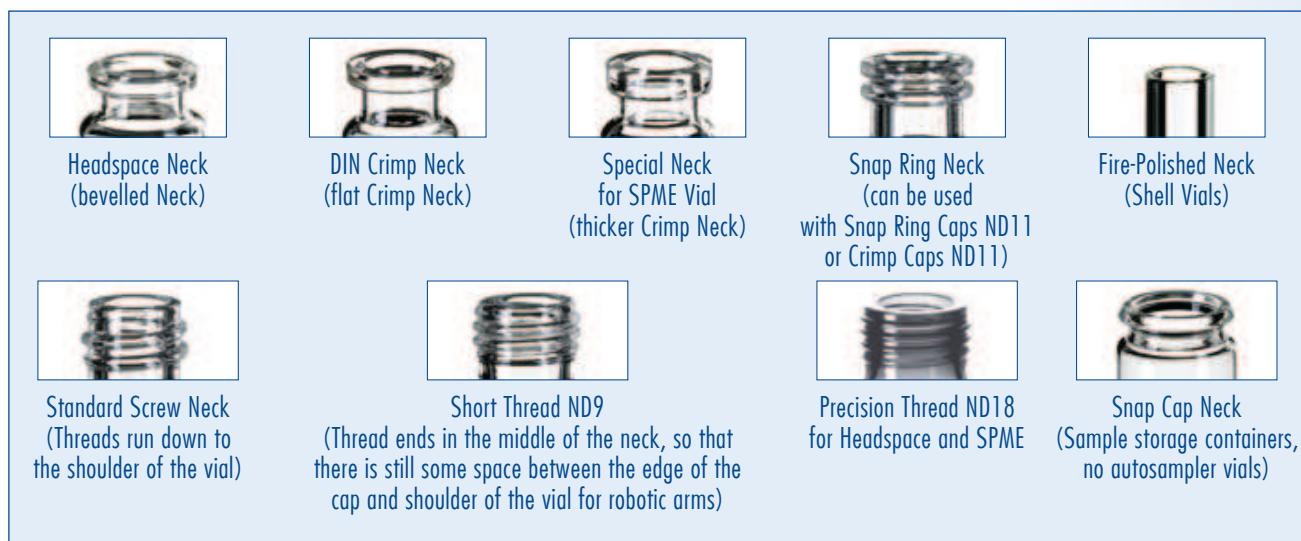
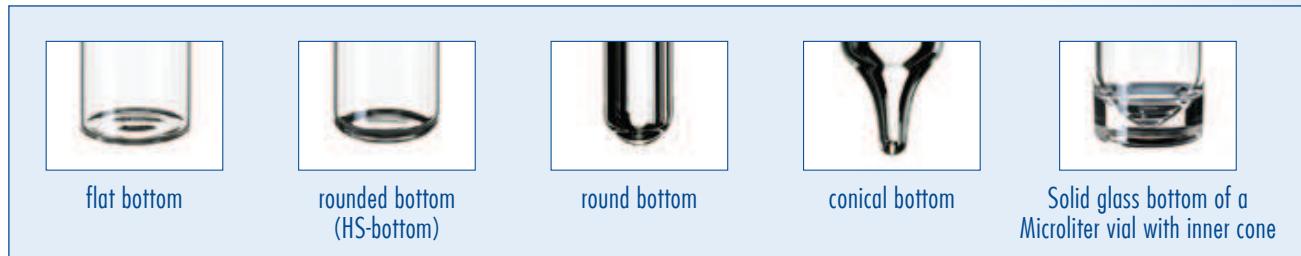


In order to visualize the most important characteristics that differentiate the different types of vials, we show below some drawings helping you to identify a vial:

### 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.

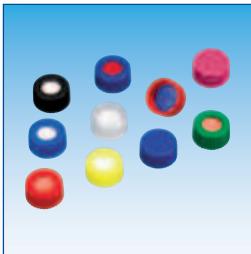
UltraBond seals are closures where the cap and the septa form an inseparable unit without the use of any glue or adhesive which are not allowed in chromatography products. This firm connection is achieved by a patented process changing the molecular structure of the cap and the septa surface, so that 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 Seals for Short Thread Vials.

## Seals

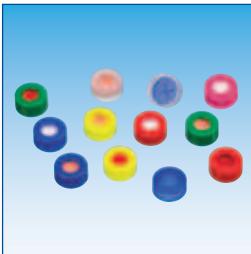
Different closure techniques and/or application requirements necessitate certain caps. In order to visualize the different types of caps, please see the photos below:



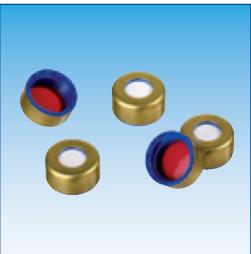
Screw Caps  
(open top/closed top)



Short Thread Caps  
(open top/closed top)



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



Magnetic  
Short Thread Cap  
(only as open top)



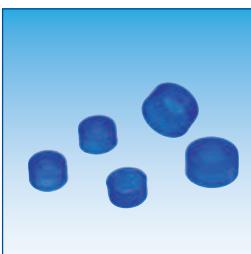
Various UltraBond  
Seals ND9 + ND24



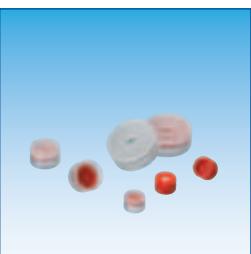
PE-Plugs  
(for Shell Vials;  
Micro-Inserts can be  
installed in the plug)



Snap Caps  
(for sample storage  
containers)



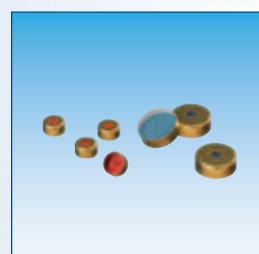
PE Push-On Caps  
ND8 + ND11



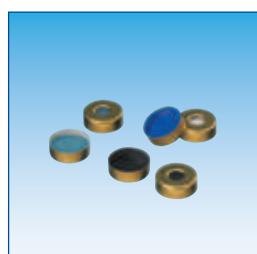
PE Caps  
(for Crimp Necks ND8,  
ND11 + ND20)



Aluminum Caps,  
centre hole



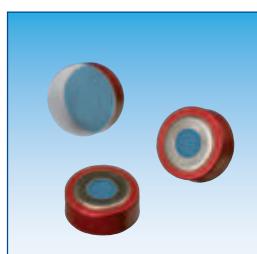
Magnetic  
Crimp Caps  
(5mm centre hole)



Magnetic  
Crimp Caps  
(8mm centre hole)



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



Magnetic Bimetal  
Crimp Cap  
(8mm centre hole)



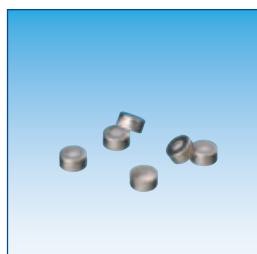
Headspace Caps  
(Pressure Release Caps)



Centre Tear Off Caps



Complete Tear Off Caps



Crimp Caps with  
roll 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.

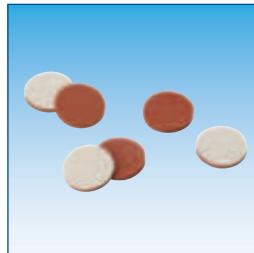
### The individual conditions of the customer's application aim at the specific characteristics of the carrier material, e.g.:

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

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



Natural Rubber/TEF



RedRubber/PTFE beige



Butyl



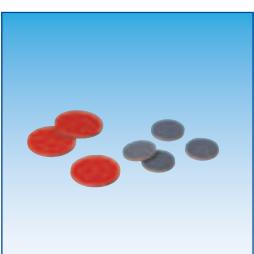
Butyl/PTFE



Pharma-Fix-Septa  
(Butyl/PTFE)



Silicone/Aluminum foil



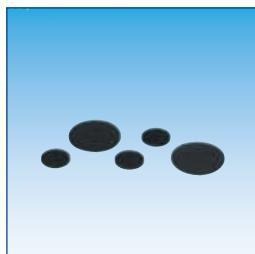
PTFE/Silicone/PTFE  
PTFE/Butyl/PTFE



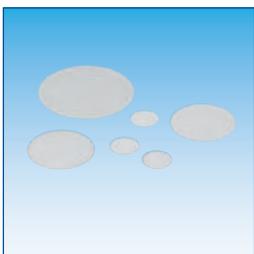
Silicone/PTFE



Pre-cut liners



Viton



PTFE



Aluminum



Septa for Schott  
Screw Caps



PTFE/EPDM/PTFE

## 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:

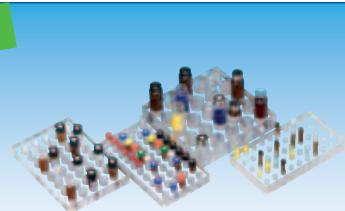
- with different volumes
- with flat, round or conical bottom
- in clear or amber glass
- for almost all autosamplers

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

### 1.1 Crimp Neck Vials and Micro-Vials ND8

Art. No.	08 09 0405	08 09 0406	08 09 0284	08 09 0845	08 09 0953
Description	0.7ml Crimp Neck Vial, 40 x 7mm, clear glass, 1 <sup>st</sup> hydrol. class	0.7ml Crimp Neck Vial, 40 x 7mm, amber glass, 1 <sup>st</sup> hydrol. class	0.8ml Crimp Neck Vial, 30 x 8.2mm, clear glass, 1 <sup>st</sup> hydrol. class	1.2ml Crimp Neck Vial, 40 x 8.2mm, clear glass, 1 <sup>st</sup> hydrol. class	1.2ml Crimp Neck Vial, 40 x 8.2mm, amber glass, 1 <sup>st</sup> 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			

TIP



For Vial Racks please see  
chapter 19.1 on page 56

TIP



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

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 <sup>st</sup> hydrol. class, round bottom	0.2ml Micro-Vial, 31.5 x 5.5mm, clear glass, 1 <sup>st</sup> hydrol. class, conical	0.6ml Micro-Vial, 40 x 7mm, clear glass, 1 <sup>st</sup> hydrol. class, conical	0.6ml Micro-Vial, 40 x 7mm, amber glass, 1 <sup>st</sup> hydrol. class, conical	0.4ml Micro-Vial, 30 x 7mm, amber glass, 1 <sup>st</sup> 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					

**CLEAN  
PACK**

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

## 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.	<b>08 03 0451</b>	<b>08 03 1935</b>	<b>08 03 2042</b>
Description Cap		Aluminum Cap clear lacquered, 4mm centre hole	
Septa Material	Nat. Rubber red-orange/TEF transparent <i>approved Instrument Manufacturer Quality</i>	Nat. Rubber red-orange/TEF transparent (replaces article 08 03 0200)	RedRubber/PTFE beige
Durometer	60° shore A	60° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.0mm
	100 pcs. per PE-Bag		

### 1.2.2 Silicone/PTFE Seals

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

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

### 1.2.3 Other Crimp Seals

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

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

### 1.3 Other Combination Seals for Crimp Neck ND8

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

Art. No.	<b>08 08 1675</b>	<b>09 15 0753</b>	<b>09 15 0756</b>
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

### 2. Screw Neck ND8



The vials are preferentially used on instruments of the following manufacturers: 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.	<b>11 09 0210</b>	<b>11 09 0259</b>	<b>11 09 0419</b>	<b>11 09 0382</b>	<b>11 09 0417</b>
Description	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, small opening  <b>SILANIZED 11 09 2175</b>	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, small opening	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, small opening, label + filling lines	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, small opening, label + filling lines  <b>SILANIZED 11 09 2190</b>	1.1ml Micro-Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, conical, small opening
TFVol. (ml)	1.9	1.9	1.9	1.9	1.3
UsVol. (ml)	1.5	1.5	1.65	1.5	1.00
MWVol. (µl)	200	200	200	200	30
Res. Vol. (µl)	<110	<110	<110	<110	<3

100 pcs. per PP-Box

#### 2.2 Micro-Inserts for Vials with small opening

Art. No.	<b>05 09 0129</b>	<b>05 09 0269</b>	<b>05 09 1674</b>	<b>05 09 0968</b>	<b>05 09 0279</b>	<b>05 13 0426</b>
Description	0.1ml Micro-Insert, 31 x 5mm, clear glass, 1 <sup>st</sup> hydrol. class, 15mm top	0.1ml Micro-Insert, 31 x 5mm, clear glass, 1 <sup>st</sup> hydrol. class, 9mm top	0.2ml Micro-Insert, 31 x 5mm, clear glass, 1 <sup>st</sup> hydrol. class, flat bottom	0.1ml Micro-Insert, 29 x 5mm, clear glass, 1 <sup>st</sup> hydrol. class, with assembled plastic spring	0.1ml Micro-Insert, 27.5 x 4mm, clear glass, 1 <sup>st</sup> hydrol. class <b>Metal Spring required!</b>	Spring 36 x 5mm  <b>For Micro-Insert 05 09 0279!</b>
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

TIP



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

TIP



Upon request vials with a barcode label are available

TIP



Upon request pre-sealed vials are deliverable

## 2.3 PP Screw Seals ND8

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



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

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

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

### 2.3.2 Silicone/PTFE Seals

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

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

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

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

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

## 2. Screw Neck ND8

### 2.4 Septa 8mm

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

Art. No.	<b>08 02 0103</b>	<b>08 02 0009</b>	<b>08 02 0881</b>	<b>08 02 0039</b>	<b>08 02 0005</b>
Description	Silicone white/PTFE red	Silicone cream/PTFE red	Silicone dark blue/PTFE white	Silicone white/PTFE blue, slitted, <i>rec. by VWR (Merck®)/Hitachi</i> (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.	<b>08 08 0027</b>	<b>08 08 0420</b>	<b>08 08 2288</b>	<b>08 08 0436</b>	<b>08 08 0435</b>
Cap	Polypropylene Screw Cap, black, 5.5mm centre hole	Polypropylene Screw Cap, black, closed top	Polypropylene Screw Cap, pink, 5.5mm centre hole	Polypropylene Screw Cap, white, 5.5mm centre hole	Polypropylene Screw Cap, white, closed top
100 pcs. per PE-Bag					

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

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



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

### 2.7 Special 2in1 KIT

#### 3in1 KITS for VWR (Merck®)/Hitachi Autosampler

Art. No. 3in1 KIT	Art. No. Vial	Art. No. Cap	Art. No. Septa	Alternative 3in1 KITS/2in1 KITS
<b>11 23 1047</b>	<b>11 09 0210</b>	<b>08 08 0027</b>	<b>08 02 0039</b>	<b>11 23 1144</b> <b>11 23 1085</b>
3in1 KIT consisting of: 11 09 0210, 08 08 0027, 08 02 0039	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, <i>1st hydrol. class, small opening</i>	Polypropylene Screw Cap, black, 5.5mm centre hole	Silicone white/PTFE blue, 55° shore A, 0.9mm, slitted <i>rec. by VWR (Merck®)/Hitachi</i>	Same Cap + same Septa in combination with 11 09 0259 (amber glass, small opening)
<b>11 23 1045</b>	<b>11 09 0210</b>	<b>08 15 0460</b>		<b>11 23 1614</b> <b>11 23 1499</b>
2in1 KIT consisting of: 11 09 0210, 08 15 0460	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, <i>1st hydrol. class, small opening</i>	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)
100 pcs. each in one KIT				

#### 2in1 KITS for Varian Autosampler

Art. No. 2in1 KIT	Art. No. Vial	Art. No. Seal	Alternative 2in1 KITS
<b>11 23 1046</b>	<b>11 09 0210</b>	<b>08 15 0293</b>	<b>11 23 1280</b>
2in1 KIT consisting of: 11 09 0210, 08 15 0293	1.5ml Screw Neck Vial, 32 x 11.6mm, clear glass, <i>1st hydrol. class, small opening</i>	PP Screw Cap, black, 5.5mm centre hole; <b>UltraClean</b> 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)
<b>11 23 1098</b>	<b>11 09 0259</b>	<b>08 15 0293</b>	<b>11 23 1100</b>
2in1 KIT consisting of: 11 09 0259, 08 15 0293	1.5ml Screw Neck Vial, 32 x 11.6mm, amber glass, <i>1st hydrol. class, small opening</i>	PP Screw Cap, black, 5.5mm centre hole; <b>UltraClean</b> 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.	<b>11 09 0500</b>	<b>11 09 0519</b>	<b>11 09 0520</b>	<b>11 09 0999</b>	<b>11 09 1957</b>	<b>11 09 2357</b>	<b>11 09 0620</b>	<b>11 09 2275</b>
Description	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening  <i>SILANIZED 11 09 1241</i>	1.5ml Short Thread Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening, label + filling lines  <i>SILANIZED 11 09 1242</i>	1.5ml Short Thread Vial, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, wide opening, label + filling lines  <i>SILANIZED 11 09 1242</i>	Short Thread Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening, with label + filling lines, <i>"Top Bonded"</i>	Short Thread Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, wide opening, with label + filling lines, <i>"Top Bonded"</i>	Short Thread Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class,  <i>"Base Bonded"</i>	1.1ml Microliter Short Thread Vial ND9, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class  <i>SILANIZED 11 09 2178</i>	0.9ml Total Microliter Short Thread Vial ND9, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class
TFVol. (ml)	1.85	1.85	1.85	0.34	0.34	0.4	1.6	1.4
UsVol. (ml)	1.5	1.5	1.5	0.2	0.2	0.3	1.5	1.1
MWVol. (µl)	200	200	200	25	25	30	30	25
Res. Vol. (µl)	<120	<120	<120	<1	<1	<3	<3	<1
100 pcs. per PP-Box								

#### 3.1 Short Thread Vials ND9 (cont.)

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

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

06 09 0357	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, 15mm top  <i>SILANIZED 06 09 1240</i>	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, 12mm top  <i>SILANIZED 06 09 1343</i>	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1 <sup>st</sup> hydrol. class, with assembled plastic spring  <i>SILANIZED 06 09 1343</i>	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, flat bottom	0.1ml PP Micro-Insert, 29 x 6mm, clear, 10mm top, with filling lines	0.1ml PP Micro-Insert, 29 x 6mm, clear, 10mm top, with filling lines and attached Plastic Spring
06 09 0669	0.34	0.35	0.3	0.5	0.30	0.30
06 09 0865	0.25	0.3	0.25	0.35	0.25	0.25
06 09 0866	30	30	30	40	30	30
06 19 2240	<4	<4	<4	<8	<4	<4
06 19 2241	100	100	100	100	100	100
06 19 2242	0.5	0.35	0.40	0.40	0.30	0.30
10 x 100 pcs. per PP-Box						

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

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

### 3.3 Plastic Vials ND9 and Plastic Micro-Vials ND9

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

### 3.4 PP Short Thread Seals ND9



<ul style="list-style-type: none"> <li>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.</li> <li>Screw cap with the design of a crimp cap; therefore suitable for robotic handling.</li> <li>Already assembled seal with slotted liner available, in order to avoid vacuum within the vial in case of multiple injections.</li> </ul>
<ul style="list-style-type: none"> <li>With pre-cut septa only the silicone material is slit in Y-shape while the PTFE lamination remains intact. This way concentration changes occurring with completely slitted septa can be avoided.</li> </ul>
<ul style="list-style-type: none"> <li>Short thread seals also available as closed top version (blue cap).</li> </ul>

#### 3.4.1 PP Short Thread Cap transparent, 6mm centre hole

Art. No.	<b>09 15 0981</b>	<b>09 15 0478</b>	<b>09 15 2011</b>	<b>09 15 0481</b>	<b>09 15 0480</b>	<b>09 15 0852</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/ TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

#### 3.4.2. PP Short Thread Cap blue

##### 3.4.2.1 PP Short Thread Cap blue, 6mm centre hole

Art. No.	<b>09 15 0982</b>	<b>09 15 0867</b>	<b>09 15 1819</b>	<b>09 15 0838</b>	<b>09 15 0868</b>	<b>09 15 0869</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/ TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

##### 3.4.2.2 PP Short Thread Cap blue, closed top

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

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

### 3.4.3 PP Short Thread Cap red, 6mm centre hole

Art. No.	<b>09 15 1337</b>	<b>09 15 1176</b>	<b>09 15 2012</b>	<b>09 15 1178</b>	<b>09 15 1177</b>	<b>09 15 1179</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

### 3.4.4 PP Short Thread Cap black, 6mm centre hole

Art. No.	<b>09 15 1668</b>	<b>09 15 1570</b>	<b>09 15 2013</b>	<b>09 15 1572</b>	<b>09 15 1571</b>	<b>09 15 1669</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

### 3.4.5 PP Short Thread Cap green, 6mm centre hole

Art. No.	<b>09 15 1539</b>	<b>09 15 1356</b>	<b>09 15 1911</b>	<b>09 15 1332</b>	<b>09 15 1485</b>	<b>09 15 1746</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

### 3.4.6 PP Short Thread Cap yellow, 6mm centre hole

Art. No.	<b>09 15 2015</b>	<b>09 15 1542</b>	<b>09 15 2014</b>	<b>09 15 1527</b>	<b>09 15 1486</b>	<b>09 15 1745</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

### 3.4.7 PP Short Thread Cap pink, 6mm centre hole

Art. No.	<b>09 15 2468</b>	<b>09 15 2469</b>	<b>09 15 2470</b>	<b>09 15 2473</b>	<b>09 15 2471</b>	<b>09 15 2472</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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						

TIP



For Storage Boxes please see chapter 19.2 on page 57

TIP



For Vial Racks please see chapter 19.1 on page 56

\*approved instrument manufacturer quality

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

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



<b>Art. No.</b> <b>09 15 1907</b> <b>Septa Material</b> Silicone white/PTFE red <b>UltraClean</b> <b>Durometer</b> 55° shore A <b>Thickness</b> 1.0mm 100 pcs. per PE-Bag	<b>Art. No.</b> <b>09 15 1907</b> <b>Septa Material</b> Silicone white/PTFE red <b>UltraClean</b> <b>Durometer</b> 55° shore A <b>Thickness</b> 1.0mm 100 pcs. per PE-Bag

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

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

#### **3.4.9 9mm Short Thread MS Cap transparent**

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



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

#### **3.4.11 HPLC and GC Certified Vial KITS (Short Thread Vials and Short Thread Seals ND9)**

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

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.



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

Further certified combinations are available upon request.

\*improved instrument manufacturer quality

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

### 3.5 Septa 9mm for Short Thread Caps

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

Art. No.	<b>09 02 0980</b>	<b>09 02 1779</b>	<b>09 02 1818</b>	<b>09 02 1780</b>	<b>09 02 1781</b>	<b>09 02 1942</b>
Septa Material	PTFE virginal	Nat. Rubber red-orange/TEF transparent	RedRubber/PTFE beige <i>approved IM Quality*</i>	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
1000 pcs. per PE-Bag						

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

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



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

### 3.7 Special 2in1 KITS

#### 2in1 KITS with Short Thread Vials

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

100 pcs. each in one KIT

\*improved instrument manufacturer quality / approved Instrument Manufacturer Quality

### 4. Screw Neck ND10



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



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

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

Art. No.	<b>10 09 0743</b>	<b>10 09 1196</b>	<b>10 09 1197</b>	<b>06 09 0357</b>	<b>06 09 0669</b>	<b>06 09 0865</b>	<b>06 09 0866</b>
Description	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrolyt. class, wide opening, label + filling lines	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrolyt. class, wide opening, label + filling lines	1.5ml Screw Neck Vial, 10-425 Thread, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrolyt. class, wide opening, label + filling lines	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrolyt. class, 15mm top  <b>SILANIZED 06 09 1240</b>	0.1ml Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrolyt. class, 12mm top	0.1ml Micro-Insert, 29 x 5.7mm, clear glass, 1 <sup>st</sup> hydrolyt. class, with assembled plastic spring  <b>SILANIZED 06 09 1343</b>	0.2ml Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrolyt. 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.	<b>10 15 1256</b>	<b>10 15 1257</b>	<b>10 15 0744</b>	<b>10 15 1258</b>	<b>10 15 1328</b>	<b>10 15 1905</b>
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 <i>UltraClean</i>	Silicone white/PTFE beige	PTFE red/Silicone white/ PTFE red	Silicone white/PTFE blue, with slit	Nat. Rubber red-orange/TEF transparent
Durometer	60° shore A	45° shore A	45° shore A	45° shore A	55° shore A	60° shore A
Thickness	1.3mm	1.3mm	1.5mm	1.0mm	1.5mm	1.3mm
Further Screw Seals ND10 with closed/open top resp. With white Caps are available upon request!						
100 pcs. per PE-Bag						

#### 4.3 Septa 10mm

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

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

#### 4.4 PP Screw Caps ND10

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



## 5. Crimp Neck ND11

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

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

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



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

Art. No.	<b>11 09 0356</b>	<b>11 09 0476</b>	<b>11 09 0477</b>	<b>11 09 0921</b>	<b>11 09 1956</b>	<b>11 09 2353</b>	<b>11 09 0619</b>	<b>11 09 2276</b>
Description	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening  small opening 11 09 0184  <b>SILANIZED 11 09 2085</b>	1.5ml Crimp Neck Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening, label + filling lines  <b>SILANIZED 11 09 1767</b>	1.5ml Crimp Neck Vial, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, wide opening, label + filling lines  <b>"Top Bonded"</b>	Crimp Neck Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, with label + filling lines  <b>"Top Bonded"</b>	Crimp Neck Vial with integrated 0.2ml Micro-Insert, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, with label + filling lines  <b>"Base Bonded"</b>	Snap Ring Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class  <b>"Base Bonded"</b>	  <b>SILANIZED 11 09 2177</b>	1.1ml Microliter-Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class  0.9ml Total Microliter Snap Ring Vial ND11, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrolytic class
TFVol. (ml)	2.0	2.0	2.0	0.4	0.4	0.39	1.8	1.4
UsVol. (ml)	1.50	1.50	1.50	0.21	0.2	0.3	1.5	1.2
MWVol. (µl)	200	200	200	25	25	30	40	25
Res. Vol. (µl)	<100	<100	<100	<1	<1	<3	<8	<1
100 pcs. per PP-Box								

### 5.1 Crimp Neck Vials ND11 (cont.)

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

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.	<b>06 09 0357</b>	<b>06 09 0669</b>	<b>06 09 0865</b>	<b>06 09 0866</b>
Description	Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, 15mm top  <b>SILANIZED 06 09 1240</b>	Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, 12mm top  <b>SILANIZED 06 09 1343</b>	Micro-Insert, 29 x 5.7mm, clear glass, 1 <sup>st</sup> hydrol. class, with assembled plastic spring  <b>SILANIZED 06 09 1343</b>	Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, flat bottom
TFVol. (ml)	0.34	0.35	0.3	0.5
UsVol. (ml)	0.25	0.30	0.25	0.35
MWVol. (µl)	30	30	30	40
Res. Vol. (µl)	<4	<4	<4	<8
10 x 100 pcs. per PP-Box				

## 5.3 Aluminum Crimp Seals ND11

### 5.3.1 Natural Rubber/TEF Seals

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

- Three layer septa of Natural Rubber/Butyl/TEF combines the good physical properties of Nat. Rubber (resealability) with the good chemical properties of Butyl (cleanliness).

Art. No.	<b>11 03 0209</b>	<b>11 03 0300</b>	<b>11 03 0900</b>	<b>11 03 0301</b>	<b>11 03 0302</b>	<b>11 03 0303</b>
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
Septa Material	Nat. Rubber red-orange/ TEF transparent <i>approved IM Quality*</i>	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
Durometer	60° shore A	45° shore A	60° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.3mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag						

### 5.3.2 RedRubber/PTFE Seals

- Temperature resistant from -40°C up to 110°C.
- softer alternative to Natural Rubber/TEF and Butyl/PTFE.

- Cleaner than Natural Rubber or Butyl; low fragmentation.
- RedRubber is a synthetic rubber.

Art. No.	<b>11 03 1875</b>	<b>11 03 1984</b>	<b>11 03 1985</b>	<b>11 03 1986</b>
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
Septa Material			RedRubber/PTFE beige <i>approved Instrument Manufacturer Quality</i>	
Durometer	45° shore A	45° shore A	45° shore A	45° shore A
Thickness	1.0mm	1.0mm	1.0mm	1.0mm
100 pcs. per PE-Bag				

### 5.3.3 Silicone/PTFE Seals

- Temperature resistant from -60°C up to 200°C.
- Much cleaner than Natural Rubber, RedRubber or Butyl.

- Cross-slotted liner as penetration aid and for low coring, but also for avoiding vacuum in the vial in case of multiple injections.

Art. No.	<b>11 03 0247</b>	<b>11 03 0362</b>	<b>11 03 0885</b>	<b>11 03 0196</b>	<b>11 03 0464</b>	<b>11 03 1625</b>	<b>11 03 0666</b>	<b>11 03 0667</b>
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				
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-slotted	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
Thickness	1.3mm	1.5mm	1.3mm	1.0mm	1.5mm	1.3mm	1.3mm	1.3mm
100 pcs. per PE-Bag								

**TIP**

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

**TIP**

**Crimping Tools please**  
see chapter 18 onwards  
on page 54.

\*approved Instrument Manufacturer Quality



## 6. Snap Ring ND11



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

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



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

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

Art. No.	<b>11 09 0627</b>	<b>11 09 0644</b>	<b>11 09 0645</b>	<b>11 09 2276</b>	<b>11 09 2353</b>	<b>06 09 0357</b>	<b>06 09 0669</b>	<b>06 09 0865</b>	<b>06 09 0866</b>
Description	1.5ml Snap Ring Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening  <b>SILANIZED</b> <b>11 09 2173</b>	1.5ml Snap Ring Vial, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrol. class, wide opening, label + filling lines  <b>SILANIZED</b> <b>11 09 2189</b>	1.5ml Snap Ring Vial, 32 x 11.6mm, amber glass, 1 <sup>st</sup> hydrol. class, wide opening, label + filling lines  <b>SILANIZED</b> <b>11 09 2189</b>	0.9ml Total Microliter Snap Ring Vial ND11, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrolytic class  <b>SILANIZED</b> <b>11 09 2189</b>	Snap Ring Vial with integrated Micro-Insert, 32 x 11.6mm, clear glass, 1 <sup>st</sup> hydrolytic class, 15mm top  <b>"Base Bonded"</b>	Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, 15mm top	Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, 12mm top	Micro-Insert, 29 x 5.7mm, clear glass, 1 <sup>st</sup> hydrol. class, with assembled plastic spring	Micro-Insert, 31 x 6mm, clear glass, 1 <sup>st</sup> hydrol. class, flat bottom
TFVol. (ml)	1.90	1.90	1.90	1.40	0.40	0.34	0.35	0.3	0.5
UsVol. (ml)	1.5	1.5	1.5	1.2	0.3	0.25	0.30	0.25	0.35
MWVol. (µl)	200	200	200	25	30	30	30	30	40
Res. Vol. (µl)	<100	<100	<100	<1	<3	<4	<4	<4	<8
100 pcs. per PP-Box					10 x 100 pcs.per PP-Box				

### 6.2 Micro-Vials with Snap Ring ND11

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

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

## 6.3 PE Snap Ring Seals ND11

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



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

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

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

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

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

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

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

Art. No. Hard Cap	<b>11 15 1556</b>	<b>11 15 1886</b>	<b>11 15 1677</b>	<b>11 15 1793</b>
Septa Material	Nat. Rubber red-orange/ TEF transparent	Silicone white/PTFE red <i>UltraClean</i>	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				

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

\*approved instrument manufacturer quality

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

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

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

Art. No. Hard Cap	<b>11 15 2474</b>	<b>11 15 2476</b>	<b>11 15 2475</b>	<b>11 15 2477</b>
Septa Material	Nat. Rubber red-orange/ TEF transparent	Silicone white/PTFE red <i>UltraClean</i>	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				

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



- Main applications for Plastic vials are atomic absorption, water and protein analysis, capillary electrophoresis, ion chromatography etc.
- 1.5ml Polypropylene Short Thread Vial with slightly concave shaped bottom. Usable in HPLC as a possible alternative to silanized glass vials for pH-sensitive and aqueous samples.
- TPX has a crystal clear transparency and good chemical resistance.

- Any combination of our plastic vials with one of our seals can be obtained as a 2in1 KIT.
- Also available our so-called TopSerts Vials: transparent and amber TPX Micro-Vials with a Glass Insert (Pages 21 and 32).
- Special Push-On Cap with thinner penetration point made of Polyethylene for Snap Ring Vials and Crimp Neck Vials ND11.



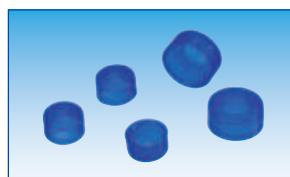
### 7.1 Plastic Vials ND9 and Plastic Micro-Vials ND9 + ND11

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

100 pcs. per PE-Bag

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

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



### 7.3 Special 2in1 KITS

#### 2in1 KITS for Waters®

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

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

## 8. Screw Neck ND13

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

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

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



### 8.1 Screw Neck Vials ND13 and appropriate Micro-Inserts

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

### 8.2 PP Screw Seals ND13

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



Art. No.	<b>13 15 0456</b>	<b>13 15 1639</b>	<b>13 15 0815</b>	<b>13 15 0887</b>	<b>13 15 0292</b>	<b>13 15 1293</b>	<b>13 15 0439</b>	<b>13 15 1638</b>
Description Cap	Polypropylene Screw Cap black, 8.5mm centre hole	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
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
Thickness	1.3mm	1.3mm	1.5mm	1.3mm	1.0mm	1.5mm	1.3mm	1.5mm
Further Screw Seals ND13 with closed/open top caps are available upon request!								100 pcs. per PE-Bag

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

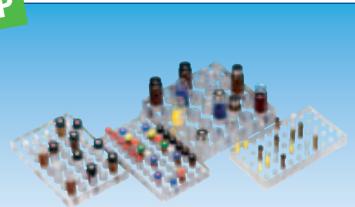
### 8.3 Septa 12mm

Art. No.	<b>12 02 0168</b>	<b>12 02 0223</b>	<b>12 02 1635</b>	<b>12 02 0143</b>	<b>12 02 0463</b>	<b>12 02 0322</b>
Septa Material	PTFE virgin	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-slotted
Further 12mm Septa are available upon request! 1000 pcs. per PE-Bag						

### 8.4 PP Screw Caps ND13

Art. No.	<b>13 08 0166</b>	<b>13 08 0336</b>	<b>13 08 0639</b>	<b>13 08 0452</b>
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				

TIP



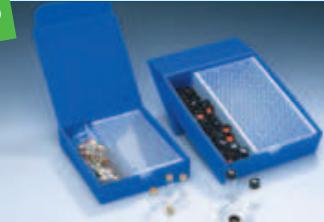
For Vial Racks please see  
chapter 19.1 on page 56

TIP



Upon request vials with a  
barcode label are available

TIP



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

TIP



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

### 8.5 Special 2in1 KITS

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

Art. No. 3in1 KIT	Art. No. Vial	Art. No. Cap	Art. No. Septa
<b>13 28 1071</b>	<b>13 09 0222</b>	<b>13 08 0166</b>	<b>12 02 0168</b>
3in1 KIT consisting of: 13 09 0222, 13 08 0166, 12 02 0168	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 <sup>st</sup> hydrol. class	Polypropylene Screw Cap, black, 8.5mm centre hole	PTFE virgin, 53° shore D, 0.25mm
<b>13 28 1076</b>	<b>13 09 0280</b>	<b>13 08 0166</b>	<b>12 02 0168</b>
3in1 KIT consisting of: 13 09 0280, 13 08 0166, 12 02 0168	4ml Screw Neck Vial, 45 x 14.7mm, amber glass, 1 <sup>st</sup> hydrol. class	Polypropylene Screw Cap, black, 8.5mm centre hole	PTFE virgin, 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
<b>13 28 1067</b>	<b>13 09 0222</b>	<b>13 15 0456</b>	<b>13 28 1072</b>
2in1 KIT consisting of: 13 09 0222, 13 15 0456	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 <sup>st</sup> hydrol. class	PP Screw Cap, black, 8.5mm centre hole; Nat. Rubber red-orange/ TEF transparent, 60° shore A, 1.3mm	Same Seal in combination with 13 09 0280 (amber glass)
<b>13 28 1069</b>	<b>13 09 0222</b>	<b>13 15 0815</b>	<b>13 28 1074</b>
2in1 KIT consisting of: 13 09 0222, 13 15 0815	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 <sup>st</sup> hydrol. class	PP Screw Cap, black, 8.5mm centre hole; Silicone cream/PTFE red, 55° shore A, 1.5mm	Same Seal in combination with 13 09 0280 (amber glass)
<b>13 28 1070</b>	<b>13 09 0222</b>	<b>13 15 0292</b>	<b>13 28 1075</b>
2in1 KIT consisting of: 13 09 0222, 13 15 0292	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 <sup>st</sup> hydrol. class	PP Screw Cap, black, 8.5mm centre hole; PTFE red/Silicone white/ PTFE red, 45° shore A, 1.0mm	Same Seal in combination with 13 09 0280 (amber glass)
<b>13 28 1541</b>	<b>13 09 0222</b>	<b>13 15 1293</b>	
2in1 KIT consisting of: 13 09 0222, 13 15 1293	4ml Screw Neck Vial, 45 x 14.7mm, clear glass, 1 <sup>st</sup> hydrol. class	PP Screw Cap, black, 8.5mm centre hole; Silicone white/PTFE blue, 55° shore A, 1.5mm cross-slotted	Further 2in1 KITS can be made according to your wishes!
100 pcs. each in one KIT			

Further 2in1 KITS are available upon request!

## 9. Shell Vials

**The vials are preferentially used on instruments of the following manufacturers:**  
**Alcott, Gilson, Shimadzu, Waters® (Wisp 96 respectively 48 Position Carousel)**

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

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



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

Art. No.	<b>08 14 0641</b>	<b>08 14 1168*</b>	<b>08 14 1169*</b>	<b>05 09 0706</b>	<b>15 14 0548</b>	<b>15 14 0562</b>		
Description	1ml Shell Vial, 35 x 7.8mm, clear glass, 1 <sup>st</sup> hydrol. class, 6mm PE-Plug, transparent,  for ALCOTT	1ml Shell Vial, 40 x 8.2mm, clear glass, 1 <sup>st</sup> 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 <sup>st</sup> 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 <sup>st</sup> 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 <sup>st</sup> hydrol. class, 15mm PE-Plug, transparent  for Waters® Wisp 48 Pos. Carousel	4ml Shell Vial, 44.6 x 14.65mm, amber glass, 1 <sup>st</sup> hydrol. class, 15mm PE-Plug, transparent  for Waters® Wisp 48 Pos. Carousel		
TFVol. (ml)	1.1	1.4	1.4	0.2	5.5	5.5		
UsVol. (ml)	0.8	1	1	0.15	4	4		
MWVol. (µl)	60	100	100	25	1000	1000		
Res. Vol. (µl)	<25	<80	<80	<0.1	<800	<800		
100 pcs. per PP-Box (Vials) / 100 pcs. per PE-Bag (Plugs)			10 x 100 pcs. per PP-Box			100 pcs. per PP-Box (Vials) / 100 pcs. per PE-Bag (Plugs)		10 x 100 pcs. per PP-Box

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

### 9.2 Shell Vials 2ml and appropriate Micro-Inserts

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

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

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

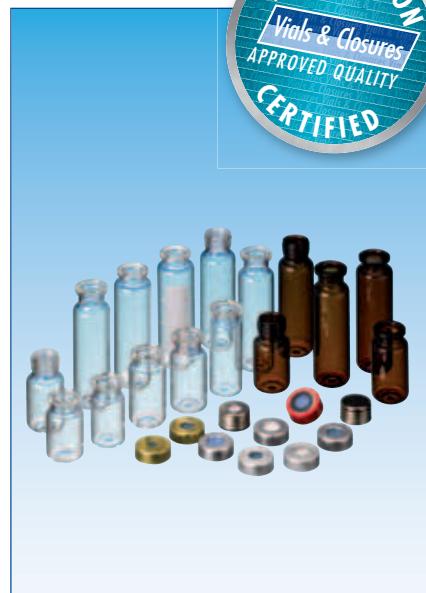
Art. No.	<b>08 34 2194</b>	<b>15 34 2199</b>	<b>15 34 2197</b>
Description	1ml PP Shell Vial, 40 x 8mm, clear;  8mm PE Plug, transparent	3ml PP Shell Vial, 44.6 x 14.65mm, clear, with inner cone; 15mm PE Plug, transparent	4ml PP Shell Vial, 44.6 x 14.65mm, clear;  15mm PE Plug, transparent
TFVol. (ml)	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			

## 10. Headspace ND20 (ND18)

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

While you can take the suitable vial type for the different instrument manufacturers from the upper part of the double paged chart, you'll find the appropriate recommended closures in the middle section. The various cap types that have to be considered are colour-coded. At the bottom of the page a break-down of the indicated part numbers

according to the colour-coded cap types and the different septa materials is listed. For better illustration of the septa type you'll find at the left side of page 38 (20mm septa for crimp caps) resp. at the right side of page 39 (17.5mm septa for magnetic Precision Thread Caps) photographs and article descriptions of them. Of course you can also take appropriate recommendations from our Quick-Reference-Charts on pages 70 to 75.



### IMPORTANT SAFETY TIP:

As Headspace vials have to withstand high internal pressure, almost all vials on the next page have a wall thickness of 1.2mm. Thus it is guaranteed that the vial will not burst. Contrary to a widely spread opinion, the seal and not the vial represents the weakest part of the whole 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).

## 10. Headspace ND20 (ND18)

### 10.1 Headspace-Vials ND20 + ND18



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



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

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

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

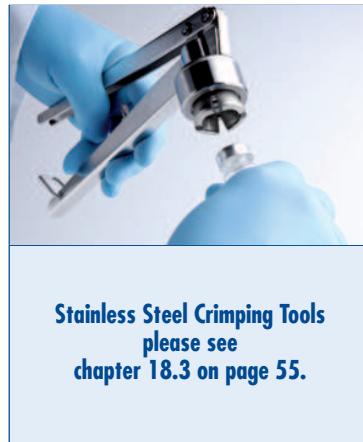
	Scale 1:3 Original size p.s. 94					
		20 09 0795	20 09 0796	20 09 1405 20 09 1691	20 09 0873 20 09 1690	20 09 1222
<b>20 02 0122</b> Moulded Septa Butyl, dark grey, 55° shore A, 3.0mm						
<b>20 02 0057</b> Moulded Septa Butyl/PTFE, grey, 50° shore A, 3.0mm						
<b>20 02 0035</b> Pharma-Fix-Septa (Butyl/PTFE), 50° shore A, 3.0mm	Agilent, Carlo Erba, DANI, Fisons	Agilent, Carlo Erba, DANI, Fisons	Carlo Erba, CTC PAL (Varian, Gerstel, Atas, Shimadzu), Fisons, Varian, Thermo Scientific	CTC PAL (Varian, Gerstel, Atas, Shimadzu) Thermo Scientific TriPlus HS ***	SPME Vial for CTC PAL	
Remarks						
*** not suitable for Thermo Scientific HS250/HS500						
<b>Autosampler Compatibility</b>						
Agilent G1888A, Agilent HS 7694 (DANI HS 39.50/HS 86.50)	20 03 0030/20 03 0901 20 03 0264/20 03 0828	20 03 0030/20 03 0901 20 03 0264/20 03 0828				
Agilent CTC Combi Pal						
CTC Combi PAL (HS Mode) (Gerstel MPS 2/Varian) CTC PAL HTC-xt, CTC HTS-xt, CTC HTX-xt, CTC PAL Combi-xt Liquid Mode, CTC Combi-xt HS Option, CTC GC-xt HS Option			20 03 0975	20 03 1536	20 03 0975	20 03 1536
CTC Combi PAL (SPME Mode) (Gerstel MPS 2/Varian) CTC Combi- xt SPME Options						20 03 1246/20 03 1264
CTC HS 500			20 03 0665		20 03 0665	
HTA HT200H	20 03 0142/20 03 0901				20 03 0142/20 03 0901	
PerkinElmer HS6						
PerkinElmer HS40/HS100/ HS101						
TurboMatrix™ HS16/HS40/ HS40XL/HS40 Trap/HS110/ HS110 Trap						
Shimadzu AOC-5000 (HS Mode) Shimadzu SIL-30 ACMP Shimadzu AOC-5000 (SPME Mode)			20 03 0975	20 03 1536	20 03 0975	20 03 1536
Thermo Scientific HS250/HS500 (Carlo Erba/Fisons/Thermo Scientific)			20 03 0711/20 03 0665/ 20 03 0710			
Thermo Scientific HS800 (Carlo Erba/Fisons/Thermo Scientific)			20 03 0711/20 03 0665/ 20 03 0710		20 03 0711/20 03 0665/ 20 03 0710	
Thermo Scientific HS850 (Carlo Erba / Fisons / Thermo Scientific)			20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059	20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059		
Thermo Scientific HS2000, Thermo Scientific TriPlus (HS Mode)			20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059	20 03 0142/20 03 0901/ 20 03 0127/20 03 0030/ 20 03 0059		
Thermo Scientific TriPlus (SPME Mode)			20 03 0142/20 03 0901	20 03 0142/20 03 0901		
Tekmar HT 3						
Varian CP-9020/9025, CP-9060 Varian Genesis		same closures for Genesis	20 03 0142/20 03 0901/ 20 03 0030/20 03 0059			

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



## 10.3 Other Crimp Neck Vials ND20

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



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

## 10.4 Aluminum Crimp Seals ND20

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

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

Any type of cap can ONLY be obtained in combination with a liner or a stopper!

### 10.4.1 Butyl Seals

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

Art. No.	20 03 0127	20 03 0126	20 03 0195	20 03 0212	20 03 0711
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
Septa Material			Butyl, dark grey		
Durometer			55° shore A		
Thickness			3.0mm		
	100 pcs. per PE-Bag				

### 10.4.2 Butyl/PTFE Seals (completely PTFE laminated)

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

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

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

#### 10.4.3 Pharma-Fix Seals (Butyl/PTFE)

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

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

#### 10.4.4 Silicone/PTFE Seals (completely PTFE laminated)

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

Art. No.	<b>20 03 0142</b>	<b>20 03 0163</b>	<b>20 03 0226</b>	<b>20 03 0227</b>	<b>20 03 0665</b>	<b>20 03 0975</b>	<b>20 03 1536</b>
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 UltraClean			Silicone blue transparent/PTFE transparent UltraClean		
Durometer		45° shore A			45° shore A		
Thickness		3.0mm			3.0mm		
Art. No.	<b>20 03 0901</b>	<b>20 03 0828</b>	<b>20 03 1785</b>	<b>20 03 1604</b>			
Description Cap	Aluminum Cap, plain, 10mm centre hole	Headspace Cap, clear lacquered	Magnetic Cap, gold, 8mm centre hole	Magnetic BiMetal Cap, red, 8mm centre hole			
Septa Material		Silicone white/PTFE beige (HT Quality)					
Durometer		45° shore A					
Thickness		3.2mm					
100 pcs. per PE-Bag							

#### 10.4.5 Silicone/Aluminum foil Seals

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

Art. No.	<b>20 03 0327</b>	<b>20 03 0326</b>	<b>20 03 0670</b>
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			

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

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

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

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

## 10.5 Septa/Stoppers 20mm

Art. No.	20 02 0122	20 02 0057	20 02 0035	20 02 0141	20 02 2054	20 02 0638	20 02 0335
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,
Durometer	55° shore A	50° shore A	50° shore A	45° shore A	45° shore A	45° shore A	20mm Butyl
Thickness	3.0mm	3.0mm	3.0mm	3.0mm	3.0mm	3.2mm	Injection Stopper, grey rec. by PerkinElmer
Further 20mm Septa available upon request!							
Septa – 1000 pcs. per PE-Bag / Stopper – 100 pcs. per PE-Bag							

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

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

Art. No.	22 15 0321	22 15 1697	22 15 0712	22 15 0863	22 15 1646	22 15 1334	22 15 1824
Description Cap		PE-Cap, transparent, 22 x 8.4mm, 4.3mm centre hole			PE-Cap, transparent, 22 x 9.1mm, 4.3mm centre hole		PE-Cap, transparent, 22 x 9.1mm, 6mm centre hole
Septa Material	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone blue transparent/PTFE white	Nat. Rubber red-orange/TEF transparent	Butyl red/PTFE grey	Silicone blue transparent/PTFE white	Silicone blue transparent/PTFE white, Y-slotted
Durometer	60° shore A	55° shore A	45° shore A	60° shore A	55° 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						
	1000 pcs. per PE-Bag						

### 10.6.1 Septa 19.5mm

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

### 10.6.2 PE-Caps 22mm

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

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

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

Art. No.	18 03 1578	18 03 1309	18 03 1414	18 03 1416	18 03 1874	18 03 2063	18 03 1666
Description Cap		Magnetic Screw Cap silver, 8mm centre hole					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
Durometer	45° shore A	45° shore A	55° shore A	55° shore A	50° shore A	55° shore A	45° shore A
Thickness	1.3mm	1.3mm	1.5mm	1.6mm	1.3mm	1.5mm	1.3mm
Attention! These screw seals are not suitable for article number 18 09 0864!							
100 pcs. per PE-Bag							

## 10.7.1 Septa 17.5mm for Magnetic Universal Screw Seals ND18

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

## 10.8 PP Screw Seals ND18 for 18 09 0864

Art. No.	<b>18 15 1386</b>	<b>18 15 1387</b>	<b>18 15 1398</b>	<b>18 15 1544</b>	<b>18 15 2102</b>	<b>18 15 2069</b>	<b>18 15 0871</b>
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	45° 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!

## 10.8.1 Septa 16mm

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

## 10.8.2 PP Screw Caps ND18

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



TIP

For Vial Racks  
please see chapter 19.1  
on page 56

	Universal Magnetic Screw Seals ND18 available with open and closed top		For 20mm Crimpers and Decappers please see chapter 18 on pages 54 cont.		Any 20ml Head-space-Vial can be obtained with the appropriate seal as a 2in1 KIT!
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## 11. Snap Cap Vials ND18 + ND22



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

### 11.1 Snap Cap Vials ND18 / ND22 and appropriate Snap Caps

Art. No.	<b>18 09 0906</b>	<b>18 09 0907</b>	<b>20 09 0784</b>	<b>22 09 0908</b>
Description	5ml Snap Cap Vial ND18, 40 x 20mm, clear glass, 3 <sup>rd</sup> hydrol. class	10ml Snap Cap Vial ND18, 50 x 22mm, clear glass, 3 <sup>rd</sup> hydrol. class	15ml Snap Cap Vial ND22, 48 x 26mm, clear glass, 3 <sup>rd</sup> hydrol. class	25ml Snap Cap Vial ND22, 65 x 26mm, clear glass, 3 <sup>rd</sup> 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.	<b>18 08 0913</b>	<b>18 08 0913</b>	<b>22 08 0794</b>	<b>22 08 0794</b>
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 ( $\mu$ l) (ml), Res. Vol. = Residual Volume (ml)



## 12. Screw Neck ND24 (EPA)

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

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

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



### 12.1 Screw Neck Vials ND24 (EPA)

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

Art. No.	24 09 0589	24 09 0927	24 09 0839	24 09 0923	24 09 0402	24 09 0928	24 09 1089	24 09 1090
Description	20ml EPA Screw Neck Vial, 57 x 27.5mm, clear glass, 1 <sup>st</sup> hydrol. class	20ml EPA Screw Neck Vial, 57 x 27.5mm, amber glass, 1 <sup>st</sup> hydrol. class	30ml EPA Screw Neck Vial, 72.5 x 27.5mm, clear glass, 1 <sup>st</sup> hydrol. class	30ml EPA Screw Neck Vial, 72.5 x 27.5mm, amber glass, 1 <sup>st</sup> hydrol. class	40ml EPA Screw Neck Vial, 95 x 27.5mm, clear glass, 1 <sup>st</sup> hydrol. class	40ml EPA Screw Neck Vial, 95 x 27.5mm, amber glass, 1 <sup>st</sup> hydrol. class	60ml EPA Screw Neck Vial, 140 x 27.5mm, clear glass, 1 <sup>st</sup> hydrol. class	60ml EPA Screw Neck Vial, 140 x 27.5mm, amber glass, 1 <sup>st</sup> 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 ( $\mu$ l) (ml), Res. Vol. = Residual Volume (ml)

### 12.2 PP Screw Seals ND24



- Ready to use combination seals; no time-consuming and "tricky" assembly.
- No contamination of the liner with sweat/fat that normally is caused by manual assembly.
- Available as closed top screw seals or with centre hole in white 24-400 caps.
- Broad variety of different septa materials for almost all applications.

• Also UltraBond Seals ND24 are offered, i.e. that the cap and the Silicone/PTFE liner of these seals form an inseparable unit avoiding the problem of liners falling out of the cap. This 100% firm fit of the liner is achieved by a patented process that requires no adhesives, but instead changes the molecular structure of both components to achieve the fixation.

- Also pre-sealed vials are available!

#### 12.2.1 PP Screw Seals ND24 (assembled)

Art. No.	<b>24 15 1394</b>	<b>24 15 1395</b>	<b>24 15 1163</b>	<b>24 15 1540</b>	<b>24 15 1007</b>
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 <b>(EPA-Quality)</b>	Silicone white/PTFE beige <b>(EPA-Quality)</b>	PTFE/EPDM/PTFE
Durometer	55° shore A	55° shore A	45° shore A	45° shore A	65° shore A
Thickness	2.5mm	2.5mm	3.2mm	3.2mm	2.0mm
Further Screw Seals ND24 with closed/open top are available upon request!					
100 pcs. per PE-Bag					

#### 12.2.2 UltraBond Seals ND24

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

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

### 12.3 Septa 22mm

Art. No.	<b>22 02 1390</b>	<b>22 02 1393</b>	<b>22 02 1108</b>	<b>22 02 0409</b>	<b>22 02 0487</b>
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 <b>(EPA-Quality)</b>	1.5mm, cross-slitted	3.0mm
1000 pcs. per PE-Bag					

### 12.4 PP Screw Caps ND24

<b>24 08 0403</b>	<b>24 08 0592</b>
Polypropylene Screw Cap, white, 12.5mm centre hole	Polypropylene Screw Cap, white, closed top
1000 pcs. per PE-Bag	

### 12.5 Specially assembled EPA Vials with Screw Seals ND24

Art. No.	<b>24 14 1513</b>	<b>24 14 0976</b>	<b>24 14 1621</b>	<b>24 14 1538</b>	<b>24 14 1094</b>	<b>24 14 1278</b>	<b>24 14 1354</b>
Description Vial	20ml EPA Screw Neck Vial, 57 x 27.5mm, clear glass, 1 <sup>st</sup> hydrolytic class, (24 09 0589)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1 <sup>st</sup> hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1 <sup>st</sup> hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, clear glass, 1 <sup>st</sup> hydrolytic class, EPA (24 09 0402)	40ml Screw Neck Vial, 95 x 27.5mm, amber glass, 1 <sup>st</sup> hydrolytic class, EPA (24 09 0928)	60ml Screw Neck Vial, 140 x 27.5mm, clear glass, 1 <sup>st</sup> hydrolytic class, EPA (24 09 1089)	60ml Screw Neck Vial, 140 x 27.5mm, clear glass, 1 <sup>st</sup> hydrolytic class, EPA (24 09 1089)
pre-screwed with	pre-screwed with	pre-screwed with	pre-screwed with	pre-screwed with	pre-screwed with	pre-screwed with	pre-screwed with
Description of Screwed-on Seal	UltraBond Seal, white, centre hole, Silicone nat./PTFE beige <b>(EPA-Quality)</b>	PP Screw Cap, white, centre hole, Silicone white/PTFE beige	UltraBond Seal, white, centre hole, Silicone natural/PTFE beige <b>(EPA-Quality)</b>	UltraBond Seal, white, closed top, Silicone natural/PTFE beige <b>(EPA-Quality)</b>	PP Screw Cap, white, centre hole, Silicone white/PTFE beige	PP Screw Cap, white, centre hole, Silicone white/PTFE beige	UltraBond Seal, white, centre hole, Silicone natural/PTFE beige <b>(EPA-Quality)</b>
Durometer	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!							
1000 pcs. per PP-Box							

## 13. 96 Position Block Systems

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

• The products can be obtained as individual components or as completely assembled, ready-to-use convenience blocks.



### 13.1 96 Position Block Systems with Glass Inserts, sealed individually

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

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

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

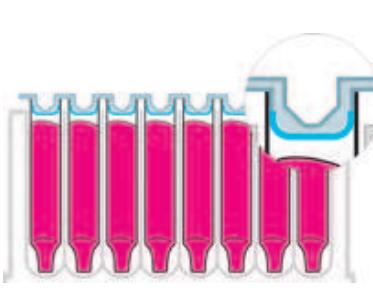
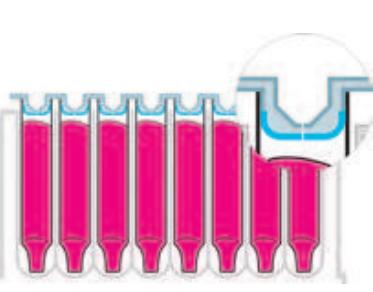
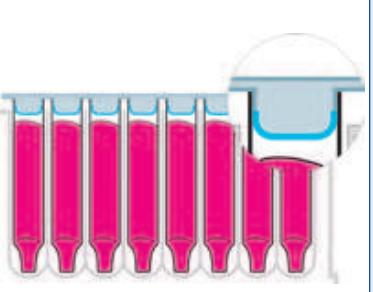
				
Art. No.	<b>08 09 0888</b>	<b>08 09 0909</b>	<b>08 09 0903</b>	<b>08 09 0875</b>
Description	0.35ml DW-Micro-Insert, 42.5 x 6mm, clear glass, 1 <sup>st</sup> hydrolyz. class, 17mm top	1ml SQW-Micro-Insert, 45.9 x 7.6mm, clear glass, 1 <sup>st</sup> hydrolyz. class, round bottom	0.8ml MTRS-Micro-Insert,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

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

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



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

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