7mm diameter	V-shape	
TFVol. (µl)	350	270	220	1000	2000	
UsVol. (µl)	10-300	10-250	10-190	50-900	50-1900	
	10 pieces	10 pieces	10 pieces	5 pieces	5 pieces	

12.3.1 Seal mats (Webseals) Block Cover, Silicone, non sterile

(for 08 05 2924, 08 05 2925, 08 05 2926, 08 05 2920 and 08 05 2921)



Art. No.	08 29 2949	08 29 2933	08 29 2939	08 29 2938
Description	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2935	Sealmat Sealmat (BlockCover), slit: 08 29 2934	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2941	Sealmat (Block Cover)
Colour	clear	blue	clear	blue
Material	Silicone, slit	Silicone/PTFE	Silicone	Silicone/PTFE
Shape	round, flat base, step	round, for 7mm diameter	Square (Square Well)	Square (Square Well)
	5 pieces			

12.4. Standard 384 Block Systems, Microplate, PP, square opening, **CERTIFIED**

(Standard Well Plates, plastic, non coated, non sterile)



Art. No.	08 05 2922	08 05 2923	
Description	MicroWell Microplate square opening 384 Positions	MicroWell Microplate square opening 384 Positions	Blocks, Mats and Tapes for water, water & polar solvents, polar solvents; for sensitive applications; lower sample concentrations; regulated labs; TIC and full chromatograms
Material	PP	PP	
Height (mm)	14.4	30.2	
Shape	U-shape, square	V-shape, square	
TFVol. (µl)	58	300	
UsVol. (µl)	2-35	5-240	
	10 pieces	6 pieces	

12.4.1 Seal mats (Webseals) Block Cover, non sterile (for 08 05 2922 and 08 09 2923)



Art. No.	08 29 2943	08 29 2942	
Description	Sealmat - Webseal(Block Cover) Sealmat (BlockCover), slit: 08 29 2950	Sealmat - Webseal (Block Cover) Sealmat (BlockCover), slit: 08 29 2944	
Colour	clear	blue	
Material	Silicone	Silicone/PTFE	
Shape	square (Square Well)	square (Square Well)	
	5 pieces	5 pieces	

12.5. Standard 96 Block Systems, Micro-Well-Plate, Deep Well Microplate, glass coated round and square opening, (chromatography tested, non sterile)



Art. No.	08 05 2927	08 05 2914	08 05 2915	08 05 2916	08 05 2917	
Description	Micro Well Microplate, round opening, 96 position	Micro Well Microplate, round opening, 96 position	Micro Well Plate, round opening, 96 position	Deep Well Microplate, round opening, 96 position	Square Well Plate, round opening, 96 position	Blocks, Mats and Tapes all solvents (incl. non-polar); for very sensitive applications; lowest sample concentrations; regulated labs; hydrophobic samples (Proteins); MSCERT level
Material	PP, glass coated	PP, glass coated	PP, glass coated	PP, glass coated	PP, glass coated	
Height (mm)	14.6	14.6	14.6	41.5	44	
Shape	U-shape, 7mm diameter	V-shape, 7mm diameter	Flat bottom, 7mm diameter	U-shape	V-shape, 7mm diameter	
TFVol. (µl)	300	220	370	1.2ml	2.4ml	
UsVol. (µl)	250	190	300	1ml	2ml	
	10 pieces	10 pieces	10 pieces	10 pieces	10 pieces	

12.5.1 Seal mats (Webseals) Block Cover, Silicone/PTFE, non sterile (for 08 05 2927, 08 05 2914, 08 05 2915, 08 05 2917 and 08 05 2916)



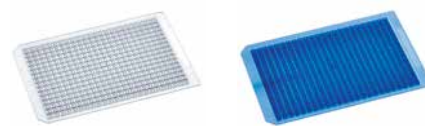
Art. No.	08 29 3213	08 29 2932	08 29 2939	08 29 2938	
Description	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2957	Sealmat Sealmat (BlockCover), slit: 08 29 2936	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2941	Sealmat (Block Cover) Sealmat (BlockCover), slit: 08 29 2940	
Colour	clear	blue	clear	blue	
Material	Silicone	Silicone/PTFE	Silicone	Silicone/PTFE	
Shape	round, dome base	round, dome base, for 7mm diameter	Square (Square Well)	square (Square Well)	
	5 pieces	5 pieces	5 pieces	5 pieces	

12.6. Standard 384 Block Systems, Microplate, glass coated, square opening (chromatography tested, non sterile)



Art. No.	08 05 2918	08 05 2919	
Description	MicroWell Microplate square opening 384 Positions	MicroWell Microplate square opening 384 Positions	Blocks, Mats and Tapes all solvents (incl. non-polar); for very sensitive applications; lowest sample concentrations; regulated labs; hydrophobic samples (Proteins); MSCERT level
Material	PP, glass coated	PP, glass coated	
Height (mm)	14.4	22	
Shape	Square (Square Well)	Square (Square Well)	
TFVol. (µl)	120	240	
UsVol. (µl)	90	180	
	10 pieces	6 pieces	

12.6.1 Seal mats (Webseals) Block Cover, non sterile (for 08 05 2918 and 08 05 2919)



Art. No.	08 29 2943	08 29 2942	
Description	Sealmat - Webseal(Block Cover) Sealmat (BlockCover), slit: 08 29 2950	Sealmat - Webseal (Block Cover) Sealmat (BlockCover), slit: 08 29 2944	
Colour	clear	blue	
Material	Silicone	Silicone/PTFE	
Shape	square (Square Well)	square (Square Well)	
	5 pieces	5 pieces	

12.7 96 Position Block Systems with Glass Inserts, sealed individually

- 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. They 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.

Blocks, Mats and Tapes all solvents (incl. non-polar); for very sensitive applications; lowest sample concentrations; regulated labs; hydrophobic samples (Proteins); MSCERT level

12.7.1 96 position Block Systems with Glass Inserts, sealed individually (chromatography tested, non sterile)



Art. No.	08 20 0897	08 20 0911	08 20 0905	08 20 0943
Description	Deep Well Block 96 position	Square Well Block 96 position	Micro-Tube-Rack-System 96 position	Microtiter-Plate 96 position
Material	PP	PP	PP	PP
Description	filled with 0.35ml Micro-Insert	filled with 1ml Micro-Insert	filled with 0.8ml Micro-Insert	filled with 0.1ml Micro-Insert
Material	clear glass	clear glass	clear glass	clear glass
Measure	42.5 x 6 mm	49.9 x 7.6 mm	40 x 7.6 mm	15.5 x 5.7 mm
Shape	conical bottom	rounded bottom	u-shap bottom	flat bottom
TFVol. (µl)	410	1200	1020	230
UsVol. (µl)	350	1000	800	200
Description	assembled with 9mm PE Cap, red, 4mm hole, Silicone white/PTFE red, 45° shore A, 1.9mm, slit	assembled with 9mm PE Cap, red, 4mm hole, Silicone white/PTFE red, 45° shore A, 1.9mm, slit	assembled with 8mm PE-Plug blue	assembled with 9mm PE Cap, red, 4mm hole, Silicone white/PTFE red, 45° shore A, 1.9mm, slit

1 pc.

12.8 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.

Art. No.	08 20 1171	08 20 1181	08 20 1182
Description	Square Well Block 96 position	Square Well Block 96 position	Square Well Block 96 position
Material	PP	PP	PP
Description	filled with 1ml Micro-Insert	filled with 1ml Micro-Insert	filled with 1ml Micro-Insert
Material	clear glass	clear glass	clear glass
Measure	45 x 7.6 mm	45 x 7.6 mm	45 x 7.6 mm
Shape	8mm top	8mm top	8mm top
Description	assembled with Sealmat Block Cover (welled plugs for easy penetration)	assembled with Sealmat Block Cover (welled plugs + slit for pipettes)	assembled with Sealmat Block Cover (solid plugs for sample storage)

1 pc.



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

13.1 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	ProFill 25mm HPLC Syringe Filter, PTFE, green, 0.20µm	ProFill 25mm HPLC Syringe Filter, PTFE, natural, 0.45µm	ProFill 25mm HPLC Syringe Filter, Regenerated Cellulose (RC), blue, 0.20µm	ProFill 25mm HPLC Syringe Filter, Regenerated Cellulose (RC), yellow, 0.45µm	ProFill 25mm HPLC Syringe Filter, Nylon (PA), bright blue, 0.20µm	ProFill 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: 3.7cm ² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm ² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm ² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm ² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm ² Luer Lock-Inlet (female) Luer Slip (male)	Sample Retention < 0.1ml Pressure Rating: 500kPa (= 5bar = 72psi) Effective Filter Area: 3.7cm ² 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, aggressive acids and bases or cryo liquids	for organic solutions, aggressive acids and bases or cryo liquids	for aqueous and organic media, not suitable for aggressive acids and bases	for aqueous and organic media, not suitable for aggressive 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 anhydride, Acetone, Aluminum chloride, Ammonia (1 M/6 M), Ammonium fluoride, 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 acetamide, 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%), Terpineol, Tetrachloroethane, Tetralin, 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, Cyclohexanone, Diethyl acetamide, Diethyleneglycol, Diethylether, 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.

13.2 17mm HPLC Syringe Filters

- 17mm HPLC Syringe Filters for small sample volumes.
- Sample Retention < 0.029ml.
- 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							

13.3 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	Art. No.	30 16 2094
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	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
	Hydrophilic					
	100 pcs. per PE-Bag, add. packed in a blue PP-Box					100 pcs. per PE bag, add. packed in a blue PP-Box

14. 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.
- Free of latex, free of plasticizers, free of PVC.
- Two-part, all-plastic construction made of a chemically resistant, inert polypropylene.
- No rubber plunger seals or silicone lubricants that may cause sample contamination.
- 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.



14.1 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

14.2 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

15. 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					

16. GC Capillary Connectors



02 17 0472	02 17 0473	For precise connections of Fused-Silica Capillary Columns in GC
Universal Capillary Connector for 2 columns	Universal Y-Capillary Connector for 3 columns	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	

17. 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.

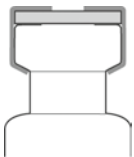


An inappropriate crimp can be recognized by:

Correct Crimp

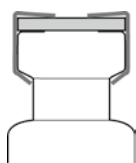
Flat cap surface

Flat septa surface



Tight fitting of the Aluminum edge

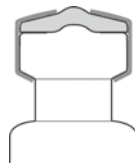
Plain + undeformed cap sides



Untight Aluminum edge

Adjust crimping pressure with the screw in the handle + Adjust crimping height with the hexogen key (s. below)

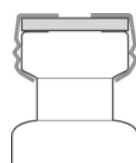
(undercrimped)



Upward bulge of the crimp cap

Adjust crimping pressure with the screw in the handle + Adjust crimping height with the hexogen key (s. below)

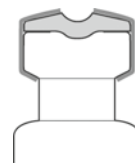
(overcrimped)



Deformation of the crimp cap sides

Adjust crimping height with the hexogen key (s. below)

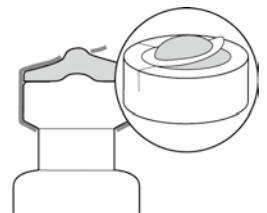
(overcrimped)



Convex looking liner

Adjust crimping pressure with the screw in the handle

(overcrimped)

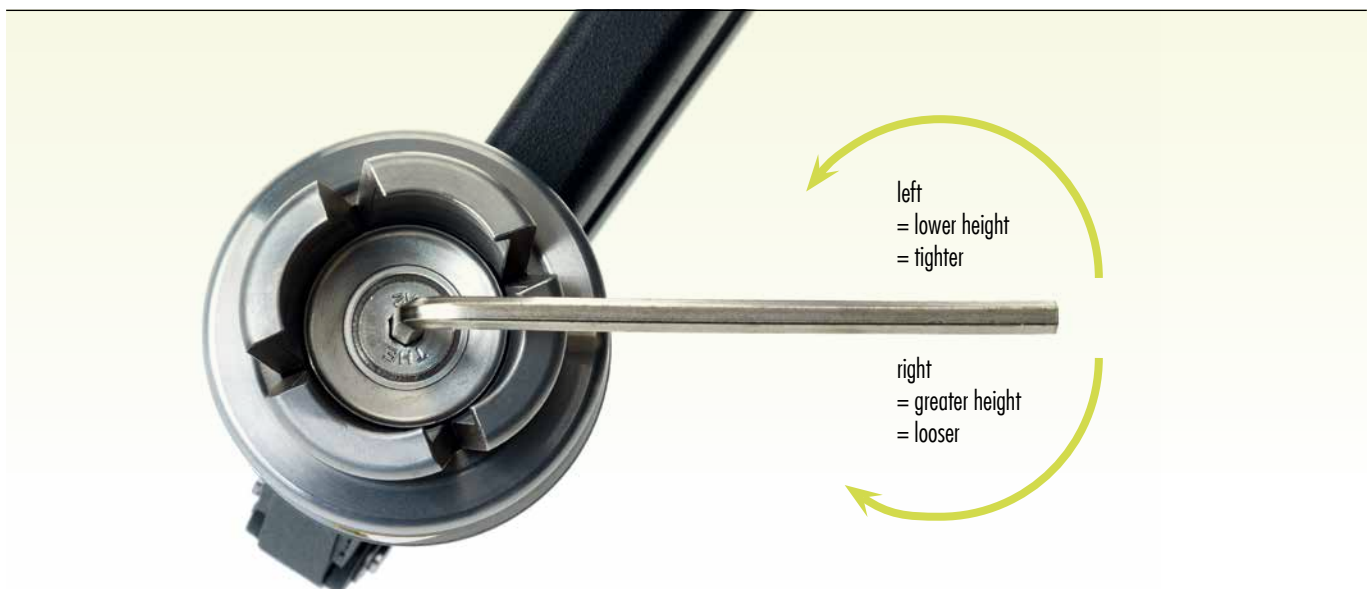


Rounded edges/Upward bulge of the Cap/Liner

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.



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

17.1 Manual Crimping Tools

- Crimping tools provide a reproducible, secure vial closure
- Easy and convenient handling
- High quality construction for durability and long life
- Painted, plated and coated for maximum corrosion resistance
- Textured handle surface provides an assured grip



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	Special sizes and Crimpers for Pump Spray Closures on request!
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	
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").

17.2 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					

17.3 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.
- As no lubricant is used and the handles are from non-lacquered stainless steel, the crimper can be used in clean room environments without limitation.



17.3.1 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		

Other sizes are available!

17.3.2 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		

Other sizes are available!



17.4 Pneumatic Airgo Crimper

- Completely new designed ergonomic hand-held tool with easy push button for a completely joint-friendly work position
- Unique ultra slim design of the crimping jaws is perfect for in-tray crimping of the vial
- Slim jaw shape allows for the first time an optical control of the crimping process
- Combines convenient large sample series processing with cleanroom usability
- The weight of the new pneumatic hand-held tool generation is reduced by 50%
- The optional balancer helps to save space on the lab bench and keeps the crimper clean and ready to use in reach

00 00 3080 11mm AIRGO Crimper High Pressure min. 5 Bar/72,5 PSI stable working pressure	00 00 3081 11mm AIRGO Crimper Low Pressure min. 3 Bar/ 43,5PSI stable working pressure	00 00 0120 Hanging device with balancer
1 pc. per case		1. pc. per carton



17.5 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 17.5.1 + 17.5.2).
- Adjustable, constant and reproducible crimping pressure.
- CE mark of conformity.
- 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 1/4 " 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.



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



17.5.1 Crimping Heads for Pneumatic Hand-held Crimping Tool

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

For professional advice in terms of Crimp Heads for Flip Top/Flip Off or Flip Tear Up Seals please contact our Customer Service team.

17.5.2 Decapping Heads for Pneumatic Hand-held Crimping Tool

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

Special sizes upon request!

17.6 Electronic Crimpers and Decappers

- Electronic Crimpers and Decappers provide secure, reproducible crimps and quick and easy removal of aluminum seals with the push of a button
- Ergonomic design and push button operation eliminates wrist strain
- Built in long life lithium ion rechargeable battery with low battery indicator
- Crimp force sensing assures consistent proper sealing
- Universal 100V–240V charger includes plug adaptors for most power outlets
- Crimpers and decappers can be operated while plugged in and recharging
- Vials can be crimped or decapped while they remain in most standard removable sample trays
- Adjustable crimp settings for compatibility with most vial/septum/seal combinations



17.6.1 Electronic Crimping Tools

08 00 3215	11 00 2534	13 00 3216	20 00 2506
8mm Electronic Crimper, 110 - 240V	11mm Electronic Crimper, 110 - 240V	13mm Electronic Crimper, 110 - 240V	20mm Electronic Crimper, 110 - 240V
1 pc. per carton			

17.6.2 Electronic Decapping Tools

11 00 2594	13 00 3218	20 00 3135	00 00 3217
11mm Electronic Decapper, 110 - 240V	13mm Electronic Decapper, 110 - 240V	20mm Electronic Decapper, 110 - 240V	Replacement Battery, 6.4V Lithium Ion for electronic Crimpers and Decapper,
1 pc. per carton			1 pc. per carton

17.6.3 Replacement Battery for Electronic Crimpers and Decappers

17.7 Programmable Electronic High Power Crimp Station

- Fully programmable station with quick exchange crimp and de-crimp heads
- High power, perfect for magnetic steel caps
- Adjustable crimp settings for compatibility with most vial/septum/seal combinations including aluminum, steel and bi-metal seals
- Exchangeable crimp and decapping heads can be removed or installed in seconds
- For each head, a set of up to 10 adjustment programs is available and can be saved
- A reliable crimp is guaranteed when programmed, with various closures, septa thickness and vials
- Crimp-force sensing automatically determines when a proper seal has been formed and opens the jaws to release the vial



17.7.1 Programmable Electronic High Power Crimp Station (basic tool)

00 00 3214
Programmable electronic high power crimp including the basis high power crimper and the 12 volt DC supply with the power cord. (Accessory is not included)
1 pc. per carton

17.7.2 11mm and 20mm Programmable Electronic High Power Crimp Station

11 00 3153	20 00 2549
Programmable electronic high power crimp station with variable accessory base, external power supply and two exchangeable jaw sets (11mm crimp and 11mm decrimp), 110 - 240V	Programmable electronic high power crimp station with variable accessory base, external power supply and two exchangeable jaw sets (20mm crimp and 20mm decrimp), 110 - 240V
1 pc. per carton	

17.7.3 Crimping Heads for Programmable Electronic High Power Crimp Station

08 06 3200	11 06 3202	13 06 3204	20 06 3206
Crimping Head for 8mm Crimp Caps	Crimping Head for 11mm Crimp Caps	Crimping Head for 13mm Crimp Caps	Crimping Head for 20mm Crimp Caps
1 pc. per carton			

17.7.4 Decapping Heads for Programmable Electronic High Power Crimp Station

08 07 3201	11 07 3203	13 07 3205	20 07 3207
Decapping Head for 8mm Aluminum Caps	Decapping Head for 11mm Aluminum Caps	Decapping Head for 13mm Aluminum Caps	Decapping Head for 20mm Aluminum Caps
1 pc. per carton			

Further crimping and decapping heads upon request!

18. Vial Racks and Storage Boxes

18.1 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 pc. 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 pcs. 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

18.2 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.



18.2.1 PP Storage Boxes for 1.5ml Sample Vials



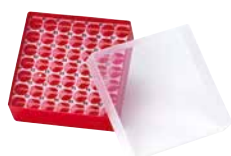
Art. No.	Blue 12 21 2420	Orange 12 21 2421	Pink 12 21 2422	Yellow 12 21 2423	Green 12 21 2424	Transparent 12 21 2425
Description	PP Storage Box for 1.5ml (1.8ml, 2ml) vials or 2ml Shell Vials, with cover, (130x130x45mm), 81 cavities with alphanumeric coding of all 4 margins as well as the cavities at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



Art. No.	Blue 12 21 3138	Orange 12 21 3139	Pink 12 21 2590	Yellow 12 21 3140	Green 12 21 2589	Transparent 12 21 3141
Description	PP Storage Box for 1.5ml (1.8ml, 2ml) vials or 2ml Shell Vials, with cover, (67 x 67 x 45mm), 16 cavities 5 pcs. per PE-Bag					

Minimum order quantity: 5 pieces per colour

18.2.2 PP Storage Boxes for 4ml Sample 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	

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



18.2.4 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	

19. 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.



19.1 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, 1 st hydrol. class	1.5ml Screw Neck Vial, 8-425, 32 x 11.6mm, amber glass, 1 st hydrol. class	4ml Screw Neck Vial, 13-425, 45 x 14.7mm, clear glass, 1 st hydrol. class	4ml Screw Neck Vial, 13-425, 45 x 14.7mm, amber glass, 1 st hydrol. class	8ml Screw Neck Vial, 15-425, 61 x 16.6mm, clear/amber glass, 1 st hydrol. class	12ml Screw Neck Vial, 15-425, 66 x 18.5mm, clear/amber glass, 1 st 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



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, 1 st hydrol. class	20ml Screw Neck Vial, 20-400, 86 x 22.7mm, clear glass, 1 st hydrol. class	20ml Screw Neck Vial, 24-400, 57 x 27.5mm, clear/amber glass, 1 st hydrol. class	30ml Screw Neck Vial, 24-400, 72.5 x 27.5mm, clear/amber glass, 1 st hydrol. class	40ml Screw Neck Vial, 24-400, 95 x 27.5mm, clear/amber glass, 1 st hydrol. class	60ml Screw Neck Vial, 24-400, 140 x 27.5mm, clear/amber glass, 1 st 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)

19.2 PP Screw Seals for Storage Vials

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

19.2.1 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			

19.2.2 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			

19.2.3 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						

19.2.4 PP Screw Seals ND18 for 18 09 1704



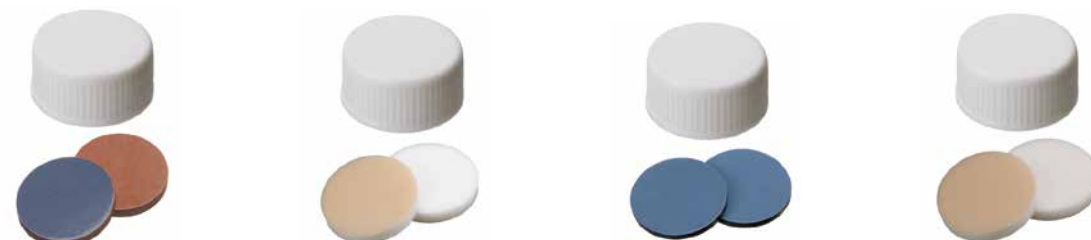
Art. No.	18 15 1387	18 15 1132	18 15 2069
Description Cap	PP Screw Cap black, closed top		
Septa Material	Butyl red/PTFE grey	Silicone blue transparent/PTFE white	Silicone white/PTFE red
Durometer	55° shore A	45° shore A	55° shore A
Thickness	1.6mm	1.7mm	1.5mm
100 pcs. per PE-Bag			

19.2.5 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			

19.2.6 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			
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				

20. 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.



20.1 Special Vials



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

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

20.2 Special Seals



Art. No.	13 03 1381	13 03 1382	13 03 0307	13 03 0308	22 15 1824	22 15 1869	40 15 0674
Description Cap	13mm Aluminum Cap clear lacquered, 6mm centre hole	13mm Aluminum Cap clear lacquered, complete tear off	13mm Aluminum Cap clear lacquered, 6mm centre hole	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, 8.0mm centre hole	40mm Polypropylene Screw Cap black, closed top
Septa Material	Butyl red/PTFE grey	Butyl red/PTFE grey	Pharma-Fix-Septa (Butyl/PTFE)	Pharma-Fix-Septa (Butyl/PTFE)	Silicone blue transparent/PTFE white, Y-slitted	Silicone blue transparent/PTFE white, Y-slitted	PTFE virginal
Durometer	55° shore A	55° shore A	50° shore A	50° shore A	45° shore A	45° shore A	53° shore D
Thickness	2.0mm	2.0mm	2.0mm	2.0mm	1.3mm	1.3mm	0.5mm
100 pcs. per PE-Bag							

Further Special Seals may be available upon request!

20.3 Special Septa

20.3.1 Septa for Schott Screw Caps



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	16.8mm Septa, Silicone cream/PTFE beige	23.4mm Septa, Silicone cream/PTFE beige	30.3mm Septa, Silicone cream/PTFE beige	43.2mm Septa, Silicone cream/PTFE beige	43.2mm Septa, Butyl red/PTFE grey
	<i>for Schott Screw Cap GL14</i>	<i>for Schott Screw Cap GL18</i>	<i>for Schott Screw Cap GL25</i>	<i>for Schott Screw Cap GL32</i>	<i>for Schott Screw Cap GL45</i>	<i>for Schott Screw Cap GL45</i>
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	

Further Septa in various materials and diameters upon request!

20.3.2 Septa 13mm



Art. No.	13 02 1380	13 02 0261
Septa Material	13mm Septa, Butyl red/PTFE grey	13mm Septa, Pharma-Fix-Septa (Butyl/PTFE)
Durometer	55° shore A	50° shore A
Thickness	2.0mm	2.0mm
1000 pcs. per PE-Bag		

We do a lot of special production runs for all of the products we offer. Should you have a special request, please do not hesitate to contact us any time.



21. Special Services

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 analysis) 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.

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, re closable 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 16-19)
- Short Thread Vials/Seals ND9 (Chapter 3, pages 20-26)
- Screw Neck Vials/Seals ND10 (Chapter 4, page 27)
- Crimp Neck Vials/Seals ND11 (Chapter 5, pages 28-31)
- Snap Ring Vials/Seals ND11 (Chapter 6, pages 32-33)
- Screw Neck Vials/Seals ND13 (Chapter 7, pages 34-35)
- Shell Vials ND8, ND11 + ND15 with PE-Plugs (Chapter 8, pages 36-37)
- 20ml Headspace Vials/Seals ND20 + ND18 (Chapter 9, pages 38-46)

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.

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

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.

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.

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.



Product Names, Abbreviations, Explanations, Structure Article Description

A) Product and Brand Names

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).

B) Explanations

Cleanroom packed products

There are different standards of clean room classes globally established. When stated, our products are packed in clean rooms of the class ISO 7 or ISO 8 (acc. to ISO 14644-1) which is identical to the class 10.000 or 100K (acc. to US FED STD 209E) for particles $\geq 0.5 \mu\text{m}$. Cleanroom classes represent a hygienic standard often found in the pharmaceutical industry. These special rooms have certified conditions for maximum particles per ft^3 or m^3 air. To have a comparison: The environment in a normal room contains billions of particles. The Cleanrooms 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 environment.

Seal

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

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 GmbH for which La-Pha-Pack offer suitable Glass Micro-Inserts.

Durometer

Durometer is the hardness of a liner and is expressed in $^\circ$ 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)

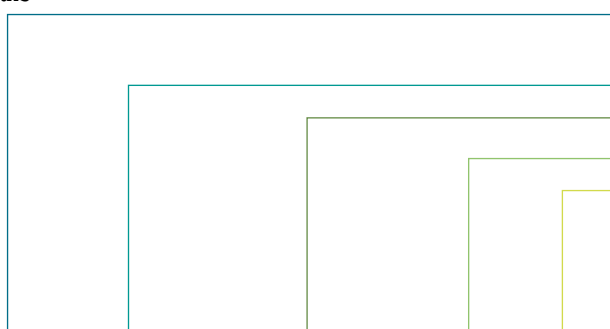
Untreated PTFE

C) Abbreviations

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

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)

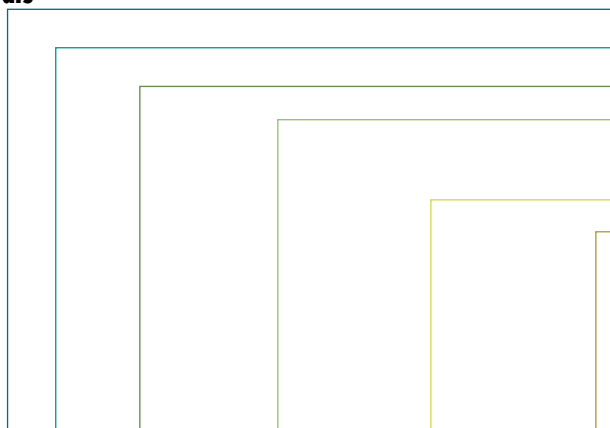
Glass material

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)

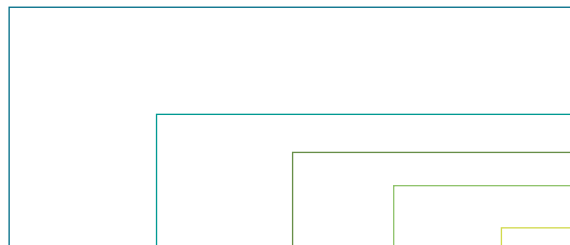
Additional characteristics

Hardness (of the liner)

Thickness (of the liner)

e.g.: **1 mm 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.

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

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Autosampler Compatibility Chart

		Crimp Neck ND8 08 09 0405 08 09 0406	Crimp Neck ND8 08 09 0284	Crimp Neck ND8 08 09 0845 08 09 0953	Crimp Neck ND8 08 09 0276 08 09 0606	Crimp Neck ND8 08 09 0258 08 09 0305	Crimp Neck ND8 08 09 1080	Screw Neck ND8 11 09 0210 11 09 0259 11 09 0382 11 09 0419	Screw Neck ND8 11 09 0417	Short Thread ND9 11 09 0500 11 09 0519 11 09 0520 11 09 0620 11 09 0999 11 09 1241 11 09 1242 11 09 1957 11 09 2275 11 09 2357 11 09 2746 11 09 2747 11 09 2748 11 09 2656 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1216 11 19 1516 11 19 1706	Screw Neck ND10 10 09 0743 10 09 1196 10 09 1197	Crimp Neck ND11 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619	Crimp Neck ND11 11 09 0486	Crimp Neck ND11 11 09 0415	Crimp Neck ND11 11 09 0831	
		chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 2 page 16	chapter 2 page 16	chapter 3 page 20,21	chapter 4 page 27	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 20 page 66
Agilent	1050									X						
Agilent	1050 (34 Pos. Tray)				X											
Agilent	1090									X						
Agilent	1090 (34 Pos. Tray)				X											
Agilent	1100									X						
Agilent	1200									X						
Agilent	1260 Infinity									X						
Agilent	1290 Infinity									X						
Agilent	G1888A									X						
Agilent	7673A				X					X						
Agilent	7683A				X		X			X						
Agilent	HS7694															
Agilent	7695A															
Agilent	79855(A)									X						
Agilent	5880									X						
Agilent	5890									X						
Agilent	6850 (27 Pos. Tray)									X						
Agilent	6850 (22 Pos. Tray)									X						
Agilent	6890									X						
Agilent	CTC HTS+HTC PAL	X			X	X				X						
Agilent	CTC GC PAL	X			X	X				X						
Agilent	CTC Combi PAL															
Agilent	Tekmar SOLATEk72															
Agilent	Archon Plug + Trap															
Agilent	AQUATEk 70															
Agilent	7693A							X					X			
Agilent	HS7694															
Agilent	7697A															
Analytik Jena	multi N/C 3000 (TOC)															
Antec Leyden	Alexys							X		X			X			
Antec Leyden	AS 100							X		X	X	X	X			
Antek	736 Unisampler							X		X	X	X	X			
Antek	738							X		X	X	X	X			
Atas	GL Focus							X		X			X			
Beckman	501				X			X		X	X	X	X			
Beckman	502/502e				X			X		X	X	X	X			
Beckman	504	X				X										
Beckman	507/507e				X			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	
Beckman	Triathlon, LSV Tray				X											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			X		X	
Carlo Erba	A200LC	X			X	X		X	X	X			X		X	
Carlo Erba	AS200S	X			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	
Carlo Erba	AS800, 60 vial tray		X	X	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	X		X		
CTC (LEAP)	LC PAL (216 Pos.)							X	X	X	X	X				
CTC (LEAP)	HTX PAL, HTC PAL, HTS PAL (200 Pos. Tray)	X						X	X	X	X	X			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 Liquid 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				
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			

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Autosampler Compatibility Chart

		Snap Ring ND11	Screw Neck ND13	Shell Vials	Shell Vials	Shell Vials	Shell Vials	Shell Vials	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Screw Neck ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 09 2786 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 20 09 3175	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		
		chapter 6 page 32	chapter 7 page 34	chapter 8 page 36	chapter 8 page 36	chapter 8 page 37	chapter 8 page 36	chapter 9 page 39, 41	chapter 9 page 39, 40	chapter 9 p. 39, 41, 42	chapter 9 page 39, 40	chapter 9 page 39-41	chapter 9 page 39, 41	chapter 9 page 39, 41	chapter 11 page 48		
Agilent	1050	X															
Agilent	1050 (34 Pos. Tray)																
Agilent	1090	X															
Agilent	1090 (34 Pos. Tray)																
Agilent	1100	X															
Agilent	1200	X															
Agilent	1260 Infinity																
Agilent	1290 Infinity																
Agilent	G1888A		X								X						
Agilent	7673A																
Agilent	7683A																
Agilent	HS7694		X								X						
Agilent	7695A																
Agilent	79855(A)	X														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						
Analytik Jena	multi N/C 3000 (TOC)											X				X	
Antec Leyden	Alexys	X															
Antec Leyden	AS 100	X															
Antek	736 Unisampler	X															
Antek	738	X															
Atas	GL Focus	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					X											
Carlo Erba	A200LC	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)									X							
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 Liquid 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					
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															

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Autosampler Compatibility Chart

		Crimp Neck ND8 08 09 0405 08 09 0406	Crimp Neck ND8 08 09 0284	Crimp Neck ND8 08 09 0845 08 09 0953	Crimp Neck ND8 08 09 0276 08 09 0606	Crimp Neck ND8 08 09 0258 08 09 0305	Crimp Neck ND8 08 09 1080	Screw Neck ND8 11 09 0210 11 09 0259 11 09 0382 11 09 0419	Screw Neck ND8 11 09 0417	Short Thread ND9 11 09 0500 11 09 0519 11 09 0520 11 09 0620 11 09 0999 11 09 1241 11 09 1242 11 09 1957 11 09 2275 11 09 2357 11 09 2746 11 09 2747 11 09 2748 11 09 2656 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1216 11 19 1516 11 19 1706	Screw Neck ND10 10 09 0743 10 09 1196 10 09 1197	Crimp Neck ND11 11 09 0356 11 09 0476 11 09 0477 11 09 0921 11 09 1956 11 09 0619	Crimp Neck ND11 11 09 0486	Crimp Neck ND11 11 09 0415	Crimp Neck ND11 11 09 0831	
		chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 2 page 16	chapter 2 page 16	chapter 3 page 20,21	chapter 4 page 27	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 20 page 66
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					
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															
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		X			X	
Fisons	A200LC	X			X	X		X	X	X		X			X	
Fisons	AS200S	X			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
Fisons	AS800, 60 vial tray		X	X	X			X		X		X				
Fisons	HS250															
Fisons	HS500															
Fisons	HS800															
Fisons	HS850															
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 (only f. 221XL)	X				X						
Gilson	223	X				X										
Gilson	231XL/232XL/233XL	X			X (only 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									
IMT GmbH	VSP4000					X										X
IMT GmbH	PTA3000															
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			X	
Knauer	Smartline K-3950							X		X	X	X				
Knauer	PLATINblue AS-1							X		X	X	X				
LDC	713-60		X		X											
LDC	Marathon							X	X	X		X			X	
LDC	Promis							X	X	X		X			X	
LEAP	pls. see 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				

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Autosampler Compatibility Chart

		Snap Ring ND11	Screw Neck ND13	Shell Vials	Shell Vials	Shell Vials	Shell Vials	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Screw Neck ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 09 2786 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 15 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 20 09 3175	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	
		chapter 6 page 32	chapter 7 page 34	chapter 8 page 36	chapter 8 page 36	chapter 8 page 37	chapter 8 page 36	chapter 9 page 39, 41	chapter 9 page 39, 40	chapter 9 p. 39, 41, 42	chapter 9 page 39, 40	chapter 9 page 39-41	chapter 9 page 39, 41	chapter 9 page 39, 41	chapter 11 page 48	
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
Finnigan	A200S															
Fisons	AS100	X			X											
Fisons	AS200				X											
Fisons	A200LC	X			X											
Fisons	AS200S				X											
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				
GE Instruments	Sievers® 900															X
Gerstel	MPS2											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															
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														
LDC	713-60															
LDC	Marathon	X														
LDC	Promis	X														
LEAP	pls. see 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															

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Autosampler Compatibility Chart

		Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Screw Neck ND8	Screw Neck ND8	Short Thread ND9	Screw Neck ND10	Crimp Neck ND11	Crimp Neck ND11	Crimp Neck ND11	Crimp Neck 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 0620 11 09 0999 11 09 1241 11 09 1242 11 09 1957 11 09 2275 11 09 2357 11 09 2746 11 09 2747 11 09 2748 11 09 2656 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1216 11 19 1516 11 19 1706	10 09 0743 10 09 1196 10 09 1197	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
		chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 2 page 16	chapter 2 page 16	chapter 3 page 20,21	chapter 4 page 27	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 20 page 66
PerkinElmer	Series 200, 205 vial tray				X						X	X			
PerkinElmer	Series 200, 225 vial tray				X						X	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					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 Labora- tories	PL-AS RT							X		X	X	X			
Quma Elektronik Sedere	QHSS-40									X		X			
SGE	LS-3200	X													
Shimadzu	AOC-5000	X				X									X
Shimadzu	AOC-14/1400				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 (Promi- nence) 70 vial tray				X			X	X	X	X	X			X
Shimadzu	SIL-20A/Sil-20AC (Promi- nence) 175 vial tray														
Shimadzu	SIL-20A/Sil-20AC (Promi- nence) 50 vial tray														
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			
Shimadzu	SIL-20AXR/SIL-20ACXR (Prominence) 175 (1-mL vials), 70 (1.5-mL vials), 50 (4-mL vials)							X		X		X			
Shimadzu	SIL-30AC(Nexera) 175 (1-mL vials), 105 (1.5-mL vials), 50 (4-mL vials)							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														

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Autosampler Compatibility Chart

		Snap Ring ND11	Screw Neck ND13	Shell Vials	Shell Vials	Shell Vials	Shell Vials	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Screw Neck ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 09 2786 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 0822 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 20 09 3175	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
		chapter 6 page 32	chapter 7 page 34	chapter 8 page 36	chapter 8 page 36	chapter 8 page 37	chapter 8 page 36	chapter 9 page 39, 41	chapter 9 page 39, 40	chapter 9 p. 39, 41, 42	chapter 9 page 39, 40	chapter 9 page 39-41	chapter 9 page 39, 41	chapter 9 page 39, 41	chapter 11 page 48
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** (not suitable for TurboMatrix™ 110)		X		X* (for TurboMatrix™ 16, 40, 110 produced after 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		X												
Polymer Labora- tories	PL-AS RT	X	X												
Quma Elektronik Sedere	QHSS-40										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									
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	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									
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														
Shimadzu	SIL-20AXR/SIL-20ACXR (Prominence) 175 (1-mL vials), 70 (1.5-mL vials), 50 (4-mL vials)	X	X		X		X								
Shimadzu	SIL-30AC(Nexera) 175 (1-mL vials), 105 (1.5-mL vials), 50 (4-mL vials)	X	X		X		X								
Sievers (GE Instruments)	Sievers® 900														X
Spark	Marathon Basic, Standard 96 Pos. Tray	X													
Spark	Marathon Basic Präp King Size 48 Pos. Tray							X							

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Autosampler Compatibility Chart

		Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Screw Neck ND8	Screw Neck ND8	Short Thread ND9	Screw Neck ND10	Crimp Neck ND11	Crimp Neck ND11	Crimp Neck ND11	Crimp Neck 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 0620 11 09 0999 11 09 1241 11 09 1242 11 09 1957 11 09 2275 11 09 2357 11 09 2746 11 09 2747 11 09 2748 11 09 2656 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1216 11 19 1516 11 19 1706	10 09 0743 10 09 1196 10 09 1197	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
		chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 2 page 16	chapter 2 page 16	chapter 3 page 20,21	chapter 4 page 27	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 20 page 66
Spark	Midas, Standard 84 Pos. Tray							X	X	X		X			X
Spark	Midas, Large Capacity 96 Pos. Tray							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			X
Spark	Triathlon, Standard 96 Tray							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	Integrity									X		X			
Spark	Prospekt 2									X		X			
Spark	Reliance/Symbiosis Pharma									X		X			
Spark	Dried Blood Spot (DBS)							X		X		X			
Spark	Integrity							X		X		X			
Spark	Integrity 108 Pos. (2ml) 2 x Plates , IntegrityPlus 2 x 108 Pos. (2ml) 4 x Plates							X		X		X			
Spark	Optimas							X		X		X			
Spark	Optimas 96 Pos. (2ml) 24 Pos. (10ml)							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
Spectra-Physics	SpectraSYSTEM AS 3500	X		X	X	X		X		X		X			X
Sykam	S 5200									X					
Teledyne Tekmar	7000/7000HT/7050									X					
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			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
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
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			X
Thermo Scientific	Dionex AS-AP							X		X	X	X			
Thermo Scientific	Dionex UltiMate WPS-3000	X		X				X	X	X	X	X			
Thermo Scientific	Dionex AS 40														
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
Thermo Scientific	TriPlus HS														
Thermo Scientific	TriPlus SPME														
Thermo Scientific	TriPlus RSH			X	X			X		X		X			
Thermo Scientific	TriPlus 300														
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		X			
Thermo Scientific	Trace 1300 Series							X		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
Varian	ProStar 400, King Size 48 Pos. Tray														
Varian	ProStar 410, Standard 84 Pos. Tray							X	X	X	X	X			X
Varian	ProStar 410, Large Capacity 96 Pos. Tray							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

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Autosampler Compatibility Chart

		Snap Ring ND11	Screw Neck ND13	Shell Vials	Shell Vials	Shell Vials	Shell Vials	Shell Vials	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Headspace ND20 (ND18)	Screw Neck ND24 (EPA)
		11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 09 2786 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 0922 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 20 09 3175	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
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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)	X															
Spark	Integrity																
Spark	Integrity 108 Pos. (2ml) 2 x Plates, IntegrityPlus 2 x 108 Pos. (2ml) 4 x Plates	X															
Spark	Optimas																
Spark	Optimas 96 Pos. (2ml) 24 Pos. (10ml)	X										X					
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															
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	Dionex AS-AP	X						X									
Thermo Scientific	Dionex UltiMate WPS-3000	X	X					X									
Thermo Scientific	Dionex AS 40		X														
Thermo Scientific	HS250						X		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	TriPlus RSH	X							X			X					
Thermo Scientific	TriPlus 300											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						
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															
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								X							
Varian	ProStar 410, Large Volume 24 Pos. Tray									X							
Varian	ProStar 420, Standard 96 Pos. Tray	X				X											

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Autosampler Compatibility Chart

		Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Crimp Neck ND8	Screw Neck ND8	Screw Neck ND8	Short Thread ND9	Screw Neck ND10	Crimp Neck ND11	Crimp Neck ND11	Crimp Neck ND11	Crimp Neck 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 0620 11 09 0999 11 09 1241 11 09 1242 11 09 1957 11 09 2275 11 09 2357 11 09 2746 11 09 2747 11 09 2748 11 09 2656 11 14 1189 11 14 1265 11 14 1655 11 19 0932 11 19 1021 11 19 1205 11 19 1216 11 19 1516 11 19 1706	10 09 0743 10 09 1196 10 09 1197	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	
		chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 1 page 14	chapter 2 page 16	chapter 2 page 16	chapter 3 page 20,21	chapter 4 page 27	chapter 5 page 28	chapter 5 page 28	chapter 5 page 28	chapter 20 page 66	
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		X				
Varian	8400 (100 Pos.)							X	X	X		X				
Varian	8410-Autoinjector (10 x 2ml; 6 x 5ml; 5 x 10ml)							X	X	X		X				
Varian	8100							X	X	X		X				
Varian	8200							X	X	X	X	X				
Varian	CP-910, 911, 912							X	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							X		X						
Varian	CP-9060															
Varian	CP-9010							X		X		X				
Varian	920-LC/940-LC							X								
Viscotek	Vortex™							X								
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	5210 (Chromaster) 195 Pos (1 mL), 120 Pos 1.5 mL (Standard), 72 Pos. (4 mL), 2 x MTP (96,384)							X		X		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									X	X	X				
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 (not for 11 09 0620)	X	X				

X*: for 24 Position Plate

La-Pha-Pack

Autosampler Compatibility Chart

		Snap Ring ND11 11 09 0627 11 09 0644 11 09 0645 11 09 2276 11 09 2353 11 09 2786 11 14 1190 11 14 1266 11 14 1656 11 14 1695 11 19 0933 11 19 1022 11 19 1217 11 19 1707	Screw Neck ND13 13 09 0222 13 09 0280 13 09 1335 13 09 1336	Shell Vials 08 14 0641	Shell Vials 08 14 1168 08 14 1169 08 14 0513 08 14 0595	Shell Vials 11 14 0544 11 14 0545	Shell Vials 15 14 0548 15 14 0562	Headspace ND20 (ND18) 20 09 0342	Headspace ND20 (ND18) 20 09 1405 20 09 1691	Headspace ND20 (ND18) 18 09 0864 20 09 0297 20 09 0440 20 09 1223	Headspace ND20 (ND18) 20 09 0795 20 09 0796 20 09 3175	Headspace ND20 (ND18) 18 09 1306 18 09 1307 18 09 1310 18 09 1311 20 09 0873 20 09 1222 20 09 1690	Headspace ND20 (ND18) 20 09 0801	Headspace ND20 (ND18) 20 09 0802	Screw Neck 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
		chapter 6 page 32	chapter 7 page 34	chapter 8 page 36	chapter 8 page 36	chapter 8 page 37	chapter 8 page 36	chapter 9 page 39, 41	chapter 9 page 39, 40	chapter 9 p. 39, 41, 42	chapter 9 page 39, 40	chapter 9 page 39-41	chapter 9 page 39, 41	chapter 9 page 39, 41	chapter 11 page 48
Varian	ProStar 420, LSV 72 Pos. Tray		X												
Varian	ProStar 420, SuperLSV 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.)														
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)								X						
Varian	GC PAL (200 pos. Tray)								X						
Varian	COMBI PAL (98 Pos. Tray)								X						
Varian	GC PAL (98 Pos. Tray)								X						
Varian	COMBI PAL SPME mode (98 Pos. Tray)								X						
Varian	COMBI PAL (32 Pos. Tray)								X			X			
Varian	GC PAL (32 Pos. Tray)								X			X			
Varian	COMBI PAL SPME mode (32 Pos. Tray)								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	5210 (Chromaster) 195 Pos (1 mL), 120 Pos 1.5 mL (Standard), 72 Pos. (4 mL), 2 x MTP (96,384)	X	X		X		X								
VWR(Merck®)/Hitachi	AS 6000	X													
Waters®	ACQUITY™ UPLC Systeme														X (for 24 Position Plate)
Waters®	Wisp 48 position														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													

According to our information our compatibility chart was correct when it was printed. Please note that later changes in manufacturers' specifications may lead to different compatibilities.

Chemical Resistance Reference Chart

This chart provides a guideline for the chemical resistance of materials used for vials and closures. Because so many factors can affect chemical resistance, it may be necessary to test your product under your actual conditions of use.

Plastic Resin Code	Description	Appearance	Temp. MAX °C	Temp. MIN °C	Autoclavable	Dry Heat	Gamma	Microwavable	Ethylene Oxide	Analytical Purity	Fragmentation*	Hardness†	Resealability‡
HDPE	High-density polyethylene	Opaque	120	-35	No	No	Yes	Yes	Yes	Method Dependent	Medium	Hard	No resealability
LDPE	Low-density polyethylene	Translucent	100	-40	No	No	Yes	Yes	Yes	Method Dependent	Low	Medium hard	No resealability
TPX	Polymethylpentene	Transparent	175	0	Yes	No	Yes	Yes	Yes	Method Dependent	Low	Very hard	N/A
PP	Polypropylene	Translucent	135	-20	Yes	No	No	Yes	Yes	Method Dependent	Low	Medium hard	No resealability
PTFE	Polytetrafluorethylene	White	260	-200	Yes	Yes	Yes	Yes	Yes	Very high	Low	Very hard (Very thin)	No resealability
RR	RedRubber/PTFE	Red/beige	110	-30	No	No	No	No	No	Medium	Medium	Medium hard	Medium
Butyl	Grey Butyl	Opaque grey	125	-20	Yes	No	Yes	Yes	Yes	Method Dependent	Low to medium	Soft to medium	Highly resealable
T/S	Silicone/PTFE	White/red	200	-60	Yes	Yes	Yes	Yes	Yes	High	Low to medium	Soft	Highly resealable
T/S/T	PTFE/Silicone/PTFE	Red/white/red	200	-60	Yes	Yes	Yes	Yes	Yes	High	Very low	Medium hard	Good
	Viton®	Black	230	-30	Yes	Yes	Yes	Yes	Yes	Medium	Medium	Hard	Low to Medium

Key to Chart

E – No damage after 30 days of constant exposure.
 G – Little or no damage after 30 days of constant exposure.
 F – Some effect after 7 days of constant exposure.
 N – Immediate damage may occur. Not recommended for continuous use.
 S – Surface.

* Due to hardness and molecular structure (coring)
 † Needle penetration
 ‡ In case of multiple injections

The first letter of each pair applies to minimum temperature conditions; the second to maximum temperature conditions.

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
1,2-Dichloroethane	NN	NN	NN	EE	NN	EE
1,2,4-Trichlorobenzene	NN	NN	NN	EE	GF	EE
1,4-Dioxane	GF	GG	GF	EE	GF	EE
2,2,4-Trimethylpentane	FN	FN	FN	EE	FN	EE
2,4-Dichlorophenol	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
Acetaldehyde	GN	GF	GN	EE	GN	EE
Acetamide, Sat.	EE	EE	EE	EE	EE	EE
Acetic Acid, 5%	EE	EE	EE	EE	EE	EE
Acetic Acid, 50%	EE	EE	EE	EE	EE	EE
Acetic Acid, Glacial	EG	EE	EG	EE	EG	EE
Acetic Anhydride	NN	FF	GF	EE	EG	EE
Acetone	NN	NN	EG	EE	EE	EE
Acetonitrile	EE	EE	FN	EE	FN	EE
Acetophenone	NN	FF	FF	EE	GN	EE
Acrylonitrile	EE	EE	FN	EE	FN	EE
Adipic Acid	EG	EE	EE	EE	EE	EE
Allyl Alcohol	EE	EE	EE	EE	EG	EE
Aluminum Hydroxide	EG	EE	EG	EE	EG	SS
Amino Acids	EE	EE	EE	EE	EE	EE
Ammonia	EE	EE	EE	EE	EE	SS
Ammonia, 25%	EE	EE	EE	EE	EE	SS
Ammonium Glycolate	EG	EE	EG	EE	EG	EE
Ammonium Hydroxide, 30%	EG	EE	EG	EE	EG	SS
Ammonium Hydroxide, 5%	EE	EE	EE	EE	EE	SS
Ammonium Oxalate	EG	EE	EG	EE	EG	EE
Ammonium Salts	EE	EE	EE	EE	EE	EE
Amyl Alcohol	EE	EE	EE	EE	EE	EE
Amyl Chloride	NN	FN	NN	EE	NN	EE
Aniline	EG	EG	GF	EE	GF	EE
Aqua Regia	NN	NN	NN	EE	NN	SS
Arsenic Acid	GF	EG	EE	EE	EE	EE
Benzaldehyde	EG	GN	EG	EE	EG	EE
Benzenamine	EG	EG	GF	EE	GF	EE

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Benzene	NN	NN	NN	EE	GF	EE
Benzoic Acid, Sat.	EE	EE	EG	EE	EG	EE
Benzyl Acetate	EG	EE	EG	EE	EG	EE
Benzyl Alcohol	NN	FN	NN	EE	NN	EE
Boric Acid	EE	EE	EE	EE	EE	EE
Bromine	NN	FN	NN	EE	NN	EE
Bromobenzene	NN	NN	NN	EE	NN	EE
Bromoform	NN	NN	NN	EE	NN	EE
Butadiene	NN	FN	NN	EE	NN	EE
Butyl Acetate	NN	FF	FF	EE	GF	EE
Butyl Chloride	NN	NN	NN	EE	FN	EE
Butyric Acid	NN	FN	NN	EE	NN	EE
Calcium Hydroxide	EE	EE	EE	EE	EE	SS
Calcium Hypochlorite	EE	EE	EE	EE	EG	EE
Carbazole	EE	EE	EE	EE	EE	EE
Carbon Disulphide	NN	NN	NN	EE	NN	EE
Carbon Tetrachloride	FN	GF	GF	EE	NN	EE
Cellosolve Acetate	EG	EE	EG	EE	EG	EE
Chlorine Water	GN	GF	FN	EE	GF	EE
Chlorine, 10% (Moist)	GN	GF	FN	EE	GN	EE
Chlorine, 10% in air	GN	EF	GN	EE	GN	EE
Chlorine, wet gas	GN	GF	FN	EE	GN	EE
Chloroacetic Acid	EE	EE	EG	EE	EG	EE
Chlorobenzene	NN	NN	NN	EE	FN	EE
Chloroform	FN	FN	NN	EE	NN	EE
Chromic Acid, 10%	EE	EE	EE	EE	EE	EE
Chromic Acid, 20%	EE	EE	GG	EE	EE	EE
Chromic Acid, 50%	EE	EE	GF	EE	GF	EE
Chromic:Surfuric Acid Mixture, 96%	NN	NN	NN	EE	NN	EE
Citric Acid, 10%	EE	EE	EE	EE	EE	EE
Cresol	NN	FN	GF	EE	NN	EE
Cyclohexane	FN	FN	FN	EE	NN	EE
Cyclohexanone	NN	FN	FN	EE	GF	EE
Cyclopentane	NN	FN	FN	EE	FN	EE
Decahydronaphthalene	GF	EG	GF	EE	FN	EE

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Diacetone	NN	NN	GF	EE	FF	EE
Diacetone Alcohol	FN	EE	EF	EE	EE	EE
Dibutylphthalate	--	-N	NN	EE	GG	EE
Diethyl Benzene	NN	FN	NN	EE	NN	EE
Diethyl Ether	NN	FN	NN	EE	NN	EE
Diethyl Ketone	NN	NN	GG	EE	GF	EE
Diethyl Malonate	EE	EE	EE	EE	EG	EE
Diethylamine	NN	FN	GN	EE	FF	EE
Diethylene Dioxide	GF	GG	GF	EE	FN	EE
Diethylene Glycol	EE	EE	EE	EE	EE	EE
Dimethyl Acetamide	FN	EE	EE	EE	FG	EE
Dimethyl Formamide	EE	EE	EE	EE	EE	EE
Dimethylsulphoxide (DMSO)	EE	EE	EE	EE	EE	EE
Dioxane	GF	GG	GF	EE	FN	EE
Dipropylene Glycol	EE	EE	EE	EE	EE	EE
Ethanol, 40%	EG	EE	EG	EE	EG	EE
Ether	NN	FN	NN	EE	NN	EE
Ethyl acetate	EE	EE	EG	EE	FN	EE
Ethyl Alcohol (Absolute)	EG	EE	EG	EE	EG	EE
Ethyl Alcohol, 40%	EG	EE	EE	EE	EG	EE
Ethyl Alcohol, 96%	EG	EG	EE	EE	EG	EE
Ethyl Benzene	NN	NN	NN	EE	NN	EE
Ethyl Benzoate	FF	GG	GF	EE	GF	EE
Ethyl Butyrate	GN	GF	GN	EE	FN	EE
Ethyl Chloride	FN	FF	FN	EE	FN	EE
Ethyl Chloride, Liquid	FN	FF	FN	EE	FN	EE
Ethyl Cyanoacetate	EE	EE	EE	EE	EE	EE
Ethyl Lactate	EE	EE	EE	EE	EE	EE
Ethylene Chloride	GN	GF	FN	EE	NN	EE
Ethylene Glycol	EE	EE	EE	EE	EE	EE
Ethylene Oxide Gas	FF	GF	FF	EE	FN	EE
Ethylene Oxide, 100%	FF	GF	FF	EE	FN	EE
Fatty Acids	EG	EE	EG	EE	EG	EE
Fluorine	FN	GN	FN	EG	FN	EE
Formaldehyde, 10%	EE	EE	EE	EE	EG	EE
Formaldehyde, 40%	EG	EE	EG	EE	EG	EE
Formalin, 10%	EE	EE	EE	EE	EG	EE
Formalin, 40%	EG	EE	EG	EE	EG	EE
Formic Acid	EG	EE	EG	EE	EF	EE
Formic Acid, 100%	EG	EE	EG	EE	EF	EE
Formic Acid, 3%	EG	EE	EG	EE	EG	EE
Formic Acid, 50%	EG	EE	EG	EE	EG	EE
Formic Acid, 85%	EE	EE	EG	EE	EF	EE
Freon TF	EG	EG	EG	EE	FN	EE
Glutaraldehyde	EG	EE	EE	EE	FF	EE
Glycerine (Glycerol)	EE	EE	EE	EE	EE	EE
Hexane	NN	GF	GF	EE	FN	EE
Hydrazine	NN	NN	NN	EE	NN	EE
Hydrobromic Acid, 4%	EG	EE	EG	EE	EG	EE
Hydrobromic Acid, 48%	EE	EE	EE	EE	EE	EE
Hydrobromic Acid, 69%	--	-N	EG	EE	EE	EE
Hydrochloric Acid, 20%	EE	EE	EE	EE	EG	EE
Hydrochloric Acid, 35%	EE	EE	EG	EE	EG	EE
Hydrochloric Acid, 5%	EE	EE	EE	EE	EG	EE
Hydrogen Peroxide, 3%	EE	EE	EE	EE	EE	EE
Hydrogen Peroxide, 30%	EG	EE	EG	EE	EG	EE
Hydrogen Peroxide, 90%	EG	EE	EG	EE	EG	EE
Isobutanol	EE	EE	EE	EE	EG	EE
Isopropanol, 100%	EE	EE	EE	EE	EE	EE
Isopropyl Acetate	GF	EG	GF	EE	GF	EE
Isopropyl Benzene	FN	GF	FN	EE	NN	EE
Isopropyl Ether	NN	NN	NN	EE	EE	EE
Lactic Acid, 3%	EG	EE	EG	EE	EG	EE
Lactic Acid, 85%	EG	EE	EG	EE	EG	EE
Iodine Crystals	NN	NN	FN	EE	GN	EE
Mercury	EE	EE	EE	EE	EE	EE
Methanol, 100%	EE	EE	EE	EE	EE	EE
Methoxyethyl Oleate	EG	EE	EG	EE	EG	EE
Methyl Acetate	FN	FF	GF	EE	EE	EE
Methyl Ethyl Ketone	NN	NN	EG	EE	NN	EE
Methyl Isobutyl Ketone	NN	NN	GF	EE	FF	EE
Methyl Propyl Ketone	GF	EG	GF	EE	FF	EE
Methylene Chloride	FN	FN	FN	EE	FN	EE

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Methyl-t-Butyl Ether	NN	FN	FN	EE	EE	EE
n-Amyl Acetate	GF	EG	GF	EE	GF	EE
n-Butanol	EE	EE	EE	EE	EG	EE
n-Butyl Acetate	GF	EG	GF	EE	GF	EE
n-Decane	FN	FN	FN	EE	FN	EE
n-Heptane	FN	GF	FF	EE	FF	EE
Nitric Acid, 10%	EE	EE	EE	EE	EE	EE
Nitric Acid, 20%	EG	GF	FF	EE	GF	EE
Nitric Acid, 50%	GN	GN	FN	EE	FN	EE
Nitric Acid, 70%	FN	GN	NN	EE	FN	EE
Nitrobenzene	NN	FN	NN	EE	NN	EE
Nitromethane	NN	FN	FN	EE	EF	EE
n-Octane	EE	EE	EE	EE	EE	EE
o-Dichlorobenzene	FN	FF	FN	EE	FN	EE
Oil, Mineral	GN	EE	EE	EE	EG	EE
Oxalic Acid, 10%	EE	EE	EE	EE	EE	EE
Ozone	EG	EE	EG	EE	EE	EE
p-Chloroacetophenone	EE	EE	EE	EE	EE	EE
p-Dichlorobenzene	FN	GF	GF	EE	GF	EE
Perchloric Acid	GN	GN	GN	GF	GN	EE
Perchloric Acid, 70%	GN	GN	GN	GF	GN	EE
Perchloroethylene	NN	NN	NN	EE	NN	EE
Phenol, 100%	NN	NN	NN	EE	NN	EE
Phenol, 50%	NN	NN	NN	EE	NN	EE
Phenol, Crystals	GN	GF	GN	EE	FG	EE
Phenol, Liquid	NN	NN	NN	EE	NN	EE
Phosphoric Acid, 5%	EE	EE	EE	EE	EE	EE
Phosphoric Acid, 85%	EE	EE	EG	EE	EG	EE
Picric Acid	NN	NN	NN	EE	EE	EE
Potassium Hydroxide, 1%	EE	EE	EE	EE	EE	SS
Potassium Hydroxide, 30%	EE	EE	EE	EE	EE	SS
Potassium Permanganate	EE	EE	EE	EE	EE	EE
Propane Gas	NN	FN	NN	EE	NN	EE
Propionic Acid	FN	EF	EG	EE	EF	EE
Propylene Glycol	EE	EE	EE	EE	EE	EE
Propylene Oxide	EG	EE	EG	EE	EG	EE
Pyridine	NN	NN	NN	EE	NN	EE
Resorcinol, 5%	EE	EE	EE	EE	EE	EE
Resorcinol, Sat.	EE	EE	EE	EE	EE	EE
Salicylaldehyde	EG	EE	EG	EE	EG	EE
Salicylic Acid, Sat.	EE	EE	EE	EE	EE	EE
Salt Solutions, Metallic	EE	EE	EE	EE	EE	SS
Silicone Oil	EG	EE	EE	EE	EE	EE
Silver Nitrate	EG	EE	EG	EE	EE	EE
Sodium Dichromate	EE	EE	EE	EE	EE	EE
Sodium Hydroxide, 50%	GG	GF	EE	EE	EE	SS
Sodium Hydroxide, 1%	EE	GF	EE	EE	EE	SS
Sodium Hydroxide, 10%	EE	GF	EE	EE	EE	SS
Sodium Hypochlorite, 15%	EE	EE	GF	EE	EE	EE
Stearic Acid	EE	EE	EE	EE	EE	EE
Sulfur dioxide	NN	FN	NN	EE	NN	EE
Sulfur Dioxide, wet or dry	EE	EE	EE	EE	EE	EE
Sulfur Salts	FN	GF	FN	EE	FN	EE
Sulfuric Acid, (96%)	GG	GG	FN	EE	GG	EE
Sulfuric Acid, 20%	EE	EE	EG	EE	EG	EE
Sulfuric Acid, 30%	EE	EE	GG	EE	EG	EE
Sulfuric Acid, 6%	EE	EE	EE	EE	EE	EE
Sulfuric Acid, 60%	EG	EE	EG	EE	EG	EE
Sulfuric Acid, 98%	GG	GG	FN	EE	GG	EE
Tartaric Acid	EE	EE	EE	EE	EE	EE
Tetrahydrofuran	FN	GF	GF	EE	FF	EE
Thionyl Chloride	NN	NN	NN	EE	NN	EE
Tincture of Iodine	EG	EG	GG	EE	NN	EE
Toluene	FN	FN	FN	EE	FF	EE
Tributyl Citrate	GF	EG	GF	EE	GF	EE
Trichloroacetic Acid (TCA)	FN	FF	FN	EE	EE	EE
Trichloroethane	NN	FN	NN	EG	NN	EE
Trichloroethylene	NN	FN	NN	EE	NN	EE
Triethylene Glycol	EE	EE	EE	EE	EE	EE
Tripropylene Glycol	EE	EE	EE	EE	EE	EE
Tris Buffer, Solution	EG	EG	EG	EE	EG	EE
Urea	EE	EE	EE	EE	EE	EE
Xylene	GN	GF	FN	EE	NN	EE

Overview on 1:1 Drawings of all Standard Sample Vials/Drawings of Caps

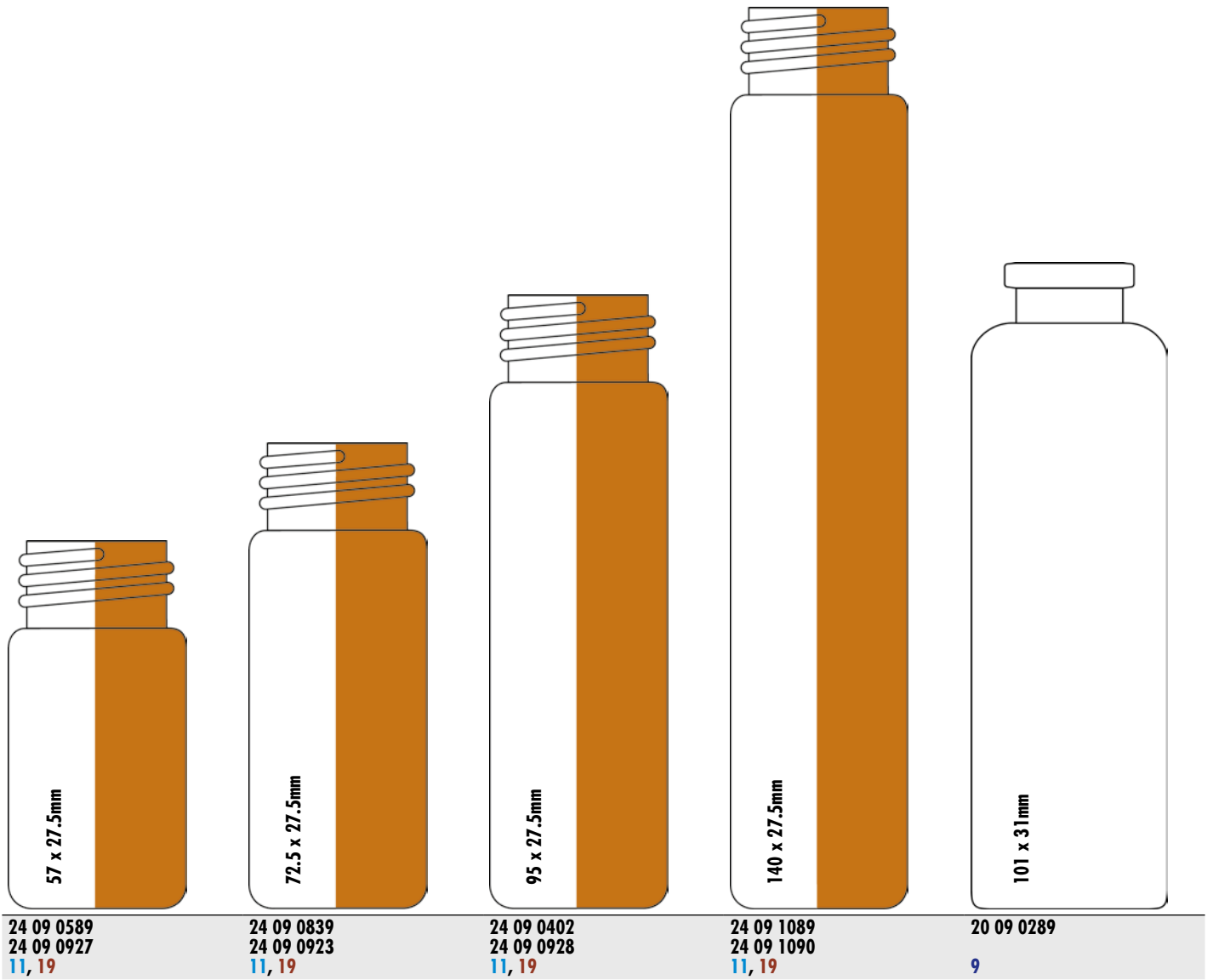
On our 6 pages pull-out sheet you will find on pages 89-92 actual size drawings of all standard glass articles and on pages 93-94 drawings of all cap types.

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

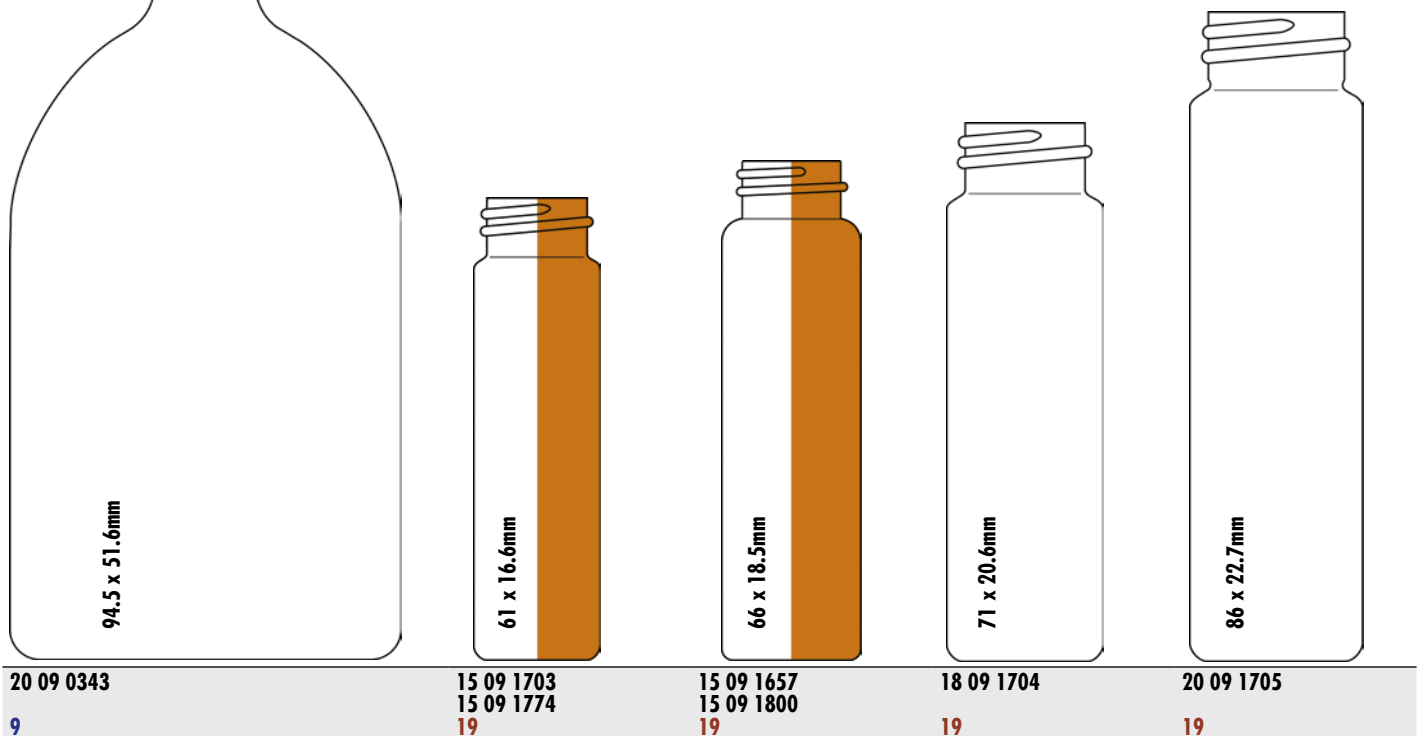
The drawings of the caps are not actual size. They should only visualize the special features of certain types of caps.

EPA-Vials ND24

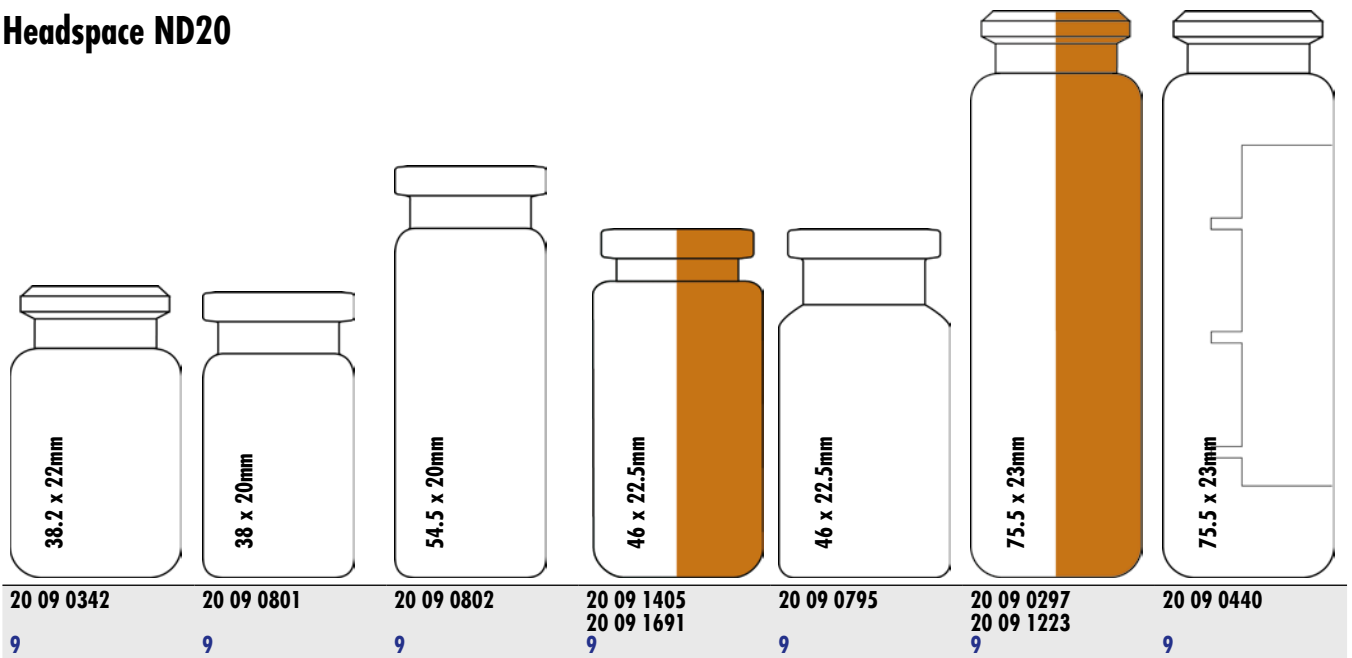
Crimp Neck ND20



Storage Vials

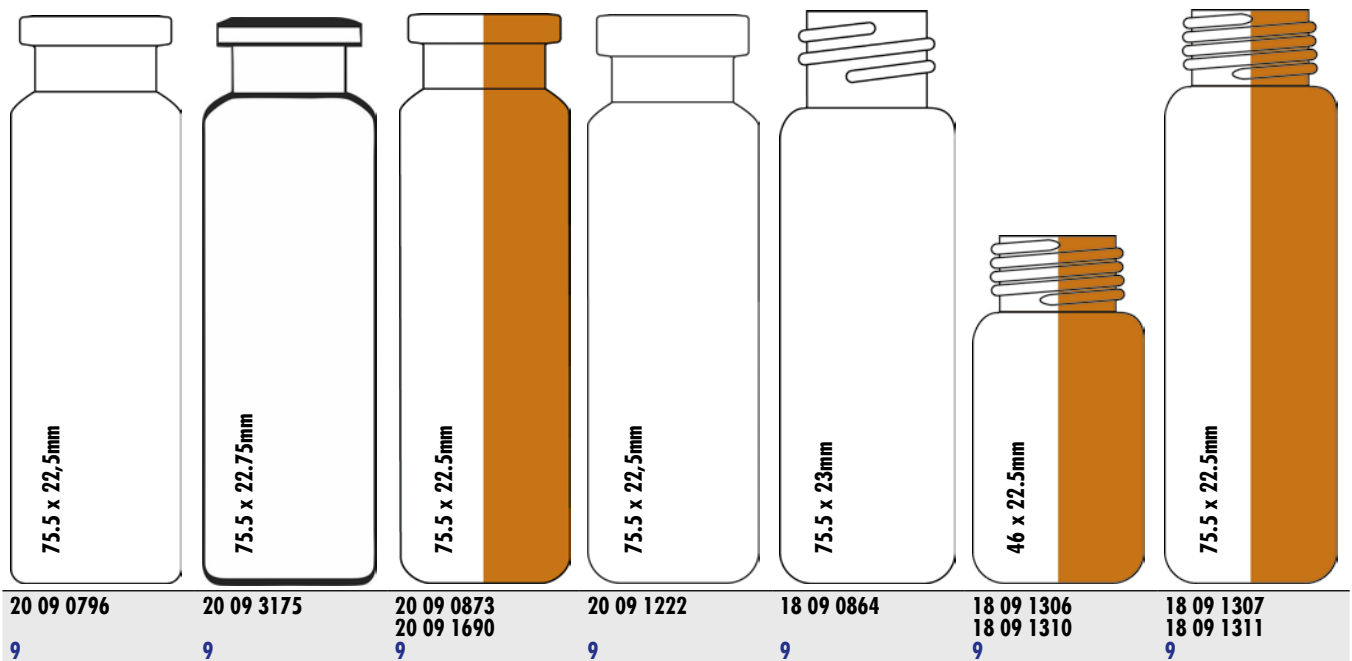


Headspace ND20

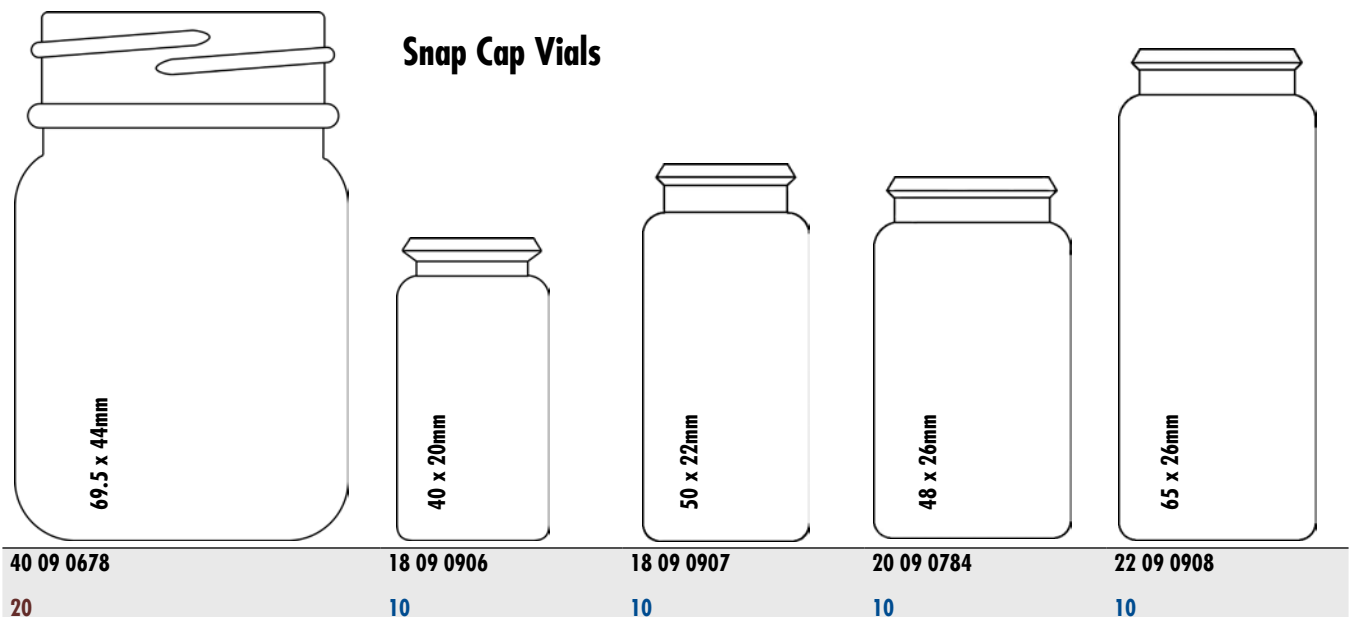


Headspace ND20

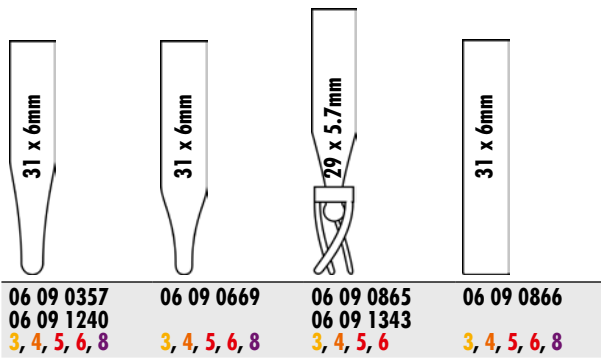
Headspace ND18



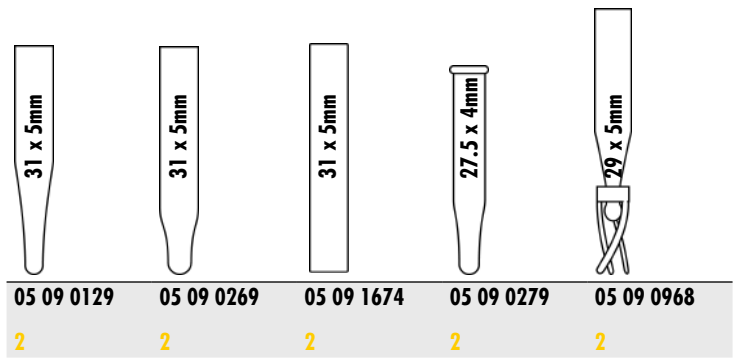
Snap Cap Vials



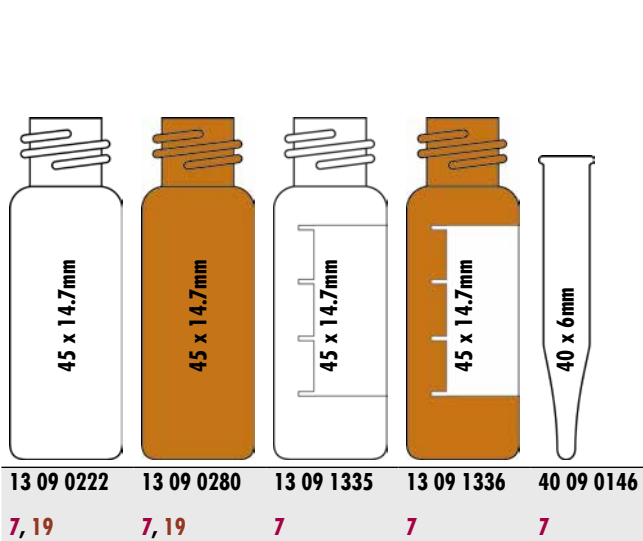
Micro-Inserts for wide opening



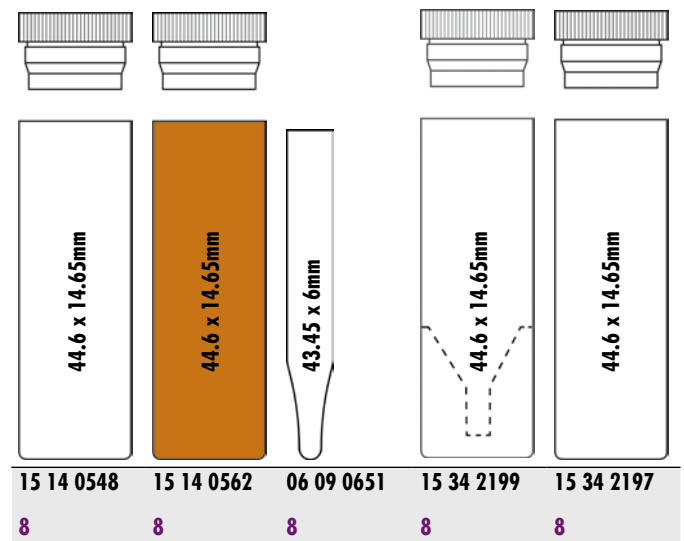
Micro-Inserts for small opening



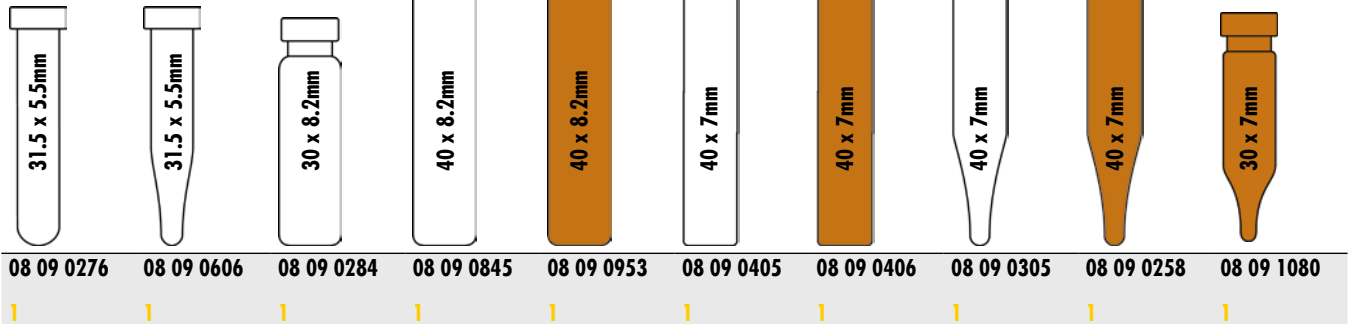
Screw Neck ND13



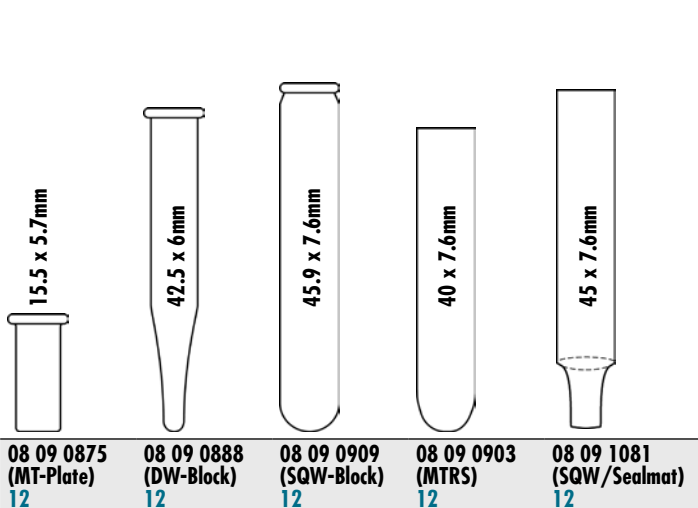
Shell Vials, 4ml (Insert)



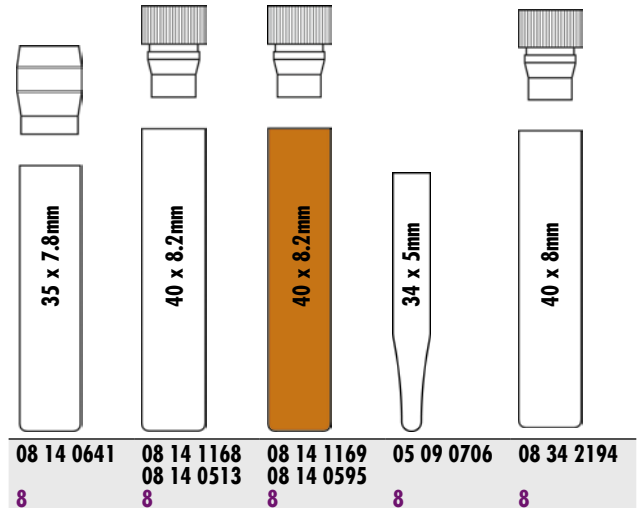
Crimp Neck ND8



Inserts for 96 Position Block Systems (RITTER)



Shell Vials, 1ml (Insert)



Crimp Neck ND11

32 x 11.6mm							41 x 11.6mm
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 0831
5	5	5	5	5	5	5	20

Snap Ring ND11

32 x 11.6mm									
11 09 0627 11 09 2173	11 09 0644	11 09 0645 11 09 2189	11 09 2276	11 09 2353 11 09 2786	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	6	6	6

Short Thread ND9

32 x 11.6mm									
11 09 0500 11 09 1241	11 09 0519	11 09 0520 11 09 1242	11 09 2746	11 09 2747	11 09 2748	11 09 0620	11 09 0999 11 09 1957	11 09 2275	11 09 2357 11 09 2656
3	3	3	3	3	3	3	3	3	3

Shell Vials, 2ml

32 x 11.6mm					1.5ml 1.0ml 0.5ml	32 x 11.6mm	
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	11 14 0544	11 14 0545
3	3	3	3	3	3	8	8

Screw Neck ND8, small opening

32 x 11.6mm							
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, 19	2, 19	2	2	2	4	4	4

Screw Neck ND10, wide opening

Aluminum Crimp Caps, centre hole



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

Special Aluminum Crimp Caps



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

Special features with roll groove

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

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	8mm	9 x 5.9mm	9 x 5.9mm	11mm	13 x 7.5mm	22 x 8.4mm	22 x 9.1mm
Size centre hole	with thinned penetration point	4mm centre hole	4mm centre hole	with thinned penetration point	4.5mm centre hole	4.3mm centre hole	4.3mm centre hole or 8mm 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	Screw Neck Vials ND8	Short Thread Vials ND9	Screw Neck Vials ND10	Screw Neck Vials ND13	Screw Neck Vials ND15	Screw Neck Vials ND18	Screw Neck Vials ND20	Screw Neck Vials ND24
Thread	8-425 thread, closed or open top	Short thread, closed or open top	10-425 thread, closed or open top	13-425 thread, closed or open top	15-425 thread, closed or open top	18-400 thread, closed or open top	20-400 thread, closed top,	24-400 thread, closed or open top
Cap Design	5.5mm centre hole	6mm centre hole	7mm centre hole	8.5mm centre hole	9mm centre hole	12mm centre hole		12.5mm centre hole
Size centre hole	PP, black or white, pink	PP, black, transparent, blue, red, yellow, green, pink	PP, black	PP, black, white	PP, black	PP, black	PP, white	PP, white
Material, colour								

PE-Plugs for Shell Vials



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

Snap Ring Caps



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

Snap Caps



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

Product Information – Sample Requests – Price Enquiries?

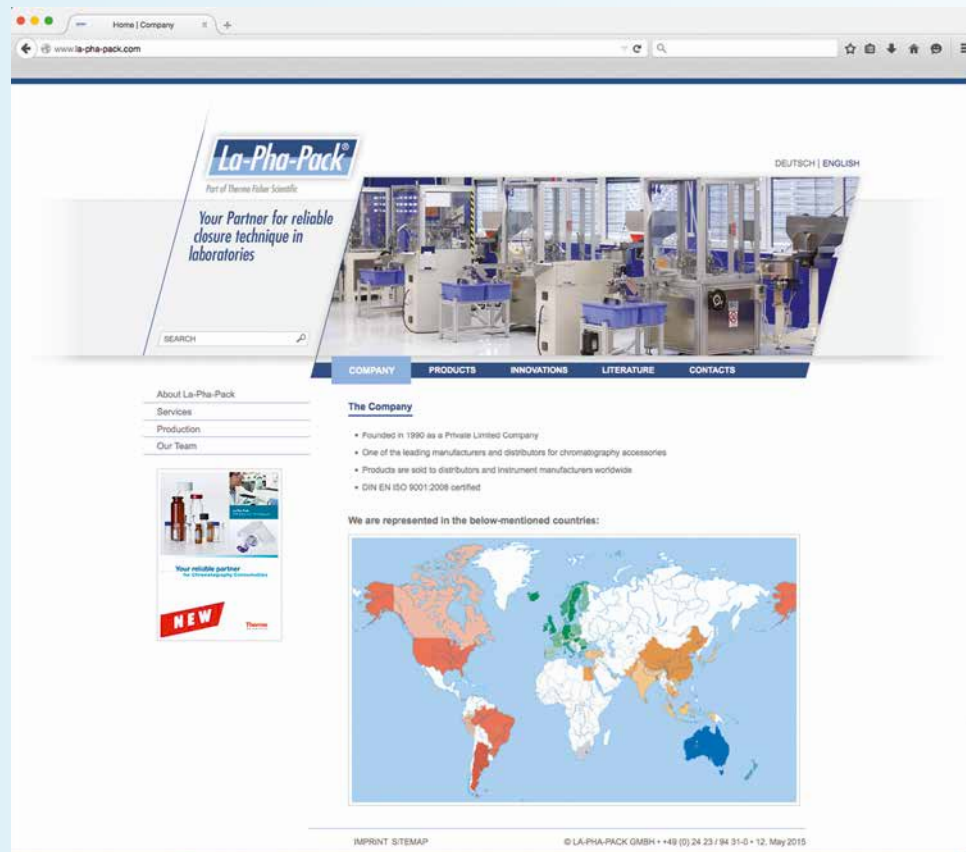
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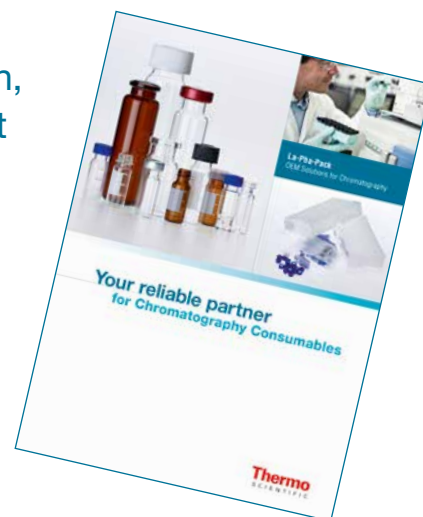
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