

MACHEREY-NAGEL

# Vials and caps 2017

Chromatography



For reliable analysis

- Vials and inserts
- Closures and septa
- Accessories

**MACHEREY-NAGEL**

[www.mn-net.com](http://www.mn-net.com)



## Quality since 1911

Since 1911 MACHEREY-NAGEL and their products stand for high quality, innovation and reliability in chemical and bio-molecular analysis. Nowadays we offer an extensive product portfolio in the areas of filtration, rapid tests, water analysis, chromatography and bio analysis. MACHEREY-NAGEL is a family-owned company having the mission to fulfil the versatile requirements of our customers in an optimal way. Personal and competent advice as well as customer-friendly support belong to our philosophy as does the high quality of our products.

With approx. 600 employees and 40 labs we serve our customers all around the world, either directly or indirectly through our distribution channels in more than 150 countries (pls. see [www.mn-net.com/distributor](http://www.mn-net.com/distributor)). Our main headquarter is located in Düren (Germany) with subsidiaries in France, Switzerland and in the USA.



Filtration



Rapid Tests



Water Analysis



Chromatography



Bioanalysis

## Chromatography with MACHEREY-NAGEL – Complete solutions for analysis

MACHEREY-NAGEL has a long-term expertise in chromatography, as we have been involved in this business right from its beginnings. Today we are a supplier for all kinds of chromatography consumables, from sample preparation to final analysis. Our product range includes HPLC and GC columns as well as syringe filters, SPE cartridges or TLC plates.

Of course we also offer a comprehensive delivery program of autosampler vials and closures along with some accessories, like e.g. crimping tools.



HPLC



GC



TLC



SPE and Flash



Syringe filters



Vials and caps

## Vials and caps

MACHEREY-NAGEL offers a wide product range of vials, caps and accessories for chromatography. You can find for almost all autosamplers and applications the right product in our delivery program. In order to facilitate the correct selection of products, we have implemented some useful tools in the catalog (pls. see Autosampler Compatibility starting on page 58 and Real Size Drawings starting on page 58) as well as on our website (pls. see [www.mn-net.com/vialfinder](http://www.mn-net.com/vialfinder)).

MACHEREY-NAGEL Vials and caps for



GC and HPLC



Headspace

## Production

All our products are manufactured under strict hygienic conditions. Opto-electronical supervision at the glass processing machines ensures high quality for a safe analysis. Of course additional in-process controls and a final QC inspection are also part of the measurements which we have implemented to grant a reliable product quality.

Fully automated closure manufacturing with defined production parameters avoids variations in the physical and analytical condition of the most critical component of the analysis: the cap. Strict analytical specifications on the septa material allow only processing of such septa material that passes the comprehensive analytical tests in our lab.

All vials are made from 1<sup>st</sup> hydrolytic class glass except if explicitly stated otherwise. All septa material used for the production of closures or septa has – aside from physical inspection – also been tested analytically. Upon request certificates of conformity are available for all glass products and closures. Cost-free samples of all vials and caps can be asked for at any time.



Environmental analysis (TOC/VOC)



Sample storage



Fully automated production for safe and reliable consumables for chromatography

## Packaging

Vials and caps can be bought either as individual components with 100 pieces in a box respectively in a PE bag or alternatively in form of a Vial Kit as a set of 100 vials and closures in a drawer-like box. All packaging material we use is also strictly evaluated with regard to possible releases of contaminants to ensure that the products remain pure during storage for a safe and reliable analysis. We also took care that the zip lock bags for the closures as well as the boxes for the vials are resealable, so that consumers can protect the products against any contamination in the lab during consumption.



## Vial Kits

Vial Kits are a convenient way to stock both components, vials and caps, in a stackable, drawer-like box. As always both items are required for an analysis, it is a handy and easy packing system, requiring less administrative effort in comparison to the individual components.



By opening and closing the drawer, vials and caps are protected against any contamination from the lab environment until they are finished.

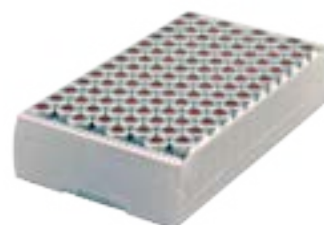
## Pre-sealed vial-closure combinations

Pre-sealed vial-closure combinations of any type are available as well. You can choose any type of vial with a closure of your choice and ask for your individual quotation for a pre-sealed combination of these.

Pre-sealing is done in-house under strict hygienic conditions.

## Certificate

In case you need certificates of conformity (CoC) for your ISO documentation, please do not hesitate to contact us at any time. Based on our own internal QC reports we can issue them batch related to the individual lot you bought from us. In order to give you an impression on how they look like, please see below an example of such a CoC.



MACHEREY-NAGEL	
XX-XX-201X	
<b>CERTIFICATE OF CONFORMITY</b>	
<b>MN REF:</b>	70213, Lot # XXXXXXXXXX
<b>MN Article description:</b>	1.5 mL Screw Neck Vial N 8 outer diameter: 11.6 mm outer height: 32 mm clear, flat bottom, small opening
<small>MACHEREY-NAGEL certifies that the above mentioned products have been manufactured against standards according to the valid specification, drawing and agreed lists of defects and that the specification limits have been met. The components have been manufactured with fully approved tooling. All required inspections and tests have been performed and the items delivered conform to the specifications of the order.</small>	
<small>MACHEREY-NAGEL furthermore confirms that the vials have been manufactured from 1<sup>st</sup> hydrolytic class glass which meets the requirements of analytical purity and chemical resistance needed when used in chromatography applications.</small>	
<small>MACHEREY-NAGEL is certified to EN ISO 9001:2008. A copy of this certificate can be provided upon request.</small>	
<small>MACHEREY-NAGEL GmbH &amp; Co. KG</small>	
	
<small>I.A. Gisela Lancé Market Manager Vials &amp; Caps</small>	
	



# Contents

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New products .....	6
Autosampler compatibility and cross-references .....	8
<b>N 8</b> Crimp neck vials and caps N 8 .....	18
<b>N 8</b> Screw neck vials, inserts and caps N 8 .....	19
<b>N 9</b> Screw neck vials, inserts and caps N 9 .....	21
<b>N 10</b> Screw neck vials, inserts and caps N 10 .....	25
<b>N 11</b> Crimp neck vials, inserts and caps N 11 .....	26
<b>N 11</b> Snap ring vials, inserts and caps N 11 .....	31
<b>N 13</b> Crimp neck vials and caps N 13 .....	34
<b>N 13</b> Screw neck vials, insert and caps N 13 .....	35
<b>DIV</b> Diverse vials and caps .....	36
<b>DIV</b> Shell vials N 8.....	36
<b>DIV</b> Snap cap vials (for storage of powdery samples) N 18 + N 22 with PE snap caps ...	36
<b>DIV</b> Screw neck vials and closed top screw closures for storage of liquid samples.....	37
<b>N 18</b> Headspace screw neck vials and magnetic screw caps N 18...	39
<b>N 20</b> Crimp neck vials and caps N 20 .....	40
<b>N 24</b> Screw neck vials and caps N 24 .....	45
<b>Yellow</b> Vial accessories and other consumables for chromatography ...	48
<b>Yellow</b> GC injection port septa .....	48
<b>Yellow</b> Capillary connectors for GC .....	48
<b>Yellow</b> Manual crimping tools - Standard .....	49
<b>Yellow</b> Manual decapper - Plier style, dual size .....	49
<b>Yellow</b> Manual crimping tools - Ergonomic.....	50
<b>Yellow</b> Electronic crimping tools - Battery-powered .....	50
<b>Yellow</b> Electronic crimping tools - High Power crimping tool .....	51
<b>Yellow</b> Vial containers .....	51
<b>Yellow</b> Vial racks.....	51
Numerical index .....	52
Practical tips for crimping .....	57
Real size drawings.....	58
General remarks .....	63

## New products

### Plastic vials with firmly integrated glass inserts

- Available in transparent and amber, as screw neck N 9 and snap ring / crimp neck N 11 versions
- Ready-to-use unit for easy and safe filling
- More robust and cost-efficient than the equivalent glass-in-glass systems
- Reliable centering of the 0.2 mL glass insert (upon request also with a silanized glass insert)
- Excellent sealing of the firmly integrated insert
- High transparency of the vial; good view on the filling level
- You can even write with permanent markers on the vial; no writing patch necessary



Firmly integrated 0.2 mL glass insert in plastic outer shell

### Extended range of plastic vials

- 1.5 mL transparent vial with filling lines for Dionex® and others
- 0.3 mL in transparent / amber, as screw neck N 9 and snap ring / crimp neck N 11 versions
- 0.7 mL in transparent as screw neck N 9 and snap ring / crimp neck N 11 versions
- General fields of application for plastic vials:  
Ion Chromatography (IC),  
heavy metal analysis,  
analysis of polar compounds, such as proteins, amines or phenols,  
analysis of aqueous and pH-sensitive samples in HPLC,  
Atomic Absorption Spectrometry (AAS) and  
in Capillary Electrophoresis (CE + CE/MS)



1.5 mL polypropylene screw neck vial N 9

### Pre-assembled vial-insert combinations (glass)

- Ready-to-use alternative to firmly integrated inserts (glass-in-glass or glass-in-plastic systems)
- Insertion of the insert under strict hygienic conditions

### Pre-sealed vial-closure combinations with screw neck N 24

- Generally all EPA screw neck vials N 24 can be supplied pre-sealed with a closure of your choice.
- Pre-sealed vial-closure combinations avoid contamination in the lab during consumption (→ important in TOC/VOC)
- Most typical combination: 40 mL vial 702023 pre-sealed with bonded Silicone / PTFE center hole closure 702058 → 702877



Pre-sealed screw neck vials N 24

### Magnetic screw closure N 9 for CTC GC PAL and equivalent autosamplers

- 9 mm blue PP screw cap with magnetic cover on top for safe transportation of the vial via magnet
- Available with Silicone / PTFE; upon request also with other septa materials
- Smooth screwing and excellent tightness



Magnetic screw closure N 9

## New products

### 11 mm crimp closures with colored caps

- Cap colors: green, red and blue
- Available for Red Rubber / FEP, Silicone / PTFE, PTFE / Silicone / PTFE and Natural Rubber / Butyl / TEF
- Upon request also for Silicone / PTFE cross-slit
- Application: color-coding of different samples, shifts or labs



Colored crimp closures N 11

### Total phthalate free (TPF) 11 mm crimp closure

- Ready assembled crimp closure N 11 with an elastomer and halogen-free septa material for single injection, packed in phthalate-free glass containers
- Good sealing and crimping due to the inserted O-ring
- Suitable for trace analysis (GC/MS, LC/MS), as no ghost peaks can be caused by any plasticizers
- Applications: Phthalate analysis, elastomer and plastomer analysis, analysis of fluorinated/halogenated organic compounds, VOC (volatile organic compounds), analysis of polymerisation catalysts, silicone and silicate analysis



Total phthalate free crimp closure N 11

### Dual size decapper N 11 / N 20 plier style

- Simple and economic decapper for two cap sizes (N 11 and N 20)
- Plier style
- Suitable for aluminium and bimetal crimp caps, not for magnetic ones
- Low weight
- Anti-slip handles



Dual size decapper (plier style)

### Vial container for EPA screw neck vials N 24

- Space-saving storage of vials in the fridge without any risk of possible condensations (contaminations) on the septa in the area of the center hole
- Safe standing position in a divider designed according to the vials' diameter
- Stackable
- Temperature resistant from -80 °C up to 100 °C



Vial container for screw neck vials N 24

### Vial racks for vials with a diameter of 12 mm and of 15 mm max.

- For transportation and a safe standing position of vials on the lab bench
- Made from chemically resistant PP
- Stackable
- 50 cavities per rack; sold by 1 pcs.
- Alternative to vial containers, however, without a protective lid.



Vial Rack for 1.5 mL vials

# Autosampler compatibility and cross-references

Agilent®

Main chapter	Pages	Most popular MN products for use on Agilent® instruments (comparable product nos. of Agilent® in brackets)	
<b>GC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<a href="#">70282</a> (5180-0841/500), <a href="#">70286</a> (5180-0844/500)
	18	Closures:	<a href="#">70289</a> (5180-0842/500), <a href="#">702878</a> (5183-4490/500)
■ N 9 Screw (standard samples)	21	Vials:	<a href="#">702282</a> (5182-0714/100; 5183-2067/1000), <a href="#">702293</a> (5188-6535/100; 5188-6536/1000), <a href="#">702283</a> (5182-0715/100; 5183-2068/1000), <a href="#">702078</a> (5183-2071/100), <a href="#">702284</a> (5182-0716/100; 5183-2069/1000), <a href="#">702079</a> (5183-2072/100), <a href="#">702006</a> (5183-2030/100), <a href="#">702088</a> (5184-3550/100), <a href="#">702007</a> (5188-6591/100), <a href="#">702008</a> (5188-6592/100), <a href="#">702135</a> (5188-5390/100), <a href="#">702335</a> , <a href="#">702009</a> (5190-2242/100; 5190-2243/1000), <a href="#">702172</a> , <a href="#">702010</a> , <a href="#">702500</a>
	21	Inserts:	<a href="#">702716</a> (5183-2085/100), <a href="#">702813</a> (9301-1387/500), <a href="#">702077</a> , <a href="#">702818</a> (5181-1270/100), <a href="#">702818.1</a> (5181-8872/100), <a href="#">702825</a> (5181-3377/500)
	22, 23	Closures:	<a href="#">702732</a> (5182-0717/100; 5185-5820/500; 5190-1599/1000), <a href="#">702080</a> (5185-5838/100), <a href="#">702082</a> (5182-0718/100; 5185-5829/500), <a href="#">702081</a> (5182-0719/100), <a href="#">702287.1</a> (5182-0720/100; 5185-5863/500), <a href="#">702037</a> (5182-0722/100), <a href="#">702038</a> (5182-0721/100; 5185-5864/500), <a href="#">702035</a> (5182-0723/100; 5185-5862/500), <a href="#">702084</a> (5182-0725/100), <a href="#">702085</a> (5182-0724/100; 5185-5861/500), <a href="#">702026</a> (5185-5823/100), <a href="#">702155</a> (for GC PAL)
■ N 11 Crimp (standard samples)	26, 27	Vials:	<a href="#">70201HP</a> (5181-3375/100; 5183-4491/1000), <a href="#">70201HP.2</a> , <a href="#">702885</a> (5182-0543/100; 5183-4492/1000), <a href="#">702075</a> (5183-4495/100), <a href="#">702892</a> (5181-3376/100; 5183-4493/1000), <a href="#">702076</a> (5183-4496/100), <a href="#">702888</a> (5182-3454/100), <a href="#">702015</a> (5184-3551/100), <a href="#">702016</a> (5184-3555/100), <a href="#">702891</a> (9301-1388/100), <a href="#">702014</a> (5188-6572/100), <a href="#">702134</a> , <a href="#">702334</a>
	26	Inserts:	As indicated under <i>Screw N 9 – Inserts</i>
	28	Closures:	<a href="#">70256</a> , <a href="#">702730</a> , <a href="#">702001</a> (for all see 5181-1210/100; 5061-3370/500; 5183-4498/1000), <a href="#">702730.3</a> (5181-1215/100), <a href="#">702730.1</a> (5181-1216/100), <a href="#">702730.2</a> (5181-1217/100), <a href="#">70288</a> (5182-0552/100; 5183-4500/1000), <a href="#">702995</a> (5181-1211/100; 5183-4499/1000), <a href="#">702146</a> (5181-1212), <a href="#">702879</a> (5188-5386/100, for GC PAL)
<b>HPLC</b>			
■ N 9 Screw (standard samples)	21	Vials:	As indicated under <i>GC – Screw N 9 – Vials</i>
	21	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	22, 23	Closures:	<a href="#">702732</a> (5182-0717/100; 5185-5820/500; 5190-1599/1000), <a href="#">702080</a> (5185-5838/100), <a href="#">702082</a> (5182-0718/100; 5185-5829/500), <a href="#">702081</a> (5182-0719/100), <a href="#">702287.1</a> (5182-0720/100; 5185-5863/500), <a href="#">702037</a> (5182-0722/100), <a href="#">702038</a> (5182-0721/100; 5185-5864/500), <a href="#">702084</a> (5182-0725/100), <a href="#">702035</a> (5182-0723/100; 5185-5862/500), <a href="#">702040</a> (5183-2078/100), <a href="#">702085</a> (5182-0724/100; 5185-5861/500), <a href="#">702083</a> (5183-2077/100), <a href="#">702288.1</a> (5183-2076/100; 5185-5865/500), <a href="#">702026</a> (5185-5823/100), <a href="#">702027</a> (5185-5824/100; 5040-4649/500)
■ N 11 Crimp (standard samples)	26, 27	Vials:	As indicated under <i>GC – Crimp N 11 – Vials</i>
	26	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	28	Closures:	As indicated under <i>GC – Crimp N 11 – Closures, however, not 702146 and 702879</i>
■ N 11 Snap (standard samples)	31	Vials:	<a href="#">702714</a> (5182-0544/100; 5183-4504/1000), <a href="#">702713</a> (5182-0546/100; 5183-4505/1000), <a href="#">702712</a> (5182-0545/100; 5183-4506/1000), <a href="#">702709</a> (5188-6593/100), <a href="#">702134</a> (9301-0977/100; 9301-0978/1000), <a href="#">702334</a> , <a href="#">702809</a> (5188-2788/100; 5190-3155/1000), <a href="#">702173</a> , <a href="#">702174</a> (5182-0567/100)
	31	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	32	Closures:	<a href="#">702731</a> (5182-0550/100; 5182-0564/500), <a href="#">702063</a> , <a href="#">702063.2080</a> (for both see 5182-3458/100), <a href="#">702710.1</a> , <a href="#">702710.2080</a> (for both see 5182-0541/100; 5185-5916/500), <a href="#">702064</a> (5183-4511/100), <a href="#">702718</a> (5182-0566/100)

# Autosampler compatibility and cross-references

Agilent®

Main chapter	Pages		Most popular MN products for use on Agilent® instruments (comparable product nos. of Agilent® in brackets)
<b>Headspace</b>			
■ N 18 Screw (Combi PAL + G 1888A)	39	Vials:	<a href="#">702866</a> (5188-5392/100), <a href="#">702826</a> (5188-2753/100), <a href="#">702826.2</a> (5188-6537/100)
	39	Closures:	<a href="#">702055</a> (5188-2759/100)
■ N 20 Crimp	40	Vials:	<a href="#">702918</a> (5182-0838/100), <a href="#">702261</a> (5182-0837/100), <a href="#">702924</a> (5183-4475/100 for Combi PAL), <a href="#">702263</a> (5183-4474/100 for Combi PAL), <a href="#">702263.2</a> (5190-2239/100 for Combi PAL)
	42, 43, 44	Closures:	<a href="#">70234</a> , <a href="#">70234.10</a> (for both see 5183-4479/100; 5190-2258/1000), <a href="#">702071</a> (5183-4480/100), <a href="#">702094</a> (5183-4477/100; 5190-2257/1000), <a href="#">702835</a> (5183-4478/100), <a href="#">702931</a> (5183-4476/100) + <a href="#">702804</a> (9301-0721/100) = <a href="#">70237</a> , <a href="#">702929</a> (5190-3987/100 for Combi PAL)

## CTC

Main chapter	Pages		Most popular MN products for use on CTC instruments
<b>GC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<a href="#">70282</a> , <a href="#">70286</a> , <a href="#">70212.1</a> , <a href="#">702002</a> , <a href="#">702003</a>
	18	Closures:	<a href="#">70289</a> , <a href="#">702878</a>
■ N 9 Screw (standard samples)	21	Vials:	<a href="#">702282</a> , <a href="#">702293</a> , <a href="#">702283</a> , <a href="#">702284</a> , <a href="#">702078</a> , <a href="#">702079</a> , <a href="#">702006</a> , <a href="#">702007</a> , <a href="#">702008</a> , <a href="#">702135</a> , <a href="#">702335</a>
	21	Inserts:	<a href="#">702716</a> , <a href="#">702813</a> , <a href="#">702077</a> , <a href="#">702818</a> , <a href="#">702818.1</a> , <a href="#">702825</a>
	22, 23	Closures:	<a href="#">702287</a> , <a href="#">702287.1</a> , <a href="#">702036</a> , <a href="#">702037</a> , <a href="#">702038</a> , <a href="#">702107</a> , <a href="#">702026</a> , <a href="#">702286</a> , <a href="#">702035</a> , <a href="#">702158</a> , <a href="#">702084</a> , <a href="#">702085</a> , <a href="#">702159</a> , <a href="#">702155</a> (for GC PAL)
■ N 11 Crimp (standard samples)	26, 27	Vials:	<a href="#">70201HP</a> , <a href="#">70201HP.2</a> , <a href="#">702885</a> , <a href="#">702892</a> , <a href="#">702075</a> , <a href="#">702076</a> , <a href="#">702888</a> , <a href="#">702891</a> , <a href="#">702014</a> , <a href="#">702134</a> , <a href="#">702334</a>
	26	Inserts:	As indicated under <i>Screw N 9 – Inserts</i>
	28	Closures:	<a href="#">70288</a> , <a href="#">702995</a> , <a href="#">702879</a> (for GC PAL)
<b>HPLC</b>			
■ N 9 Screw (standard samples)	21	Vials:	As indicated under <i>GC – Screw N 9 – Vials</i>
	21	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	22, 23	Closures:	<a href="#">702287</a> , <a href="#">702287.1</a> , <a href="#">702036</a> , <a href="#">702037</a> , <a href="#">702038</a> , <a href="#">702107</a> , <a href="#">702026</a> , <a href="#">702288</a> , <a href="#">702288.1</a> , <a href="#">702039</a> , <a href="#">702040</a> , <a href="#">702083</a> , <a href="#">702109</a> , <a href="#">702027</a> , <a href="#">702286</a> , <a href="#">702035</a> , <a href="#">702158</a> , <a href="#">702084</a> , <a href="#">702085</a> , <a href="#">702159</a>
■ N 11 Crimp (standard samples)	26, 27	Vials:	As indicated under <i>GC – Crimp N 11 – Vials</i>
	26	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	28	Closures:	<a href="#">70288</a> , <a href="#">702995</a> , <a href="#">702823</a>
■ N 11 Snap (standard samples)	31	Vials:	<a href="#">702714</a> , <a href="#">702713</a> , <a href="#">702712</a> , <a href="#">702709</a> , <a href="#">702134</a> , <a href="#">702334</a> , <a href="#">702809</a> , <a href="#">702173</a> , <a href="#">702174</a>
	31	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	32	Closures:	<a href="#">702710.1</a> , <a href="#">702717.2</a> , <a href="#">702718.1</a> , <a href="#">702710</a> , <a href="#">702064</a> , <a href="#">702718</a> , <a href="#">702710.2080</a> , <a href="#">702717.2080</a> , <a href="#">702718.2080</a>
<b>Headspace</b>			
■ N 18 Screw (Combi PAL)	39	Vials:	<a href="#">702866</a> , <a href="#">702826</a> , <a href="#">702826.2</a>
	39	Closures:	<a href="#">702827</a> , <a href="#">702055</a>
■ N 20 Crimp	40	Vials:	<a href="#">702924</a> , <a href="#">702263</a> , <a href="#">702263.2</a>
	42, 43, 44	Closures:	<a href="#">702929</a> , <a href="#">702834</a> For washer bottle <a href="#">702924</a> : <a href="#">70267</a> + <a href="#">702144</a>

# Autosampler compatibility and cross-references

## Dionex® (Thermo Scientific®)

Main chapter	Pages	Most popular MN products for use on Dionex® instruments	
<b>HPLC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	702880, 70282, 70286
	18	Closures:	702025, 70289
■ N 8 Screw (standard samples)	19	Vials:	70213, 70213.2, 702004, 702893, 702860
	19	Inserts:	702968, 702968.1, 702824, 702005
	20	Closures:	70245, 702437
■ N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702007, 702008, 702135, 702335, 702006, 702009, 702172, 702010, 702500
	21	Inserts:	702813, 702077, 702818, 702818.1, 702825
	22, 23	Closures:	702287.1, 702287, 702036, 702037, 702038, 702107, 702288.1, 702288, 702039, 702040, 702083, 702109, 702026, 702027
■ N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334
	26	Inserts:	As indicated under <i>Screw N 9 – Inserts</i>
	28	Closures:	70288, 702823, 70256
■ N 11 Snap (standard samples)	31	Vials:	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174
	31	Inserts:	As indicated under <i>Screw N 9 – Inserts</i>
	32	Closures:	702710.1, 702710, 702710.2080, 702717.2, 702064, 702717.2080
■ N 13 Screw (large sample volumes)	35	Vials:	702962, 702973
	35	Inserts:	702972 + spring 702974
	35	Closures:	702926

## Knauer

Main chapter	Pages	Most popular MN products for use on Knauer instruments	
<b>HPLC (Knauer S3950, Knauer UHPLC Version AS-1, Knauer Optimas):</b>			
■ N 8 Screw (standard samples)	19	Vials:	70213, 70213.2, 702004, 702893
	19	Inserts:	702968, 702968.1, 702824, 702005
	20	Closures:	702067, 70245
■ N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335, 702088, 702009, 702172, 702010, 702500
	21	Inserts:	702813, 702077, 702716, 702818, 702818.1, 702825
	22, 23	Closures:	702732, 702030, 702080, 702081, 702082, 702147, 702287.1, 702287, 702036, 702037, 702038, 702107, 702028, 702026
■ N 18 Screw (large sample volumes)	39	Vials:	702866
	39	Closures:	702072, 702055, 702827
■ N 20 Crimp (large sample volumes)	40	Vials:	702918
	42, 43, 44	Closures:	702094, 702129



# Autosampler compatibility and cross-references

PerkinElmer®

Main chapter	Pages	Most popular MN products for use on PerkinElmer® instruments (comparable product nos. of PE in brackets)	
<b>GC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<a href="#">70251</a> (N9301069/200)
	18	Closures:	<a href="#">70252.1</a> , <a href="#">702025</a> (for both see 03300806 /1000)
■ N 11 Crimp (standard samples)	26	Vials:*	<a href="#">70201CG</a> (N9301385), <a href="#">70214CG</a> (N9302680)
	26	Inserts:*	<a href="#">702824</a> (N9300705), <a href="#">702005</a> (N9300706)
* small opening	26, 27	Vials:**	<a href="#">70201HP</a> (N9306231), <a href="#">70201HP.2</a> , <a href="#">702885</a> (N9306223), <a href="#">702892</a> (N9302679), <a href="#">702075</a> (N9304135), <a href="#">702076</a> (N9304136), <a href="#">702891</a> (N9300709), <a href="#">702014</a> (N9300710), <a href="#">702134</a> , <a href="#">702334</a>
** wide opening	26	Inserts:**	<a href="#">702818</a> (N9300703), <a href="#">702818.1</a> , <a href="#">702825</a> (N9300704)
	28	Closures:	<a href="#">702730</a> (N9306230), <a href="#">70256</a> (N9306015), <a href="#">702730.1</a> (N9302684), <a href="#">702730.2</a> (N9302685), <a href="#">702730.3</a> (N9302686), <a href="#">70288</a> (N9306228), <a href="#">702995</a> (N9306229)
<b>HPLC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<a href="#">70286</a> (N9302136/500)
	18	Closures:	<a href="#">70252.1</a> , <a href="#">702025</a> (for both see 03300806/1000)
■ N 8 Screw (standard samples)	19	Vials:	<a href="#">70213</a> (N9302945), <a href="#">70213.2</a> , <a href="#">702004</a> , <a href="#">702892</a>
	19	Inserts:	<a href="#">702824</a> (N9300705), <a href="#">702005</a> (N9300706)
	20	Closures:	<a href="#">702067</a> = <a href="#">70249</a> (N9303441) + <a href="#">702070</a> (N9303442), <a href="#">70245</a> (N9303449)
■ N 9 Screw (standard samples)	21	Vials:	<a href="#">702282</a> (N9306201), <a href="#">702293</a> (N9306220), <a href="#">702283</a> (N9307801), <a href="#">702078</a> (N9304139), <a href="#">702079</a> (N9304140), <a href="#">702284</a> (N9307802), <a href="#">702009</a> , <a href="#">702172</a> , <a href="#">702010</a> , <a href="#">702500</a> , <a href="#">702007</a> (N9300715), <a href="#">702008</a> (N9300716), <a href="#">702135</a> , <a href="#">702335</a>
	21	Inserts:	<a href="#">702818</a> (N9300703), <a href="#">702818.1</a> , <a href="#">702825</a> (N9300704)
	22, 23	Closures:	<a href="#">702288.1</a> , <a href="#">702027</a> (for both see N9306203), <a href="#">702287.1</a> , <a href="#">702026</a> (for both see N9306202), <a href="#">702732</a> , <a href="#">702028</a> (for both see N9306200)
■ N 10 Screw (standard samples)	25	Vials:	<a href="#">702012</a> (N9306053), <a href="#">702013</a> (N9306057)
	25	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	25	Closures:	<a href="#">702047</a> (N9306052), <a href="#">702044</a> (N9306206), <a href="#">702045</a> , <a href="#">702046</a> (for both see N9306205)
■ N 11 Crimp (standard samples)	26, 27, 28	Vials/ Inserts/ Closures:	As indicated under <b>GC – Crimp N 11</b>
■ N 11 Snap (standard samples)	31	Vials:	<a href="#">702714</a> (N9303418), <a href="#">702713</a> (N9306207), <a href="#">702712</a> (N9306208), <a href="#">702709</a> (N9300711), <a href="#">702134</a> , <a href="#">702334</a>
	31	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	32	Closures:	<a href="#">702064</a> (N9303416), <a href="#">702710</a> (N9303419), <a href="#">702718</a> (N9303417)
<b>Headspace</b>			
■ N 18 Screw (for Combi PAL + TurboMatrix™ HS 16 + 40)	39	Vials:	<a href="#">702866</a> (N6356479), <a href="#">702826</a> (N9306075/100; N9306078/1000), <a href="#">702826.2</a>
	39	Closures:	<a href="#">702055</a> (N6356476), <a href="#">702827</a> (N6356475), <a href="#">702072</a> (N6356477)
■ N 20 Crimp (for Combi PAL)	40	Vials:	<a href="#">702924</a> (N6356478), <a href="#">702263</a> (N6356471), <a href="#">702263.2</a>
	43	Closures:	<a href="#">702929</a> (N6356559; N6356558), <a href="#">702834</a> (N6356566; N6356565), <a href="#">702928.9</a> (N6356562), <a href="#">702928</a> , <a href="#">702774</a> (for both see N6356560)
■ N 20 Crimp (for TurboMatrix™ HS 16, 40 + 110) *** not suitable for TurboMatrix™ 110	40	Vials:	<a href="#">702917***</a> (N9302134/125), <a href="#">70254</a> (N9306079/100; B0104236/1000), <a href="#">702540</a> (N9303349/100; N9303348/1000), <a href="#">702541</a>
	42, 43, 44	Closures:	<a href="#">702836</a> , <a href="#">702773</a> (for both see B0104239/100‡; B0104240/1000‡, B4000025/1000‡), <a href="#">702829</a> , <a href="#">70234.8</a> , <a href="#">702775</a> , <a href="#">70234.9</a> (for all see N9306264/1000‡; N9306266/100‡; N9306267/1000‡), <a href="#">702835</a> , <a href="#">702927</a> , <a href="#">702094</a> , <a href="#">702093</a> (for all see B0104241/100‡; B0104242/1000‡; B4000022/1000‡), <a href="#">702145</a> (B0104243/100‡; B0104244/1000‡, B4000028/1000), <a href="#">702931</a> (B0038137) + <a href="#">702804</a> (B0099814), <a href="#">70237</a> (B0110728/1000), <a href="#">70234</a> , <a href="#">70234.10</a> (for both see N9306224/1000)
‡ Alternative MN product			

# Autosampler compatibility and cross-references

Shimadzu®

Main chapter	Pages	Most popular MN products for use on Shimadzu® instruments (comparable product nos. of Shimadzu® in brackets)
<b>GC</b>		
■ N 8 Crimp (microsampling)	18	Vials: 70282, 70286, 70212.1, 702002, 702003
	18	Closures: 70289, 702878
■ N 9 Screw (standard samples)	21	Vials: 702282, 702293, 702283 (EU: 980-08337/1000), 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335
	21	Inserts: 702716, 702813 (EU: 980-04987/100), 702077, 702825, 702818 (US: 220-91521-04/100; EU: 980-01707/1000), 702818.1
	22, 23	Closures: 702081 (EU: 980-08339/1000), 702036, 702037, 702038, 702107, 702287.1 (EU: 980-08338/1000; US: 228-45454-91/1000), 702026, 702155 (for AOC5000)
■ N 10 Screw (standard samples)	25	Vials: 702011, 702012, 702013
	25	Inserts: As indicated under <i>Screw N 9 – Inserts</i>
	25	Closures: 702045, 702046, 702048
■ N 11 Crimp (standard samples)	26, 27	Vials: 70201HP (EU: 980-01705/1000), 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334, 702141
	26	Inserts: As indicated under <i>Screw N 9 – Inserts</i>
	28	Closures: 70288 (EU: 980-05740/1000), 702995, 702879 (EU: 980-01706/1000 for AOC5000)
■ N 13 Screw (large sample volumes)	35	Vials: 702962 (US: 220-90393-00/100; 221-34267-92/50), 702973
	35	Inserts: 702972 (US: 228-21285-91/100) + spring 702974
	35	Closures: 702926 (US: 220-91521-14/1000), 702963 (US: 221-34268-92/50) + 702292 (US: 221-34266-92/50; 228-21290-91/100)
<b>HPLC</b>		
■ N 8 Crimp (microsampling)	18	Vials: 70282, 70286
	18	Closures: 70289, 702878
■ N 9 Screw (standard samples)	21	Vials: As indicated under <i>GC – Screw N 9 – Vials</i>
	21	Inserts: As indicated under <i>GC – Screw N 9 – Inserts</i>
	22, 23	Closures: 702287.1 (EU: 980-08338/1000; US: 228-45454-91/1000), 702036, 702037, 702038, 702107, 702026, 702039, 702040, 702083, 702288.1 (US: 220-91521-16/1000), 702109, 702027
■ N 10 Screw (standard samples)	25	Vials: 702011, 702012, 702013
	25	Inserts: As indicated under <i>GC – Screw N 9 – Inserts</i>
	25	Closures: 702045, 702046, 702047
■ N 11 Crimp (standard samples)	26, 27	Vials: As indicated under <i>GC – Crimp N 11 – Vials</i>
	26	Inserts: As indicated under <i>GC – Screw N 9 – Inserts</i>
	28	Closures: 70288 (EU: 980-05740/1000), 702823
■ N 11 Snap (standard samples)	31	Vials: 702714, 702713, 702712, 702709, 702134, 702334
	31	Inserts: As indicated under <i>GC – Screw N 9 – Inserts</i>
	32	Closures: 702710.1, 702710, 702710.2080, 702717.2, 702064, 702717.2080
■ N 8, N 11 Shell Vials (standard samples)	36	Vials + Plugs: 70202.1 + 702807, 702017 + 702807
<b>Headspace</b>		
■ N 18 Screw (AOC 5000)	39	Vials: 702866 (US: 220-94796-07/100; EU: 980-00247/1000), 702826.2, 702826 (US: 220-94796-01/100; EU: 961-00915/1000; EU: 961-01122/100)
	39	Closures: 702055 (US: 220-94796-02/100; EU: 961-00914/1000; EU: 961-01123/100), 702827 (EU: 980-01708/1000)
■ N 20 Crimp (AOC 5000)	40	Vials: 702924 (EU: 980-00664/1000), 702263 (EU: 980-00111/1000), 702263.2
	42, 43,	Closures: 702929 (EU: 961-01256/1000), 702928 (EU: 980-00112/1000),
	44	702834 (EU: 980-03372/1000), Closure for washer bottle 702924: 70267 + 702144

# Autosampler compatibility and cross-references

Thermo Scientific®

Main chapter	Pages		Most popular MN products for use on Thermo Scientific® instruments (comparable product nos. of Thermo Scientific® in brackets)
<b>GC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<a href="#">70282</a> , <a href="#">70286</a> , <a href="#">70251</a> (60180-707/1000), <a href="#">702880</a> (60180-501/125)
	18	Closures:	<a href="#">70289</a> (60180-525/100; 60180-709/1000), <a href="#">702025</a> (60180-708/1000†)
■ N 8 Screw (standard samples)	19	Vials:	<a href="#">70213</a> , <a href="#">70213.2</a> , <a href="#">702004</a> (60180-508/100; 60180-714/1000), <a href="#">702893</a> (60180-560/100; 60180-715/1000)
	19	Inserts:	<a href="#">702968</a> (60180-265), <a href="#">702968.1</a> , <a href="#">702824</a> (60180-721/1000), <a href="#">702005</a> (60180-722/1000)
	20	Closures:	<a href="#">702067</a> (60180-665/100; 60180-720/1000†), <a href="#">70245</a> (60180-667/100; 60180-719/1000†), <a href="#">702069</a> (60180-666/100†)
■ N 9 Screw (standard samples)	21	Vials:	<a href="#">702282</a> (60180-723/1000), <a href="#">702283</a> (60180-509/100), <a href="#">702293</a> (60180-724/1000), <a href="#">702284</a> (60180-561/100; 60180-724/1000), <a href="#">702078</a> , <a href="#">702079</a> , <a href="#">702006</a> , <a href="#">702007</a> (60180-507), <a href="#">702008</a> , <a href="#">702135</a> , <a href="#">702335</a> , <a href="#">702009</a> , <a href="#">702172</a> , <a href="#">702010</a> , <a href="#">702500</a>
	21	Inserts:	<a href="#">702716</a> (60180-266/100), <a href="#">702813</a> , <a href="#">702077</a> , <a href="#">702818</a> (60180-734/1000), <a href="#">702818.1</a> , <a href="#">702825</a> (60180-735/1000)
	22, 23	Closures:	<a href="#">702732</a> (60180-728/1000), <a href="#">702081</a> (60180-669†), <a href="#">702084</a> (60180-670†), <a href="#">702287.1</a> (60180-729/1000), <a href="#">702037</a> (60180-671†), <a href="#">702026</a> (60180-673†), <a href="#">702155</a> (for GC PAL)
■ N 11 Crimp (standard samples)	26, 27	Vials:	<a href="#">70201HP</a> , <a href="#">70201HP.2</a> , <a href="#">702885</a> (60180-502/100; 60180-701/1000), <a href="#">702892</a> (60180-702/1000), <a href="#">702075</a> , <a href="#">702076</a> , <a href="#">702888</a> , <a href="#">702891</a> , <a href="#">702014</a> , <a href="#">702134</a> , <a href="#">702334</a>
	26	Inserts:	As indicated under <i>Screw N 9 – Inserts</i>
	28	Closures:	<a href="#">70256</a> , <a href="#">702730</a> (for both see 60180-705/1000), <a href="#">70288.3</a> (60180-526/100†), <a href="#">70288</a> (60180-706/1000), <a href="#">702879</a> (for GC PAL)
<b>HPLC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<a href="#">70282</a> , <a href="#">70286</a> , <a href="#">702880</a> (60180-501/125)
	18	Closures:	<a href="#">70289</a> (60180-525/100; 60180-709/1000), <a href="#">702025</a> (60180-708/1000†)
■ N 8 Screw (standard samples)	19, 20	Vials / Inserts / Closures:	As indicated under <i>GC – Screw N 8</i>
■ N 9 Screw (standard samples)	21, 22, 23	Vials / Inserts / Closures:	As indicated under <i>GC – Screw N 9</i> , additionally closures <a href="#">702040</a> (60180-672†) and <a href="#">702027</a> (60180-674†), however, not closure <a href="#">702155</a>
■ N 11 Crimp (standard samples)	26, 27, 28	Vials / Inserts / Closures:	As indicated under <i>GC – Crimp N 11</i> , however, not closure <a href="#">702879</a>
■ N 11 Snap (standard samples)	31	Vials:	<a href="#">702714</a> (60180-710/1000), <a href="#">702713</a> , <a href="#">702712</a> (60180-711/1000†), <a href="#">702709</a> , <a href="#">702134</a> , <a href="#">702334</a> , <a href="#">702809</a> , <a href="#">702173</a> , <a href="#">702174</a>
	31	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	32	Closures:	<a href="#">702063.2080</a> (60180-676†), <a href="#">702063</a> (60180-712/1000), <a href="#">702710.2080</a> , <a href="#">702710.1</a> (for both see 60180-713/1000), <a href="#">702717.2080</a> (60180-678†), <a href="#">702710.2080</a> (60180-677†)
<b>Headspace</b>			
■ N 18 Screw (for Combi PAL)	39	Vials:	<a href="#">702866</a> , <a href="#">702826</a> , <a href="#">702826.2</a>
	39	Closures:	<a href="#">702055</a> , <a href="#">702827</a>
■ N 20 Crimp (for Combi PAL)	40	Vials:	<a href="#">702924</a> (60180-740/1000; 60180-504/125†), <a href="#">702263</a> (60180-741/1000; 60180-506/125†), <a href="#">702263.2</a>
	42, 43, 44	Closures:	<a href="#">702929</a> , <a href="#">702834</a> (60180-520; 60180-519 + 60180-521)
■ N 20 Crimp (for HS850, HS200, Triplus HS)	40	Vials:	<a href="#">702924</a> (60180-740/1000; 60180-504/125†), <a href="#">702263</a> (60180-741/1000; 60180-506/125†), <a href="#">702263.2</a>
	42, 43, 44	Closures:	<a href="#">702775</a> , <a href="#">70234.9</a> , <a href="#">702773</a> (for all see 60180-513/100; 60180-746/1000), <a href="#">702931</a> (60180-744/1000) + <a href="#">702804</a> (60180-512) = <a href="#">70237</a> , <a href="#">702093</a> (60180-511)
† Alternative MN product			

# Autosampler compatibility and cross-references

## Varian® (Agilent®)

Main chapter	Pages	Most popular MN products for use on Varian® instruments (now Agilent®; comparable product nos. of Varian® → Agilent® CrossLab in brackets)	
<b>GC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<b>70282</b> (CP958690 → 8010-0155/500), <b>702002</b> , <b>70286</b> (CP959485 → 8010-0154/500), <b>702003</b> (→ 8010-0153/1000)
	18	Closures:	<b>70289</b> (CP959183), <b>702878</b>
■ N 8 Screw (standard samples)	19	Vials:	<b>70213</b> (392611639/100; 392620550/1000; CP 10271/100 → 8010-0011), <b>70213.2</b> (392611640/100; 392620552/1000 → 8010-0013), <b>702004</b> (→ 8010-0010), <b>702893</b> (CP959895 → 8010-0012)
	19	Inserts:	<b>702968.1</b> (392611593/100; 392620546/1000 → 8010-0125), <b>702824</b> (392611591/100; 392620548/1000 → 8010-0124), <b>702005</b> (→ 8010-0126)
	20	Closures:	<b>702067</b> (392611645/100; 392620559/1000 → 8010-0064‡), <b>70245</b> (392611641/100; 392620558/1000 → 8010-0054), <b>702069</b> (392611644 → 8010-0063‡)
■ N 9 Screw (standard samples)	21	Vials:	<b>702282</b> (392611653/100; 392620500/1000; 392611646/100 → 8010-0015), <b>702293</b> (392611654/100; 392620502/1000 → 8010-0017), <b>702283</b> (CP10291; 392620500/1000 → 8010-0014/100; 8010-0175/1000), <b>702284</b> (CP10292 → 8010-0016/100; 8010-0176/1000), <b>702078</b> (392611655/100; 392620501/1000), <b>702006</b> (CP959946), <b>702079</b> (392611879/100; 392620503/1000), <b>702008</b> (→ 8010-0009), <b>702007</b> (392620514 → 8010-0008), <b>702135</b> (→ 8010-0162), <b>702335</b> , <b>702009</b> (→ 8010-0161/100; 8010-0194/1000), <b>702172</b> , <b>702010</b> , <b>702500</b> (CP14959)
	21	Inserts:	<b>702813</b> (392611596/100; 392620536/1000; CP10580 → 8010-0132), <b>702077</b> (392611855/100; 392620537/1000), <b>702818</b> (392611594/100; 392620538/1000 → 8010-0131), <b>702818.1</b> (392611595/100; 392620539/1000), <b>702825</b> (CP912322 → 8010-0136/500)
	22, 23	Closures:	<b>702732</b> (CP914610), <b>702081</b> , <b>702287.1</b> (CP958914 → 8010-0086), <b>702037</b> (392611659/100 → 8010-0088), <b>702035</b> (→ 8010-0087), <b>702084</b> (392611658 → 8010-0089), <b>702155</b> (for GC PAL)
■ N 11 Crimp (standard samples)	26, 27	Vials:	<b>70201HP</b> (392611634/100; 392620517/1000; CP10525 → 8010-0002), <b>70201HP.2</b> (392611635/100; 392620519/1000), <b>702885</b> (CP10601 → 8010-0001/100; 8010-0170/1000), <b>702892</b> (CP10701 → 8010-0003/100; 8010-0172/1000), <b>702075</b> , <b>702076</b> , <b>702888</b> , <b>702891</b> (392620525 → 8010-0006), <b>702014</b> (→ 8010-0007), <b>702134</b> (→ 8010-0160), <b>702335</b>
	26	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	28	Closures:	<b>70256</b> , <b>702730</b> (for both see 392611632/100; 392620524/1000; CP10210 → 8010-0045/100; 8010-0181/1000), <b>702730.1</b> (→ 8010-0047), <b>702730.2</b> (→ 8010-0048), <b>702730.3</b> (→ 8010-0046), <b>70288</b> (392611631/100; 392620523/1000, 392620521/100; 392620522/1000; CP959268 → 8010-0050/100; 8010-0183/1000), <b>702995</b> (→ 8010-0049/100; 8010-0182/1000), <b>702879</b> (MLA110040M → 8010-0052, for GC PAL)
‡ Alternative MN product			

# Autosampler compatibility and cross-references

## Varian® (Agilent®)

Main chapter	Pages	Most popular MN products for use on Varian® instruments (now Agilent®; comparable product nos. of Varian® → Agilent® CrossLab in brackets)	
<b>HPLC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	As indicated under <i>GC – Crimp N 8 – Vials</i>
	18	Closures:	As indicated under <i>GC – Crimp N 8 – Closures</i>
■ N 8 Screw (standard samples)	19	Vials:	As indicated under <i>GC – Screw N 8 – Vials</i>
	19	Inserts:	As indicated under <i>GC – Screw N 8 – Inserts</i>
	20	Closures:	As indicated under <i>GC – Screw N 8 – Closures</i> , additionally closure <b>702437</b> (→ 8010-0062)
■ N 9 Screw (standard samples)	21	Vials:	As indicated under <i>GC – Screw N 9 – Vials</i>
	21	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	22, 23	Closures:	As indicated under <i>GC – Screw N 9 – Closures</i> , additionally closures <b>702040</b> (392611660 → 8010-0082), <b>702288.1</b> (→ 8010-0078)
■ N 11 Crimp (standard samples)	26, 27	Vials:	As indicated under <i>GC – Crimp N 11 – Vials</i>
	26	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	28	Closures:	As indicated under <i>GC – Crimp N 11 – Closures</i> , additionally closure <b>70231.4</b> (CP911378)
■ N 11 Snap (standard samples)	31	Vials:	<b>702714</b> (CP10390 → 8010-0024), <b>702713</b> (CP10391 → 8010-0023/100; 8010-0177/1000), <b>702712</b> (CP10392 → 8010-0025/100; 8010-0178/1000), <b>702709</b> , <b>702134</b> (→ 8010-0160), <b>702334</b> , <b>702809</b> (392611666 → 8010-0158/100; 8010-0193/1000), <b>702173</b> , <b>702174</b>
	31	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
	32	Closures:	<b>702731</b> (392611871 → 8010-0104), <b>702063</b> , <b>702063.2080</b> (for both see → 8010-0108), <b>702710</b> (392611873; CP10132), <b>702710.1</b> , <b>702710.2080</b> (for both see → 8010-0112), <b>702064</b> (392611874; CP10130 → 8010-0106), <b>702717.2</b> , <b>702717.2080</b> , <b>702718</b> (392611872 → 8010-0105), <b>702718.1</b> , <b>702718.2080</b>
	31	Inserts:	As indicated under <i>GC – Screw N 9 – Inserts</i>
<b>Headspace</b>			
■ N 18 Screw (for Combi PAL)	39	Vials:	<b>702866</b> (392620102 → 8010-0038), <b>702826</b> (392620202; CP910346 → 8010-0042), <b>702826.2</b> (392620204; CP911282 → 8010-0044)
	39	Closures:	<b>702827</b> (392620302 → 8010-0139), <b>702072</b> (392620306 → 8010-0140 <sup>†</sup> ), <b>702055</b> (392620304; CP910347 → 8010-0139)
■ N 20 Crimp (for Combi PAL)	40	Vials:	<b>702924</b> (MLA201000 → 8010-0030), <b>702263</b> (MLA202100, 392612021 → 8010-0034), <b>702263.2</b> (392620528/100; 392620529/1000 → 8010-0036)
	42, 43, 44	Closures:	<b>702929</b> (MLA200051ML → 8010-0165), <b>702834</b> (392612017 → 8010-0420)
■ N 20 Crimp (CP-9020/9025, CP-9060, Genesis)	40	Vials:	<b>702924</b> (MLA201000 → 8010-0030), <b>702918</b> (392611677; CP10090 → 8010-0029/100; 8010-0179/1000), <b>702261</b> (392611675; CP10070 → 8010-0033/100; 8010-0180/1000)
	42, 43, 44	Closures:	<b>70234</b> , <b>70234.10</b> , <b>702775</b> (392611859; CP10213 → 8010-0117), <b>702094</b> (392611858 → 8010-0116/100; 8010-0191/1000), <b>702931</b> (5183-4476/100) + <b>702804</b> (8010-0120/100) = <b>70237</b>
† Alternative MN product			

# Autosampler compatibility and cross-references

## VWR® (Merck® / Hitachi®)

Main chapter	Pages	Most popular MN products for use on VWR® instruments (comparable product nos. of VWR® Europe in brackets)	
<b>HPLC</b>			
■ N 8 Crimp (microsampling)	18	Vials:	<b>70282</b> (548-0078), <b>70286</b> (548-0080)
	18	Closures:	<b>70289</b> (548-0040/1000; 548-3040/100), <b>702878</b> (548-0038/1000; 548-3038/100)
■ N 8 Screw (standard samples)	19	Vials:	<b>70213</b> (548-0018/1000; 548-3018/100), <b>70213.2</b> (548-0448/1000), <b>702004</b> (548-0420/1000), <b>702893</b> (548-0019/1000; 548-3019/100), <b>702860</b> (548-0419/1000)
	19	Inserts:	<b>702968</b> (548-0020/1000), <b>702968.1</b> (548-0308/1000), <b>702824</b> (548-0083/1000), <b>702005</b> (548-0780/1000)
	20	Closures:	<b>70245</b> (548-0024/1000: 548-3024/100), <b>702437</b> (548-0834/1000; 548-1497/1000†), <b>702067</b> (548-3322/1000; 548-1491/1000†)
■ N 9 Screw (standard samples)	21	Vials:	<b>702282</b> (548-0028/1000; 548-3028/100), <b>702293</b> , <b>702283</b> (548-0029/1000; 548-3029/100), <b>702078</b> (548-0426/1000†), <b>702284</b> (548-0030/1000; 548-3030/100), <b>702079</b> (548-0427/1000), <b>702007</b> (548-0425/1000†; 548-1442/1000†), <b>702008</b> (548-3308/1000†), <b>702006</b> (548-0081/1000), <b>702135</b> (548-0428/1000), <b>702335</b> (548-0791/1000), <b>702009</b> (548-0440/1000; 548-3094/100), <b>702172</b> (548-0453/1000, <b>702010</b> (548-0894/1000), <b>702500</b> (548-0452/1000)
	21	Inserts:	<b>702813</b> (548-0006/1000; 548-3006/100), <b>702077</b> (548-0311/1000), <b>702818</b> (548-0002/1000), <b>702818.1</b> (548-0812/1000), <b>702716</b> (548-0310/1000), <b>702825</b> (548-0001/1000)
	22, 23	Closures:	<b>702287.1</b> (548-0085/1000), <b>702287</b> (548-0034/1000), <b>702036</b> (548-0786/1000), <b>702037</b> (548-0381/1000), <b>702038</b> (548-3179/1000), <b>702107</b> (548-0162/1000), <b>702288.1</b> (548-0088/1000), <b>702288</b> (548-0084/1000), <b>702039</b> (548-0788/1000), <b>702040</b> (548-0382/1000), <b>702083</b> , <b>702109</b> (548-3182/1000), <b>702026</b> (548-0372/1000), <b>702027</b> (548-0373/1000)
■ N 11 Crimp (standard samples)	26, 27	Vials:	<b>70201HP</b> (548-0003/1000; 548-3003/100), <b>70201HP.2</b> (548-3337), <b>702885</b> (548-0004/1000; 548-3004/100), <b>702075</b> (548-2088/1000; 548-1368/100†), <b>702892</b> (548-0005/1000; 548-3005/100), <b>702076</b> , <b>702888</b> (548-0092/1000; 548-3092/100), <b>702891</b> (548-0424/1000†), <b>702014</b> (548-3307/1000), <b>702134</b> (548-0429/1000), <b>702334</b> (548-0792/1000)
	26	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	28	Closures:	<b>70288</b> (548-0009/1000; 548-3009/100), <b>702823</b> (548-0411/1000)
■ N 11 Snap (standard samples)	31	Vials:	<b>702714</b> (548-0011/1000; 548-3011/100), <b>702713</b> (548-0422/1000), <b>702712</b> (548-0012/1000; 548-3012/100), <b>702709</b> (548-1441/1000†), <b>702134</b> (548-0429/1000), <b>702334</b> (548-0792/1000), <b>702809</b> (548-0120/1000; 548-3120/100), <b>702173</b> (548-0454/1000), <b>702174</b> (548-0895/1000)
	31	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	32	Closures:	<b>702710.1</b> (548-0432/1000), <b>702710</b> (548-0016/1000), <b>702710.2080</b> (548-3208/1000), <b>702717.2</b> (548-0435/1000), <b>702064</b> (548-0017/1000), <b>702717.2080</b> (548-3210/1000), <b>702718.1</b> (548-0434/1000), <b>702718</b> (548-0015/1000; 548-3015/100), <b>702718.2080</b> (548-3209/1000), <b>702063</b> (548-0433/1000†), <b>702731</b> (548-3358/1000), <b>702063.2080</b> (548-3360/1000)
■ N 13 Screw (large sample volumes)	35	Vials:	<b>702962</b> (548-0051/1000; 548-3051/100), <b>702973</b> (548-0052/1000; 548-3052/100)
	35	Inserts:	<b>702972</b> (548-0093/1000) + spring <b>702974</b> (548-0094/1000)
	35	Closures:	<b>702926</b> (548-0054/1000; 548-3054/100), <b>702963</b> (548-0096/1000) + <b>70260</b> (548-0111/1000; 548-3111/100)

† Alternative MN product



# Autosampler compatibility and cross-references








Waters®

Main chapter	Pages		Most popular MN products for use on Waters® instruments (comparable product nos. of Waters® in brackets)
<b>HPLC</b>			
■ N 9 Screw (standard samples)	21	Vials:	<b>702282, 702293, 702283</b> (186000273), <b>702284</b> (186000848), <b>702078</b> (186000273DV), <b>702079</b> (186000848DV), <b>702007</b> (186002804), <b>702008</b> (186002803), <b>702135, 702335, 702006</b> (186002802), <b>702009</b> (186002626), <b>702172, 702010</b> (186005219), <b>702500</b>
	21	Inserts:	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	22, 23	Closures:	<b>702026</b> (186000274), <b>702027</b> (186000305), <b>702287.1</b> (186005828), <b>702287</b> (186002456‡), <b>702036</b> (186005826), <b>702037</b> (186002129‡), <b>702038</b> (186002130‡), <b>702288.1</b> (186005829), <b>702288</b> (186002457‡), <b>702039</b> (186005827), <b>702040</b> (186002128‡), <b>702083</b> (186002127‡)
■ N 10 Screw (standard samples)	25	Vials:	<b>702011</b> (WAT063300), <b>702012, 702013</b>
	25	Inserts:	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	25	Closures:	<b>702045</b> (WAT058874‡), <b>702046, 702047</b>
■ N 11 Crimp (standard samples)	26, 27	Vials:	<b>70201HP</b> (WAT094222), <b>70201HP.2, 702885, 702892</b> (WAT094223), <b>702075</b> (WAT094222DV), <b>702076</b> (WAT094223DV)
	26	Inserts:	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	28	Closures:	<b>70288</b> (PSL404219), <b>702995</b> (PSL404231)
■ N 11 Snap (standard samples)	31	Vials:	<b>702714, 702713</b> (WAT094219), <b>702712</b> (WAT094220), <b>702709, 702134, 702334, 702809</b> (186002628), <b>702173, 702174</b>
	31	Inserts:	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	32	Closures:	<b>702710.1</b> (186000303), <b>702095</b> (186002650), <b>702717.2</b> (186000304), <b>702143</b> (186002647)
■ N 8 Shell Vials (standard samples)	36	Vials + Plugs:	<b>70202.1 + 702807</b> (WAT025054C/250), <b>702017 + 702807</b> (WAT025053C/250)
■ N 13 Screw (large sample volumes)	35	Vials:	<b>702962</b> (186000840; WAT072710), <b>702973</b> (186001135)
	35	Inserts:	<b>702972</b> (WAT015199/144; WAT072704/100) + spring <b>702974</b> (WAT072708)
	35	Closures:	<b>702926</b> (186000841/100‡; 186000965/1000‡), <b>702963</b> (600000162) + <b>70260</b> (WAT072714/144; WAT073005/1440)
‡ Alternative MN product			

## N 8 Crimp neck vials and caps N 8

### Crimp neck vials N 8

For micro sampling







						
70286	70282	70251	70212.1	702002	702003	702880
0.2 mL	0.3 mL	0.8 mL	0.6 mL	0.7 mL	0.7 mL	1.2 mL
5.5 x 31.5 mm	5.5 x 31.5 mm	8.2 x 30 mm	7 x 40 mm	7 x 40 mm	7 x 40 mm	8.2 x 40 mm
clear	clear	clear	amber	clear	amber	clear
conical	round bottom	flat bottom	conical	flat bottom	flat bottom	flat bottom
100/PE bag	100/PE bag	100/PP box	100/PE bag	100/PE bag	100/PE bag	100/PE bag

### Crimping tools N 8





REF	Type of crimping tool	Pack of
735126	Manual crimper (standard) for 8 mm aluminium crimp caps	1
735408	Manual decapper (standard) for 8 mm aluminium crimp caps	1
735208	Manual ergonomic crimper for 8 mm aluminium crimp caps	1







### Ready assembled crimp closures N 8 and plain crimp caps N 8

REF	Cap description	Septum description	Hardness	Thickness	Pack of
70283	 N 8 aluminium crimp cap, silver, center hole	PTFE virginal, white	53° shore D	0.25 mm	100/PE bag
70252.1	 N 8 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100/PE bag
702025	 N 8 aluminium crimp cap, silver, center hole	Red Rubber / FEP colorless	45° shore A	1.0 mm	100/PE bag
70289	 N 8 aluminium crimp cap, silver, center hole	Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
702878	 N 8 aluminium crimp cap, silver, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100/PE bag
702800	 N 8 aluminium crimp cap, silver, center hole (no liner)	-	-	-	100/PE bag

## Screw neck vials N 8

Small opening, 8-425 thread				
				
70213	70213.2	702004	702893	702860
1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.1 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	amber	clear, label + scale	amber, label + scale	clear
flat bottom	flat bottom	flat bottom	flat bottom	conical
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

## Inserts for screw neck vials N 8 (small opening)

Inserts for small opening vials			
			
702968*	702968.1*	702824	702005
0.1 mL	0.15 mL	0.1 mL	0.25 mL
5 x 31 mm	5 x 31 mm	5 x 29 mm	5 x 31 mm
clear	clear	clear	clear
conical, 15 mm tip	conical, 9 mm tip	with plastic spring	flat bottom
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

\* Optionally you may use metal springs 702974.1 in combination with these products to push them up in the vial (100 / PE bag).

## Containers for screw neck vials N 8

REF	Description	Pack of
702514	81 position container blue for screw neck vials N 8, 130 x 130 x 45 mm, coded, with transparent lid (suitable for freezers)	1





## Vial rack for screw neck vials N 8

REF	Description	Pack of
702502	50 position polypropylene vial rack blue for all vials 11.6 x 32 mm with flat bottom Dimensions: 190 x 100 x 22 mm, stackable	1







# N 8 Screw neck vials, inserts and caps N 8



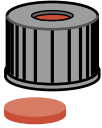
## Ready assembled screw closures N 8 and plain screw caps N 8

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702067	 N 8 PP screw cap, black, center hole	Red Rubber / FEP colorless	45° shore A	1.3 mm	100 / PE bag
702068	 as above, but with closed top				
70245	 N 8 PP screw cap, black, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
702066	 as above, but with closed top				
702437	 N 8 PP screw cap, black, center hole	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100 / PE bag
702069	 N 8 PP screw cap, black, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag
70249	 - N 8 PP screw cap, black, center hole (no liner)	-	-	-	100 / PE bag
70250	 - N 8 PP screw cap, black, closed top (no liner)	-	-	-	100 / PE bag

## N 8 septa for screw caps N 8

REF	Cap description	Septum description	Hardness	Thickness	Pack of
70261	 - (septum only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702070	 - (septum only)	Red Rubber / FEP colorless	45° shore A	1.3 mm	100 / PE bag
70248	 - (septum only)	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
702481	 - (septum only)	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100 / PE bag

## Vial Kits screw neck N 8










Vial ↓	Closure →			
	70245	702437	702067	
				
70213: 1.5 mL, clear, flat bottom	702238	702247	702246	
70213.2: 1.5 mL, amber, flat bottom	702249	702251	702248	

Pack of 100 vials and 100 closures, each  
Other Vial Kits on request












## Screw neck vials and inserts N 9

## Wide opening, short thread

Polypropylene								
								
702282	702293	702283	702284	702500	702813	702716	702818	702825
		silanized 702078	silanized 702079		silanized 702077		silanized 702818.1	
1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	0.2 mL	0.25 mL	0.1 mL	0.3 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
clear	amber	clear, label + scale	amber, label + scale	transparent, filling lines	clear	clear	clear	clear
flat bottom	flat bottom	flat bottom	flat bottom	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom
100/PP box	100/PP box	100/PP box	100/PP box	100/PE bag	100/PE bag	100/PE bag	100/PE bag	100/PE bag

## Micro-vials N 9 for small sample volumes

			PP/Glass insert	PP/Glass insert		Polypropylene	Polypropylene	Polypropylene
								
702006	702007	702008	702135*	702335*	702088	702009	702172	702010
1.1 mL	0.2 mL	0.2 mL	0.2 mL	0.2 mL	1.1 mL	0.3 mL	0.3 mL	0.7 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear	amber	clear	amber	clear	transparent	amber	transparent
flat bottom, 15 µL funnel in solid glass bottom	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	conical with round pedestal glass plate	with inner cone	with inner cone	with round bottom insert
100/PP box	100/PP box	100/PP box	100/PP box	100/PP box	100/PP box	100/PE bag	100/PE bag	100/PE bag

\* upon request also available with an integrated silanized insert

## Pre-assembled vial-insert combinations with screw neck N 9

Vial description	Insert description	Pack of	REF
Vial 702282: 1.5 mL, clear, flat bottom	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100	702177
Vial 702283: 1.5 mL, clear, flat bottom, label + scale	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100	702178
Vial 702284: 1.5 mL, amber, flat bottom, label + scale	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100	702179

Further pre-assembled vial-insert combinations on request

# N9 Screw neck vials, inserts and caps N 9

## Containers for screw neck vials N 9

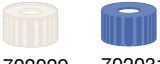
REF	Description	Pack of
702514	81 position container blue for screw neck vials N 9, 130 x 130 x 45 mm, coded, with transparent lid (suitable for freezers)	1

## Vial rack for screw neck vials N 9


REF	Description	Pack of
702502	50 position polypropylene vial rack blue for all vials 11.6 x 32 mm with flat bottom Dimensions: 190 x 100 x 22 mm, stackable	1



## Ready assembled screw closures, plain screw caps and single septa N 9





Cap description (scale 1:1.6)	Septum description	Hardness	Thickness	Pack of
N 9 PP screw cap, color as indicated, center hole  702029 702031	closed top PTFE virginal, white  702032	53° shore D	0.25 mm	100/PE bag
N 9 PP screw cap, color as indicated, center hole  702030 702732 702080 702081 702082 702147	closed top Red Rubber / FEP colorless  702033	45° shore A	1.0 mm	100/PE bag
N 9 PP screw cap, color as indicated, center hole  702287 702287.1 702036 702037 702038 702107	closed top Silicone white / PTFE red  702034	45° shore A	1.0 mm	100/PE bag
N 9 PP screw cap, color as indicated, center hole  702288 702288.1 702039 702040 702083 702109	Silicone white / PTFE blue, slit 	55° shore A	1.0 mm	100/PE bag
N 9 PP screw cap, color as indicated, center hole  702286 702035 702158 702084 702085 702159	PTFE red / Silicone white / PTFE red 	50° shore A	1.0 mm	100/PE bag
N 9 PP screw cap, color as indicated, center hole (no liner)  702160 702161 702162 702163 702164 702165	-	-	-	100/PE bag

## Ready assembled magnetic screw closure N 9




REF	Cap description	Septum description	Hardness	Thickness	Pack of
702155	 N 9 magnetic screw cap, silver, center hole	Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag



## N 9 septa for screw caps N 9

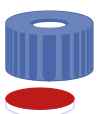
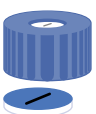
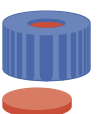



REF	Cap description	Septum description	Hardness	Thickness	Pack of
702043	 - (septum only)	PTFE virginal, white	53° shore D	0.25 mm	100/PE bag
702041	 - (septum only)	Red Rubber / FEP colorless	45° shore A	1.0 mm	100/PE bag
702042	 - (septum only)	Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
702148	 - (septum only)	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100/PE bag

## Bonded screw closures N 9

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702028	 N 9 PP bonded screw cap, blue, center hole	Red Rubber / TEF colorless	65° shore A	1.0 mm	100/PE bag
702026	 N 9 PP bonded screw cap, blue, center hole	Silicone beige / PTFE white	45° shore A	1.3 mm	100/PE bag
702027	 N 9 PP bonded screw cap, blue, center hole	Silicone beige / PTFE white, slit	45° shore A	1.3 mm	100/PE bag

(Septum firmly connected with the cap; cannot be removed)

## Vial Kits screw neck N 9

Vial ↓	Closure →					
						
702282: 1.5 mL, clear, flat bottom	702287.1	702288.1	702732	702026	702027	702244
702283: 1.5 mL, clear, flat bottom, label and scale	702201	702204	702207	702211	702213	
702284: 1.5 mL, amber, flat bottom, label and scale	702202	702205	702208	702212	702214	
702009: 0.3 mL, PP, transparent, with inner cone	702203	702206	702209			702226

Pack of 100 vials and 100 closures, each  
Other Vial Kits on request



## N9 Screw neck vials, inserts and caps N 9



### Pre-sealed vial-closure combinations with screw neck N 9

Vial description	Closure description	Pack of	REF
Pre-sealed vials <b>702282</b> : 1.5 mL screw neck vial N 9, 11.6 x 32 mm, clear, flat bottom, wide opening	pre-screwed with <b>702732</b> : N 9 PP screw cap, blue, center hole, Red Rubber / FEP colorless, 45° shore A, 1.0 mm	100	<b>702857</b>
Pre-sealed vials <b>702283</b> : 1.5 mL screw neck vial N 9, 11.6 x 32 mm, clear, flat bottom, wide opening, label + scale	pre-screwed with <b>702732</b> : N 9 PP screw cap, blue, center hole, Red Rubber / FEP colorless, 45° shore A, 1.0 mm	100	<b>702858</b>
Pre-sealed vials <b>702282</b> : 1.5 mL screw neck vial N 9, 11.6 x 32 mm, clear, flat bottom, wide opening	pre-screwed with <b>702287.1</b> : N 9 PP screw cap, blue, center hole, Silicone white / PTFE red, 45° shore A, 1.0 mm	100	<b>702874</b>
Pre-sealed vials <b>702283</b> : 1.5 mL screw neck vial N 9, 11.6 x 32 mm, clear, flat bottom, wide opening, label + scale	pre-screwed with <b>702288.1</b> : N 9 PP screw cap, blue, center hole, Silicone white / PTFE blue, slit, 55° shore A, 1.0 mm	100	<b>702863</b>
Pre-sealed vials <b>702284</b> : 1.5 mL screw neck vial N 9, 11.6 x 32 mm, amber, flat bottom, wide opening, label + scale	pre-screwed with <b>702288.1</b> : N 9 PP screw cap, blue, center hole, Silicone white / PTFE blue, slit, 55° shore A, 1.0 mm	100	<b>702873</b>
Pre-sealed vials <b>702283</b> : 1.5 mL screw neck vial N 9, 11.6 x 32 mm, clear, flat bottom, wide opening, label + scale	pre-screwed with <b>702026</b> : N 9 PP bonded screw cap, blue, center hole, Silicone beige / PTFE white, 45° shore A, 1.3 mm	100	<b>702864</b>

Other pre-sealed vial-closure combinations on request



## Special vials for special applications

### Silanized glass vials / Plastic vials / Plastic vials with glass insert

- Silanized glass vials  
Silanized glass vials have a de-activated inner glass surface, in order to reduce adsorption of polar substances. Therefore they are often used for the analysis of proteins, phenols and amino acids, which would – without any silanization of the glass surface – react with the OH-groups of the glass and thus would stick to the normally polar glass surface. It is also recommendable to use silanized vials respectively inserts for pH-sensitive and aqueous samples.
- Plastic vials  
For some applications glass vials are not suitable due their composition and their chemical properties. Amongst these are heavy metal analysis, water and protein analysis, atomic absorption, capillary electrophoresis (CE) and ion chromatography (IC). For all these cases high purity polypropylene vials with 0.3 mL, 0.7 mL and 1.5 mL in transparent and amber are available.
- Plastic vials with integrated glass insert  
In comparison to the glass-in-glass products, glass-in-plastic systems are very robust, as the glass insert is well protected by the polypropylene outer shell. The tip of the micro-insert is centered by 100 per cent in an outlet at the bottom. The inserts sit firmly in the protective PP round bottom shell and thus can easily be filled. Another advantage of these systems is their excellent tightness, as the glass insert always constantly exceeds the rim of the plastic outer vial by 0.1 mm granting a firm sealing of the sample in the insert. Upon request also a silanized insert can be integrated into the plastic shell. The high transparent polypropylene enables a good view on the filling level.



## Screw neck vials and inserts N 10

Wide opening, 10-425 thread



702011	702012	702013	702813	702716	702818	702825
1.5 mL	1.5 mL	1.5 mL	silanized 702077		silanized 702818.1	
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
clear	clear, label + scale	amber, label + scale	clear	clear	clear	clear
flat bottom	flat bottom	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom
100/PP box	100/PP box	100/PP box	100/PE bag	100/PE bag	100/PE bag	100/PE bag

## Containers for screw neck vials N 10







REF	Description	Pack of
702514	81 position container blue for screw neck vials N 10, 130 x 130 x 45 mm, coded, with transparent lid (suitable for freezers)	1

## Vial rack for screw neck vials N 10

REF	Description	Pack of
702502	50 position polypropylene vial rack blue for all vials 11.6 x 32 mm with flat bottom Dimensions: 190 x 100 x 22 mm, stackable	1



## Screw closures N 10 and plain screw caps N 10

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702044	 N 10 PP bonded* screw cap, black, center hole	Red Rubber / TEF colorless	65° shore A	1.0 mm	100/PE bag
702045	 N 10 PP bonded* screw cap, black, center hole	Silicone white / PTFE beige	45° shore A	1.5 mm	100/PE bag
702046	 N 10 PP bonded* screw cap, black, center hole	Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
702047	 N 10 PP bonded* screw cap, black, center hole	Silicone white / PTFE blue, slit	45° shore A	1.5 mm	100/PE bag
702048	 N 10 PP screw cap black, center hole (ready assembled)	PTFE red / Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
702049	 N 10 PP screw cap, black, center hole (no liner)	-	-	-	100/PE bag









\* Septum firmly connected with the cap; cannot be removed

# N 11 Crimp neck vials, inserts and caps N 11

## Crimp neck vials N 11

Small opening vials		Wide opening vials			
					
70201CG	70214CG	70201HP	70201HP.2	702885 702075	702892 702076
1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	amber	clear	amber	clear, label + scale	amber, label + scale
flat bottom	flat bottom	flat bottom	flat bottom	flat bottom	flat bottom
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

## Inserts for crimp neck vials N 11

Inserts for small opening vials				Inserts for wide opening vials			
							
702968	702968.1	702824	702005	702813	702716	702818 702818.1	702825
0.1 mL	0.15 mL	0.1 mL	0.25 mL	0.2 mL	0.25 mL	0.1 mL	0.3 mL
5 x 31 mm	5 x 31 mm	5 x 29 mm	5 x 31 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
clear	clear	clear	clear	clear	clear	clear	clear
conical, 15 mm tip	conical, 9 mm tip	with plastic spring	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

## Containers for crimp neck / snap ring vials N 11









REF	Description	Pack of
702514	81 position container blue for crimp neck / snap ring vials N 11, 130 x 130 x 45 mm, coded, with transparent lid (suitable for freezers)	1



## Vial rack for crimp neck / snap ring vials N 11

REF	Description	Pack of
702502	50 position polypropylene vial rack blue for all vials 11.6 x 32 mm with flat bottom Dimensions: 190 x 100 x 22 mm, stackable	1

## Crimp neck vials N 11

Micro-vials for small sample volumes							
							
702888	702141	702015	702016	702891	702014	702134*	702334*
1.1 mL	1.1 mL	1.1 mL	1.1 mL	0.2 mL	0.2 mL	0.2 mL	0.2 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear	clear	amber	clear	amber	clear	amber
flat bottom, 15 µL funnel in solid glass bottom	conical	conical with round pedestal glass plate	conical with round pedestal glass plate	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert
100/PP box	100/PP box	100/PP box	100/PP box	100/PP box	100/PP box	100/PP box	100/PP box

\* upon request also available with integrated silanized insert

## Crimping tools N 11

REF	Type of crimping tool	Pack of
735111	Manual crimper (standard), height adjustable, for 11 mm aluminium crimp caps	1
735911	Manual decapper (standard) for 11 mm aluminium crimp caps	1
735911.20	Manual decapper (plier style, dual) for 11 mm and 20 mm aluminium crimp caps	1
735211	Ergonomic crimper for 11 mm aluminium crimp caps	1
735311	Ergonomic decapper for 11 mm aluminium crimp caps	1
735511	Electronic crimper for 11 mm aluminium crimp caps (battery-powered)	1
735611	Electronic decapper for 11 mm aluminium crimp caps (battery-powered)	1
735700	Electronic high power crimping tool with power supply	1
735711	Crimping head for 11 mm crimp caps (aluminium, magnetic)	1
735811	Decapping head for 11 mm crimp caps (aluminium, magnetic)	1










For useful tips on optimal crimping, please see "Download poster Optimal crimping" on our website [www.mn-net.com/vials](http://www.mn-net.com/vials) → vial accessories.

As a decision help for the selection of the most suitable crimping tool for your individual requirements follow the barcode on the poster.















# N 11 Crimp neck vials, inserts and caps N 11

## Ready assembled crimp closures, plain crimp caps and single septa N 11

REF		Cap description	Septum description	Hardness	Thickness	Pack of
70284		N 11 aluminium crimp cap, silver, center hole	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
70231		N 11 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.3 mm	100 / PE bag
702001		N 11 aluminium crimp cap, silver, center hole	Natural rubber red-orange / TEF colorless	60° shore A	1.0 mm	100 / PE bag
702730		N 11 aluminium crimp cap, silver, center hole	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
702730.1		N 11 aluminium crimp cap, green, center hole	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
702730.2		N 11 aluminium crimp cap, red, center hole	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
702730.3		N 11 aluminium crimp cap, blue, center hole	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
70256		N 11 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.1		N 11 aluminium crimp cap, green, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.2		N 11 aluminium crimp cap, red, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.3		N 11 aluminium crimp cap, blue, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.4		N 11 aluminium crimp cap, gold, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70288		N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
70288.1		N 11 aluminium crimp cap, green, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
70288.2		N 11 aluminium crimp cap, red, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
70288.3		N 11 aluminium crimp cap, blue, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
702823*		N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE blue, cross-slit	55° shore A	1.5 mm	100 / PE bag

















\* upon request also available with a green, red or a blue crimp cap



REF	Cap description	Septum description	Hardness	Thickness	Pack of	
70239	 N 11 aluminium crimp cap, silver, center hole	PTFE gray / Butyl beige / PTFE gray	55° shore A	1.3 mm	100 / PE bag	
702995	 N 11 aluminium crimp cap, silver, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag	
702995.1	 N 11 aluminium crimp cap, green, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag	
702995.2	 N 11 aluminium crimp cap, red, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag	
702995.3	 N 11 aluminium crimp cap, blue, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag	
702175	 N 11 aluminium crimp cap, silver, roll groove, center hole	o-ring and aluminium septa TPF (Total Phthalate Free)		0.1 mm	100 / glass jar	
702146	 N 11 aluminium crimp cap, silver, center hole	Viton black	70° shore A	1.0 mm	100 / PE bag	
702879	 N 11 magnetic crimp cap, gold, center hole	Silicone white / PTFE red	45° shore A	1.0 mm	100 / PE bag	
702801	 -	N 11 aluminium crimp cap, silver, center hole (no liner)	-	-	100 / PE bag	
702401	 -	N 11 PE cap, transparent, closed top, thin piercing area			100 / PE bag	
70262	-	 - (septum only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702065	-	 - (septum only)	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag

\* upon request also available with a green, red or a blue crimp cap

## Vial Kits crimp neck N 11

Vial ↓	Closure →			
	70288 	702995 	70256 	702001 
70201HP: 1.5 mL, clear, flat bottom	702215 	702218 	702222 	702253 
702885: 1.5 mL, clear, flat bottom, label and scale	702216 	702219 	702223 	702254 
702892: 1.5 mL, amber, flat bottom, label and scale	702217 	702221 	702224 	702254 

Pack of 100 vials and 100 closures, each  
Other Vial Kits on request

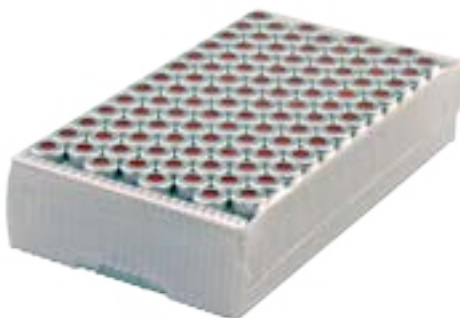


# N 11 Crimp neck vials, inserts and caps N 11

## Pre-sealed vial-closure combinations with crimp neck N 11

Vial description	Closure description	Pack of	REF
Pre-sealed vials 70201CG: 1.5 mL crimp neck vial N 11, 11.6 x 32 mm, clear, flat bottom, small opening	crimped with 70256: N 11 aluminium crimp cap, silver, center hole, Natural rubber / Butyl red-orange / TEF colorless, 45° shore A, 1.0 mm	100	702881
Pre-sealed vials 70201HP: 1.5 mL crimp neck vial N 11, 11.6 x 32 mm, clear, flat bottom, wide opening	crimped with 70256: N 11 aluminium crimp cap, silver, center hole, Natural rubber / Butyl red-orange / TEF colorless, 45° shore A, 1.0 mm	100	702101HP
Pre-sealed vials 702892: 1.5 mL crimp neck vial N 11, 11.6 x 32 mm, amber, flat bottom, wide opening, label and scale	crimped with 70256: N 11 aluminium crimp cap, silver, center hole, Natural rubber / Butyl red-orange / TEF colorless, 45° shore A, 1.0 mm	100	702859
Pre-sealed vials 70201HP: 1.5 mL crimp neck vial N 11, 11.6 x 32 mm, clear, flat bottom, wide opening	crimped with 702995: N 11 aluminium crimp cap, silver, center hole, PTFE red / Silicone white / PTFE red, 50° shore A, 1.0 mm	100	702867

Other pre-sealed vial-closure combinations on request



## Optimal crimping

For an optimal crimp result the crimping tool needs to be adjusted to:

- Type and height of the vial's crimp neck
- Thickness and hardness of the septa
- Properties of the cap (type, material)

For doing so, please refer to the instruction manual of the individual tool.

Permanent control of the crimp result and thus of the crimping tool settings is necessary.

Incorrect crimping can be recognized by the following features:



Cap deformation



Pulled up edge of the center hole



Strong formation of wrinkles










Convex looking liner









Cap can be turned with only low expenditure of power

## Snap ring vials and inserts N 11

Wide opening, vial can alternatively be crimped as well (see page 28)

						
702714	702713	702712	702813 silanized 702077	702716	702818 silanized 702818.1	702825
1.5 mL	1.5 mL	1.5 mL	0.2 mL	0.25 mL	0.1 mL	0.3 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
clear	clear, label + scale	amber, label + scale	clear	clear	clear	clear
flat bottom	flat bottom	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom
100/PP box	100/PP box	100/PP box	100/PE bag	100/PE bag	100/PE bag	100/PE bag

### Micro-vials for small sample volumes

					
702709	702134*	702334*	702809	702173	702174
0.2 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.7 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear	amber	transparent	amber	transparent
flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	with inner cone	with inner cone	with round bottom insert
100/PP box	100/PP box	100/PP box	100/PE bag	100/PE bag	100/PE bag

\* upon request also available with an integrated silanized insert










## Pre-assembled vial-insert combinations with snap ring N 11

Vial description	Insert description	Pack of	REF
Vial 702714: 1.5 mL, clear, flat bottom	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100	702170
Vial 702713: 1.5 mL, clear, flat bottom, label + scale	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100	702176









Further pre-assembled vial-insert combinations on request

# N 11 Snap ring vials, inserts and caps N 11





## Ready assembled snap ring closures N 11 (hard cap)

Cap description	Septum description	Hardness	Thickness	Pack of
N 11 PE snap ring cap, color as indicated, center hole  702731 702063	Red Rubber / FEP colorless 	45° shore A	1.0 mm	100 / PE bag
N 11 PE snap ring cap, color as indicated, center hole  702710 702710.1 702095 702142 702108	Silicone white / PTFE red 	45° shore A	1.0 mm	100 / PE bag
N 11 PE snap ring cap, color as indicated, center hole  702064 702717.2 702143	Silicone white / PTFE blue, cross-slit 	55° shore A	1.0 mm	100 / PE bag
N 11 PE snap ring cap, color as indicated, center hole  702718 702718.1	PTFE red / Silicone white / PTFE red 	50° shore A	1.0 mm	100 / PE bag
N 11 PE cap, transparent, closed top, thin piercing area  702401	–			100 / PE bag

## Ready assembled snap ring closures N 11 (soft cap)

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702063.2080	 N 11 PE snap ring cap, soft, light blue, center hole	Red Rubber / FEP colorless 	45° shore A	1.0 mm	100 / PE bag
702710.2080	 N 11 PE snap ring cap, soft, light blue, center hole	Silicone white / PTFE red 	45° shore A	1.0 mm	100 / PE bag
702717.2080	 N 11 PE snap ring cap, soft, light blue, center hole	Silicone white / PTFE blue, cross-slit 	55° shore A	1.0 mm	100 / PE bag
702718.2080	 N 11 PE snap ring cap, soft, light blue, center hole	PTFE red / Silicone white / PTFE red 	50° shore A	1.0 mm	100 / PE bag

## Vial Kits snap ring N 11

Vial ↓	Closure →			
	702710	702064	702731	702718
				
702714 1.5 mL, clear, flat bottom	702225	702228	702232	702235
702713 1.5 mL, clear, flat bottom, label and scale	702719	702229	702233	702236
702712 1.5 mL, amber, flat bottom, label and scale	702227	702231	702234	702237
Pack of 100 vials and 100 closures, each Other Vial Kits on request				



## Storage of samples in the fridge or in the freezer

### Useful tips for sample handling

Generally sample vials should be stored in a vial container when being placed in the fridge or in the freezer, in order to avoid any condensations on the cap/septa surface that may go along with contaminations in the penetration area of the septa in the center hole. When filling the vial you have to consider the expansion rate of your sample to prevent breakage of the vial. Furthermore it is important to defreeze the sample at a later point in time very slowly (no sudden defreezing with hot water for example). With screw closures you may have to check, if restoring forces have been activated during the defreezing process and if you may have to tighten the screw closure. The choice of the correct closure (septum) depends on the storage temperature.



## N 13 Crimp neck vials and caps N 13

### Crimp neck vial N 13

70203  
2 mL  
13.75 x 35 mm  
clear, flat bottom  
100 / carton

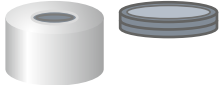





### Crimping tools N 13

REF	Type of crimping tool	Pack of
735113	Manual crimper (standard), height adjustable, for 13 mm aluminium crimp caps	1
735133	Manual crimper (standard), height adjustable, for 13 mm Flip Top / Flip Off caps	1
735913	Manual decapper (standard) for 13 mm aluminium crimp caps	1



### Ready assembled crimp closures N 13 and plain crimp caps N 13

REF	Cap description	Septum description	Hardness	Thickness	Pack of
70257	 N 13 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray (only centrally laminated with PTFE, typically called Pharma-Fix)	50° shore A	2 mm	100 / PE bag
70232	 N 13 aluminium center tear off cap, gold	Butyl dark gray / PTFE gray (only centrally laminated with PTFE, typically called Pharma-Fix)	50° shore A	2 mm	100 / PE bag
702802	 - N 13 aluminium crimp cap, silver, center hole (no liner)	-	-	-	100 / PE bag
702803	 - N 13 aluminium center tear off cap, gold (no liner)	-	-	-	100 / PE bag

### Containers for crimp and screw neck vials N 13

REF	Description	Pack of
702515	49 position container blue for crimp and screw neck vials N 13, 130 x 130 x 50 mm, with transparent lid (suitable for freezers)	1




### Vial rack for crimp and screw neck vials N 13

REF	Description	Pack of
702504	50 position polypropylene vial rack blue for vials with a diameter of 15 mm max. and flat bottom Dimensions: 240 x 120 x 28 mm, stackable	1


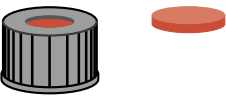


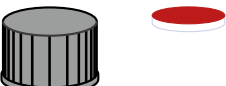

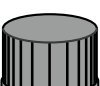





## Screw neck vials and insert N 13

13-425 Thread

			
702962	702973	702972	702974
4 mL	4 mL	0.3 mL	
14.75 x 45 mm	14.75 x 45 mm	6 x 40 mm	
clear	amber	clear	
flat bottom	flat bottom	conical, metal spring required	metal spring for 702972
100 / PP box	100 / PP box	100 / PE bag	100 / PE bag

## Ready assembled screw closures N 13, plain screw caps N 13, single septa N 12

REF	(Scale 1:1.25)	Cap description	Septum description	Hardness	Thickness	Pack of
702103		N 13 screw cap (13-425), green, closed top	F217 white / PTFE beige (firmly fixed)		1.5 mm	100 / PE bag
702050		N 13 PP screw cap, black, center hole	Red Rubber / FEP colorless	40° shore A	1.5 mm	100 / PE bag
702051		as above, but with closed top				
702926		N 13 PP screw cap, black, center hole	Silicone white / PTFE red	40° shore A	1.3 mm	100 / PE bag
702052		as above, but with closed top				
702963		N 13 PP screw cap, black, center hole (no liner)	-	-	-	100 / PE bag
702966		as above, but with closed top (no liner)				
70260		- (septa only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702053		- (septa only)	Red Rubber / FEP colorless	40° shore A	1.5 mm	100 / PE bag
702292		- (septa only)	Silicone white / PTFE red	40° shore A	1.3 mm	100 / PE bag



Shell vials N 8

Fire-polished neck



70202.1

702017

1 mL

1 mL

8.2 x 40 mm

8.2 x 40 mm

clear, flat bottom

amber, flat bottom

100 / PP box

100 / PP box

To be used with N 8 PE plugs

To be used with N 8 PE plugs



702807

702807

100 / PE bag

100 / PE bag

Snap cap vials (for storage of powdery samples) N 18 + N 22 with PE snap caps

N 18

N 22



70271

70272

702019

70273

5 mL

10 mL

15 mL

25 mL

20 x 40 mm

22 x 50 mm

26 x 48 mm

26 x 65 mm

clear, 3<sup>rd</sup> hydrol. class, flat bottom

clear, 3<sup>rd</sup> hydrol. class, flat bottom

clear, 3<sup>rd</sup> hydrol. class, flat bottom

clear, 3<sup>rd</sup> hydrol. class, flat bottom

100 / carton

100 / carton

100 / carton

100 / carton

To be used with N 18 PE snap cap

To be used with N 18 PE snap cap

To be used with N 22 PE snap cap

To be used with N 22 PE snap cap



70274

70274

70275

70275

100 / PE bag

100 / PE bag

100 / PE bag

100 / PE bag

## Screw neck vials and closed top screw closures for storage of liquid samples

N 8				N 9				N 13		
Small opening, 8-425 thread				Wide opening, short thread				13-425 thread		
										
70213	70213.2	702004	702893	702282	702293	702283 silanized 702078	702284 silanized 702079	702962	702973	
1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	4 mL	4 mL	
11.6 x 32 mm				11.6 x 32 mm				14.75 x 45 mm	14.75 x 45 mm	
clear, flat bottom	amber, flat bottom	clear, flat bottom, label + scale	amber, flat bottom, label + scale	clear, flat bottom	amber, flat bottom	clear, flat bottom, label + scale	amber, flat bottom, label + scale	clear, flat bottom	amber, flat bottom	
100 / PP box				100 / PP box				100 / PP box	100 / PP box	
To be used with				To be used with				To be used with		
										
702068	702066			702032	702033	702034		702103	702051	702052
N 8 PP screw cap, black, closed top, Red Rubber / FEP colorless, 45° shore A, 1.3 mm	N 8 PP screw cap, black, closed top, Silicone white / PTFE red, 45° shore A, 1.3 mm			N 9 PP screw cap blue, closed top, PTFE virginal, white, 53° shore D, 0.25 mm	N 9 PP screw cap blue, closed top, Red Rubber / FEP colorless, 45° shore A, 1.0 mm	N 9 PP screw cap blue, closed top, Silicone white / PTFE red, 45° shore A, 1.0 mm		N 13 screw cap, green, closed top, F217 white / PTFE beige (firmly fixed), 1.5 mm	N 13 PP screw cap, black, closed top, Red Rubber / FEP colorless, 40° shore A, 1.5 mm	N 13 PP screw cap, black, closed top, Silicone white / PTFE red, 40° shore A, 1.3 mm
100 / PE bag	100 / PE bag			100 / PE bag	100 / PE bag	100 / PE bag		100 / PE bag	100 / PE bag	100 / PE bag

Screw neck vials and screw closures for storage of liquid samples

N 15				N 18	N 20	
15-425 thread				18-400 thread	20-400 thread	
						
702096	702311	70285	702097	702098	702099	
8 mL	8 mL	12 mL	12 mL	16 mL	24 mL	
16.6 x 61 mm	16.6 x 61 mm	18.5 x 66 mm	18.5 x 66 mm	20.6 x 71 mm	22.7 x 86 mm	
clear, flat bottom	amber, flat bot.	clear, flat bottom	amber, flat bot.	clear, flat bottom	clear, flat bottom	
100/PP box	100/carton	100/PP box	100/carton	100/PP box	100/PP box	
To be used with				To be used with	To be used with	
						
702104	702180			702105	702106	702181
N 15 screw cap, green, closed top, F217 white/PTFE beige (firmly fixed), 1.5 mm	N 15 PP screw cap (bonded) black, center hole, Silicone white/PTFE beige, 45° shore A, 1.5 mm			N 18 screw cap, green, closed top, F217 white/PTFE beige (firmly fixed), 1.5 mm	N 20 screw cap, green, closed top, F217 white/PTFE beige (firmly fixed), 1.5 mm	N 20 PP screw cap (bonded) white, center hole, Silicone white/PTFE beige, 45° shore A, 1.5 mm
100/PE bag	100/PE bag			100/PE bag	100/PE bag	100/PE bag

For screw neck vials with volumes larger than 24 mL please see page 45







## Headspace screw neck vials N 18

Precision thread, not standardized



REF	702866	702826	702826.2
Capacity	10 mL	20 mL	20 mL
Dimensions	22.5 x 46 mm	22.5 x 75.5 mm	22.5 x 75.5 mm
Material	clear, rounded bottom	clear, rounded bottom	amber, rounded bottom
Packaging	100/PP box	100/PP box	100/PP box

## Ready assembled, magnetic screw closures N 18

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702827	 N 18 magnetic screw cap, silver, center hole	Silicone blue transparent / PTFE white	45° shore A	1.5 mm	100 / PE bag
702055	 N 18 magnetic screw cap, silver, center hole	Silicone white / PTFE blue	45° shore A	1.5 mm	100 / PE bag
702136	 N 18 magnetic screw cap, silver, center hole	Silicone white / PTFE blue, slit	45° shore A	1.5 mm	100 / PE bag
702072	 N 18 magnetic screw cap, silver, center hole	Red Rubber / TEF colorless	45° shore A	1.5 mm	100 / PE bag
702110	 - (septas only)	Silicone white / PTFE blue	45° shore A	1.5 mm	100 / PE bag
702981	 - (septas only)	Silicone blue transparent / PTFE white	45° shore A	1.5 mm	100 / PE bag

# N 20 Crimp neck vials and caps N 20

## Crimp neck vials N 20

5–10 mL



70204.36 70215.36	702917	702020	70205.36 70216.36	702918	702924
Varian®	PerkinElmer®	Metrohm®	Varian®	DANI, Agilent®	CTC, Varian®
5 mL	6 mL	5 mL	10 mL	10 mL	10 mL
20.5 x 38 mm	22 x 38.25 mm	21.7 x 38.25 mm	20.5 x 54.5 mm	22.5 x 46 mm	22.5 x 46 mm
clear / amber	clear	clear	clear / amber	clear	clear
flat bottom, flat DIN crimp neck	rounded bottom, bev. HS crimp neck	flat bottom, beveled HS crimp neck	flat bottom, flat DIN crimp neck	flat bottom, flat DIN crimp neck	rounded bottom, flat DIN crimp neck
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

20 mL



70206.36 70217.36	702086	70254 702541	702540	702261	702263 702263.2
		PerkinElmer®	PerkinElmer®	DANI, Agilent®	CTC, Varian®
20 mL	20 mL	20 mL	20 mL	20 mL	20 mL
23.25 x 75.5 mm	22 x 75 mm	23 x 75.5 mm	23 x 75.5 mm	22.5 x 75.5 mm	22.5 x 75.5 mm
clear / amber	clear, 15 mL graduation	clear / amber	clear, with label	clear	clear / amber
flat bottom, flat DIN crimp neck	rounded bottom, bev. HS crimp neck	rounded bottom, bev. HS crimp neck	rounded bottom, bev. HS crimp neck	flat bottom, flat DIN crimp neck	rounded bottom, flat DIN crimp neck
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

## Crimp neck vials N 20

25 mL, 50 mL and 100 mL



70210.36	70208.36	702100	70209.1
25 mL	50 mL	50 mL	100 mL
30 x 65 mm	31 x 101 mm	31 x 101 mm	51.6 x 94.5 mm
clear	clear	amber	clear, 3 <sup>rd</sup> hydrolytic class
flat bottom	flat bottom	flat bottom	flat bottom
flat DIN crimp neck	flat DIN crimp neck	flat DIN crimp neck	flat DIN crimp neck
100 / PP box	100 / PP box	100 / carton	60 / shrink-wrapped tray
























## Crimping tools N 20

REF	Type of crimping tool	Pack of
735120	Manual crimper (standard), height adjustable, for 20 mm aluminium crimp caps	1
735132	Manual crimper (standard), height adjustable, for 20 mm Flip Top/Flip Off caps	1
735920	Manual decapper (standard) for 20 mm aluminium crimp caps	1
735911.20	Manual decapper (plier style, dual) for 11 mm and 20 mm aluminium crimp caps	1
735220	Ergonomic crimper for 20 mm aluminium crimp caps	1
735320	Ergonomic decapper for 20 mm aluminium crimp caps	1
735520	Electronic crimper for 20 mm aluminium crimp caps (battery-powered)	1
735620	Electronic decapper for 20 mm aluminium crimp caps (battery-powered)	1
735700	Electronic high power crimping tool with power supply	1
735720	Crimping head for 20 mm crimp caps (aluminium, magnetic, bi-metal)	1
735820	Decapping head for 20 mm crimp caps (aluminium, magnetic, bi-metal)	1



# N 20 Crimp neck vials and caps N 20





























Ready assembled crimp closures, plain crimp caps and single septa N 20

REF	Cap description	Septum description	Hardness	Thickness	Pack of
	<b>Center hole caps</b>				
702773	 N 20 aluminium crimp cap, silver, center hole	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702775	 N 20 aluminium crimp cap, silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
70234.9	 N 20 aluminium crimp cap, silver, center hole	Molded septum Butyl / PTFE gray	50° shore A	3 mm	100 / PE bag
70234	 N 20 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100 / PE bag
70234.10	 N 20 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray* (high purity)	50° shore A	3 mm	100 / PE bag
702056	 N 20 aluminium crimp cap, gold, center hole	 Butyl dark gray / PTFE gray*	50° shore A	3 mm	100 / PE bag
70237	 N 20 aluminium crimp cap, silver, center hole	Butyl stopper, gray, <b>unassembled</b> (separate parts)	37° shore A		100 each / PE bags
702093	 N 20 aluminium crimp cap, silver, center hole	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100 / PE bag
702094	 N 20 aluminium crimp cap, silver, center hole	Silicone white / PTFE beige	40° shore A	3 mm	100 / PE bag
702091	 N 20 aluminium crimp cap, silver, center hole	Silicone white / PTFE red (economy line)	45° shore A	3 mm	100 / PE bag
702145	 N 20 aluminium crimp cap, silver, center hole	Silicone white / FEP-/Aluminium foil silver	45° shore A	3 mm	100 / PE bag
702804	 N 20 aluminium crimp cap, silver, center hole (no liner)	-	-	-	100 / PE bag
702112	 N 20 aluminium crimp cap, gold, center hole (no liner)	-	-	-	100 / PE bag
	<b>Pressure release caps</b>				
702836	 N 20 aluminium pressure release cap, silver, center hole	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702829	 N 20 aluminium pressure release cap, silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
70234.8	 N 20 aluminium pressure release cap, silver, center hole	Molded septum Butyl / PTFE gray	50° shore A	3 mm	100 / PE bag
702071	 N 20 aluminium pressure release cap, silver, center hole	Butyl dark gray / PTFE gray* (high purity)	50° shore A	3 mm	100 / PE bag
702927	 N 20 aluminium pressure release cap, silver, center hole	Silicone blue transparent / PTFE colorless	45° shore A	3 mm	100 / PE bag
702835	 N 20 aluminium pressure release cap, silver, center hole	Silicone white / PTFE beige	45° shore A	3 mm	100 / PE bag
702799	 N 20 aluminium pressure release cap, silver, center hole (no liner)	-	-	-	100 / PE bag

\* only centrally laminated with PTFE, typically called Pharma-Fix





 Ready assembled crimp closures, plain crimp caps and single septa N 20

REF	Cap description	Septum description	Hardness	Thickness	Pack of
 <b>Bi-metal crimp caps</b>					
702838	 N 20 bi-metal crimp cap, blue/silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
702834	 N 20 bi-metal crimp cap, blue/silver, center hole	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100 / PE bag
702837	 N 20 bi-metal crimp cap, blue/silver, center hole	Silicone white / PTFE beige	40° shore A	3 mm	100 / PE bag
702833	 N 20 bi-metal crimp cap, blue/silver, center hole (no liner)	-	-	-	100 / PE bag
 <b>Magnetic crimp caps</b>					
702774	 N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702928	 N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
702928.9	 N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100 / PE bag
702929	 N 20 magnetic crimp cap, silver, 8 mm center hole	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100 / PE bag
702808	 N 20 magnetic crimp cap, silver, 8 mm center hole (no liner)	-	-	-	100 / PE bag
 <b>Center tear off caps</b>					
70233	 N 20 aluminium center tear off cap, <b>gold</b>	 Butyl dark gray / PTFE gray*	50° shore A	3 mm	100 / PE bag
70236	 N 20 aluminium center tear off cap, silver	Butyl stopper, gray, <b>unassembled</b> (separate parts)	37° shore A		100 each / PE bags
70236.1	 N 20 aluminium center tear off cap, silver (no liner)	-	-	-	100 / PE bag
 <b>Complete tear off caps</b>					
70235	 N 20 aluminium complete tear off cap, silver	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100 / PE bag
70238	 N 20 aluminium complete tear off cap, silver	Butyl stopper, gray, <b>unassembled</b> (separate parts)	37° shore A		100 each / PE bags
702805	 N 20 aluminium complete tear off cap, silver (no liner)	-	-	-	100 / PE bag
 <b>Single septa</b>					
70277	 - (septum only)	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702057	 - (septum only)	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
702101	 - (septum only)	Molded septum Butyl / PTFE gray	50° shore A	3 mm	100 / PE bag
702D20TB	 - (septum only)	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100 / PE bag
702780	 - (septum only)	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100 / PE bag
70278	 - (septum only)	Silicone white / PTFE beige	40° shore A	3 mm	100 / PE bag
70279	 - (septum only)	Silicone white / Aluminium foil silver	50° shore A	3 mm	100 / PE bag










\* only centrally laminated with PTFE, typically called Pharma-Fix

## N 20 Crimp neck vials and caps N 20

### Stoppers N 20

REF	Cap description	Description	Hardness	Thickness	Pack of
702931	 - (stopper only)	N 20 stopper, Butyl gray	37° shore A	–	100 / PE bag
702931.1	 - (stopper only)	N 20 stopper, Bromobutyl red	45° shore A	–	100 / PE bag

### PE caps N 20 and suitable single septa N 19

REF	Cap description	Septum description	Hardness	Thickness	Pack of
Height: 8.4 mm → for vials with beveled HS crimp neck					
70266	 N 20 PE cap, transparent, for beveled HS crimp neck N 20, 4.3 mm center hole	(no liner)	-	-	100 / PE bag
70242	 cap as above	Butyl beige / PTFE gray unassembled (as separate parts)	55° shore A	1.3 mm	100 each / PE bags
702128	 cap as above	Natural rubber red-orange / TEF colorless, ready assembled	45° shore A	1.3 mm	100 / PE bag
Height: 9.1 mm → for vials with flat DIN crimp neck					
70267	 N 20 PE cap, transparent, for flat DIN crimp neck N 20, 4.3 mm center hole	(no liner)	-	-	100 / PE bag
70240	 cap as above	Butyl beige / PTFE gray unassembled (as separate parts)	55° shore A	1.3 mm	100 each / PE bags
702129	 cap as above	Natural rubber red-orange / TEF colorless, ready assembled	45° shore A	1.3 mm	100 / PE bag
70269	 - (septum only)	Butyl beige / PTFE gray	55° shore A	1.3 mm	100 / PE bag
702904	 - (septum only)	Natural rubber red-orange / TEF colorless	45° shore A	1.3 mm	100 / PE bag
702144	 - (septum only)	Silicone blue transparent / PTFE white	45° shore A	1.3 mm	100 / PE bag

### Containers for screw neck vials N 18 and crimp neck vials N 20

REF	Description	Pack of
702516	25 position container blue for 10 mL + 20 mL screw neck vials N 18 and crimp neck vials N 20, 130 x 130 x 80 mm, with transparent lid (suitable for freezers)	1



## Screw neck vials N 24 (EPA)

For TOC/VOC analysis and sample storage



702021 / 702022	702132 / 702133	702023 / 702024	702074 / 702131
20 mL	30 mL	40 mL	60 mL
27.5 x 57 mm	27.5 x 72.5 mm	27.5 x 95 mm	27.5 x 140 mm
clear / amber, flat bottom	clear / amber, flat bottom	clear / amber, flat bottom	clear / amber, flat bottom
100 / PP box	100 / PP box	100 / PP box	100 / PP box

## Containers for screw neck vials N 24

REF	Description	Pack of
702517	16 position container blue with removable divider for screw neck vials N 24 (20 mL, 30 mL, 40 mL) 130 x 130 x 102 mm, with transparent lid (suitable for freezers)	1



# N 24 Screw neck vials and caps N 24

Bonded and ready assembled screw closures + plain screw caps N 24, single septa N 22

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702058	N 24 PP bonded screw cap, white, center hole	Silicone white / PTFE beige	45° shore A	3.2 mm	100 / PE bag
702059	N 24 PP bonded screw cap, white, closed top	Silicone white / PTFE beige	45° shore A	3.2 mm	100 / PE bag
702073	N 24 PP bonded screw cap, white, center hole	Red Rubber / TEF colorless	45° shore A	2.5 mm	100 / PE bag
702168	N 24 PP bonded screw cap, white, center hole, with removeable protection lid	Silicone natural / PTFE colorless	45° shore A	3.2 mm	100 / PE bag
702130	N 24 PP screw cap, white, center hole	Butyl red / PTFE gray	50° shore A	2.4 mm	100 / PE bag
702102	N 24 PP screw cap, white, closed top	Butyl red / PTFE gray	50° shore A	2.4 mm	100 / PE bag
702060	N 24 PP screw cap, white, center hole	no liner	-	-	100 / PE bag
702061	N 24 PP screw cap, white, closed top	no liner	-	-	100 / PE bag
702062	- (septa only)	Silicone natural / PTFE colorless	45° shore A	3.2 mm	100 / PE bag
702791	- (septa only)	Butyl red / PTFE gray	50° shore A	2.4 mm	100 / PE bag

Pre-sealed vial-closure combinations with screw neck N 24

Vial description	Closure description	Pack of	REF
Pre-sealed vials 702021: 20 mL screw neck vial N 24, 27.5 x 57 mm, clear, flat bottom	pre-screwed with 702073: N 24 PP screw cap (bonded), white, center hole, Red rubber / TEF colorless, 45° shore A, 2.5 mm	100	702865
Pre-sealed vials 702023: 40 mL screw neck vial N 24, 27.5 x 95 mm, clear, flat bottom	pre-screwed with 702058: N 24 PP screw cap (bonded), white, center hole, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702877
Other pre-sealed vial-closure combinations on request			



# Vial accessories and other consumables for chromatography



## GC injection port septa

Premium HT quality – Blister packs for cleanliness and easy handling

		BTO septa	AG3 septa	Marathon septa
OD	T <sub>max</sub>	for highest demands in GC and GC-MS – CenterGuide™ –	with higher durability than BTO – CenterGuide™ –	with extreme durability > 400 injections – CenterGuide™ –
9 mm	400 °C	702646	702656	702660
11 mm	400 °C	702647	702657	702661
11.5 mm	400 °C	702648	702658	702662
Shimadzu®	300 °C	702649	702659	702663
Pack of		25 / blister	25 / blister	25 / blister

Standard quality

Septum type	Standard septa (ST)	High temperature septa (HT)	Silicone septa	Silicone / PTFE septa
OD	beige silicone, 60° shore A, 4 mm	red, non-bleeding silicone, 60° shore A, 3 mm (320 °C max.)	soft transparent 3 mm	white silicone, PTFE 3 mm
9 mm	702609	702619	702602	
10 mm	702610	702620		702625
11 mm	702611	702621	702604	702626
12 mm	702612	702622	702605	702627
13 mm	702613	702623	702606	702628
17 mm		702632		
Pack of	50 / plastic container	50 / plastic container	50 / plastic container	50 / plastic container

## Capillary connectors for GC

REF	Capillary connector		Pack of
707971	Universal, linear capillary connector for 2 columns with an ID of 0.20–0.53 mm		5 / box
707972	Universal, linear capillary connector for 2 columns with an ID of 0.20–0.53 mm		10 / box
707973	Universal, linear capillary connector for 3 columns with an ID of 0.20–0.53 mm, Y splitter		1 / box

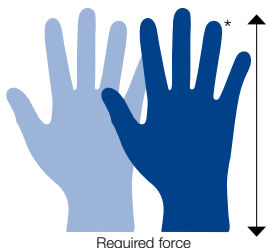


## Manual crimping tools – Standard

### User profile

Manual crimping tool - Standard

Cap sizes (N 8, N 11, N 13, N 20)



Number of crimp processes

Reproducibility

Durability

Mobility

Comfort adjust.

Convenience

Aluminium

Bi-metal

Magnetic



REF	Description	Pack of
<b>Crimpers</b>		
735126	Manual crimper (standard), for 8 mm crimp caps	1
735111	Manual crimper (standard), height adjustable, for 11 mm crimp caps	1
735113	Manual crimper (standard), height adjustable, for 13 mm crimp caps	1
735133	Manual crimper (standard), height adjustable, for 13 mm Flip Top/Flip Off caps	1
735120	Manual crimper (standard), height adjustable, for 20 mm crimp caps	1
735132	Manual crimper (standard), height adjustable, for 20 mm Flip Top/Flip Off caps	1
<b>Decappers</b>		
735408	Manual decapper (standard), for 8 mm crimp caps	1
735911	Manual decapper (standard), for 11 mm crimp caps	1
735913	Manual decapper (standard), for 13 mm crimp caps	1
735920	Manual decapper (standard), for 20 mm crimp caps	1



## Manual decapper – Plier style, dual size

REF	Description	Pack of
735911.20	Manual decapper (plier style, dual size), for 11 mm and 20 mm crimp caps	1





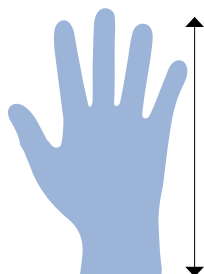
# Vial accessories and other consumables for chromatography

## Manual crimping tools – Ergonomic

### User profile

Manual crimping tool - Ergonomic

Cap sizes (N 8, N 11, N 20)



Required force

Number of crimp processes

Reproducibility

Durability

Mobility

Comfort adjustments

Convenience

Aluminium

Bi-metal



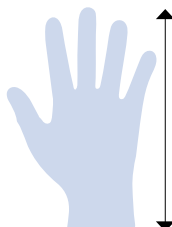
REF	Description	Pack of
<b>Crimpers</b>		
735208	Manual crimper (ergonomic), adjustable, for 8 mm crimp caps	1
735211	Manual crimper (ergonomic), adjustable, for 11 mm crimp caps	1
735220	Manual crimper (ergonomic), adjustable, for 20 mm crimp caps	1
<b>Decappers</b>		
735311	Manual decapper (ergonomic), for 11 mm crimp caps	1
735320	Manual decapper (ergonomic), for 20 mm crimp caps	1

## Electronic crimping tools – Battery-powered

### User profile

Battery-powered – electr. crimping tool

Cap sizes (N 11, N 20)



Required force

Number of crimp processes

Reproducibility

Durability

Mobility

Comfort adjustments

Convenience

Aluminium



REF	Description	Pack of
<b>Crimpers</b>		
735511	Electronic crimper (battery-powered), adjustable, for 11 mm aluminium crimp caps	1
735520	Electronic crimper (battery-powered), adjustable, for 20 mm aluminium crimp caps	1
<b>Decappers</b>		
735611	Electronic decapper (battery-powered), for 11 mm aluminium crimp caps	1
735620	Electronic decapper (battery-powered), for 20 mm aluminium crimp caps	1
<b>Accessories for battery-powered, electronic crimping tools</b>		
735500	Battery 6.6 Volt, 8.6 Wh	1
735501	Stand for electronic crimping tools	1

# Vial accessories and other consumables for chromatography

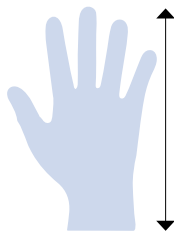


## Electronic crimping tools – High Power crimping tool

### User profile

Electronic high power crimping tool

Cap sizes (N 11, N 20)



Required force

Number of crimp processes

Reproducibility

Durability

Mobility\*

Comfort adjustments

Convenience

Aluminium

Bi-metal

Magnetic

\* normally stationary usage with a stand



REF	Description	Pack of
<b>Basic high power crimping tool</b>		
735700	Electronic high power crimping tool with fixed power supply	1
<b>Crimping heads</b>		
735711	Crimping head for 735700 for 11 mm crimp caps	1
735720	Crimping head for 735700 for 20 mm crimp caps	1
<b>Decapping heads</b>		
735811	Decapping head for 735700 for 11 mm crimp caps	1
735820	Decapping head for 735700 for 20 mm crimp caps	1
<b>Accessories high power crimping tool</b>		
735501	Stand for electronic crimping tools	1

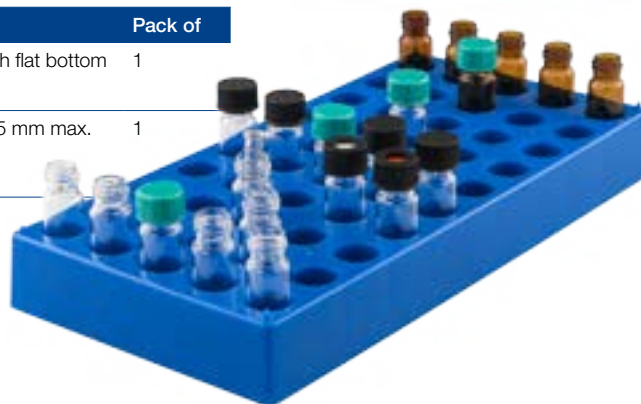
## Vial containers

REF	Description	Pack of
702514	81 position container blue, for all vials with flat bottom, 11.6 x 32 mm, 130 x 130 x 45 mm, coded, with transparent lid (suitable for freezers)	1
702515	49 position container blue, for all vials N 13 with flat bottom, 130 x 130 x 50 mm, with transparent lid (suitable for freezers)	1
702516	25 position container blue, for all 10 mL and 20 mL screw neck vials N 18 and crimp neck vials N 20, 130 x 130 x 80 mm, with transparent lid (suitable for freezers)	1
702517	16 position container blue, for all 20 mL, 30 mL and 40 mL screw neck vials N 24, 130 x 130 x 102 mm, with transparent lid (suitable for freezers)	1







































































































## Vial racks

REF	Description	Pack of
702502	50 position polypropylene vial rack blue, for all vials 11.6 x 32 mm with flat bottom Dimensions: 190 x 100 x 22 mm, stackable	1
702504	50 position polypropylene vial rack blue, for vials with a diameter of 15 mm max. and flat bottom Dimensions: 240 x 120 x 28 mm, stackable	1



## Numerical index

REF	Product	Page
702D20TB	 septum N 20	43
702001	 crimp closure N 11	28
702002	 crimp neck vial N 8	18
702003	 crimp neck vial N 8	18
702004	 screw neck vial N 8	19, 37
702005	 insert for vials N 8	19
	 insert for vials N 11, small opening	26
702006	 screw neck vial N 9	21
702007	 screw neck vial N 9	21
702008	 screw neck vial N 9	21
702009	 screw neck vial N 9	21
70201CG	 crimp neck vial N 11	26
70201HP	 crimp neck vial N 11	26
70201HP.2	 crimp neck vial N 11	26
702010	 screw neck vial N 9	21
702011	 screw neck vial N 10	25
702012	 screw neck vial N 10	25
702013	 screw neck vial N 10	25
702014	 crimp neck vial N 11	27
702015	 crimp neck vial N 11	27
702016	 crimp neck vial N 11	27
702017	 shell vial N 8	36
702019	 snap cap vial N 22	36
70202.1	 shell vial N 8	36
702020	 crimp neck vial N 20	40
702021	 screw neck vial N 24	45
702022	 screw neck vial N 24	45
702023	 screw neck vial N 24	45
702024	 screw neck vial N 24	45
702025	 crimp closure N 8	18
702026	 bonded screw closure N 9	23
702027	 bonded screw closure N 9	23
702028	 bonded screw closure N 9	23
702029	 screw closure N 9	22
70203	 crimp neck vial N 13	34
702030	 screw closure N 9	22
702031	 screw closure N 9	22
702032	 screw closure N 9	22, 37
702033	 screw closure N 9	22, 37
702034	 screw closure N 9	22, 37
702035	 screw closure N 9	22
702036	 screw closure N 9	22
702037	 screw closure N 9	22
702038	 screw closure N 9	22
702039	 screw closure N 9	22
70204.36	 crimp neck vial N 20	40
702040	 screw closure N 9	22
702041	 septum N 9	23
702042	 septum N 9	23
702043	 septum N 9	23
702044	bonded screw closure N 10	25




















































REF	Product	Page
702045	 bonded screw closure N 10	25
702046	 bonded screw closure N 10	25
702047	 bonded screw closure N 10	25
702048	 screw closure N 10	25
702049	 screw cap N 10	25
70205.36	 crimp neck vial N 20	40
702050	 screw closure N 13	35
702051	 screw closure N 13	35, 37
702052	 screw closure N 13	35, 37
702053	 septum N 12	35
702055	 magnetic screw closure N 18	39
702056	 crimp closure N 20	42
702057	 septum N 20	43
702058	 bonded screw closure N 24	46
702059	 bonded screw closure N 24	46
70206.36	 crimp neck vial N 20	40
702060	 screw cap N 24	46
702061	 screw cap N 24	46
702062	 septum N 22	46
702063	 snap ring closure N 11	32
702063.2080	 snap ring closure N 11	32
702064	 snap ring closure N 11	32
702065	 septum N 11	29
702066	 screw closure N 8	20, 37
702067	 screw closure N 8	20
702068	 screw closure N 8	20, 37
702069	 screw closure N 8	20
702070	 septum N 8	20
702071	 crimp closure N 20	42
702072	 magnetic screw closure N 18	39
702073	 bonded screw closure N 24	46
702074	 screw neck vial N 24	45
702075	 crimp neck vial N 11	26
702076	 crimp neck vial N 11	26
702077	 insert for vials N 9	21
	 insert for vials N 10	25
	 insert for vials N 11, wide opening	26, 31
702078	 screw neck vial N 9	21, 37
702079	 screw neck vial N 9	21, 37
70208.36	 crimp neck vial N 20	41
702080	 screw closure N 9	22
702081	 screw closure N 9	22
702082	 screw closure N 9	22
702083	 screw closure N 9	22
702084	 screw closure N 9	22
702085	 screw closure N 9	22
702086	 crimp neck vial N 20	40
702088	 screw neck vial N 9	21
70209.1	 crimp neck vial N 20	41
702091	 crimp closure N 20	42
702093	crimp closure N 20	42




















































## Numerical index

REF	Product	Page
702094	crimp closure N 20	42
702095	snap ring closure N 11	32
702096	screw neck vial N 15	38
702097	screw neck vial N 15	38
702098	screw neck vial N 18	38
702099	screw neck vial N 20	38
70210.36	crimp neck vial N 20	41
702100	crimp neck vial N 20	41
702101	septum N 20	43
702101HP	pre-sealed vial-closure combination N 11	30
702102	screw closure N 24	46
702103	screw closure N 13	35, 37
702104	screw closure N 15	38
702105	screw closure N 18	38
702106	screw closure N 20	38
702107	screw closure N 9	22
702108	snap ring closure N 11	32
702109	screw closure N 9	22
702110	septum N 18	39
702112	crimp cap N 20	42
70212.1	crimp neck vial N 8	18
702128	PE cap N 20	44
702129	PE cap N 20	44
70213	screw neck vial N 8	19, 37
70213.2	screw neck vial N 8	19, 37
702130	screw closure N 24	46
702131	screw neck vial N 24	45
702132	screw neck vial N 24	45
702133	screw neck vial N 24	45
702134	crimp neck vial N 11	27
	snap ring vial N 11	31
702135	screw neck vial N 9	21
702136	magnetic screw closure N 18	39
70214CG	crimp neck vial N 11	26
702141	crimp neck vial N 11	27
702142	snap ring closure N 11	32
702143	snap ring closure N 11	32
702144	septum N 19	44
702145	crimp closure N 20	42
702146	crimp closure N 11	29
702147	screw closure N 9	22
702148	septum N 9	23
70215.36	crimp neck vial N 20	40
702155	magnetic screw closure N 9	22
702158	screw closure N 9	22
702159	screw closure N 9	22
70216.36	crimp neck vial N 20	40
702160	screw cap N 9	22
702161	screw cap N 9	22
702162	screw cap N 9	22
702163	screw cap N 9	22



















































REF	Product	Page
702164	screw cap N 9	22
702165	screw cap N 9	22
702168	bonded screw closure N 24	46
70217.36	crimp neck vial N 20	40
702170	vial-insert combination N 11	31
702172	screw neck vial N 9	21
702173	snap ring vial N 11	31
702174	snap ring vial N 11	31
702175	crimp closure N 11	29
702176	vial-insert combination N 11	31
702177	vial-insert combination N 9	21
702178	vial-insert combination N 9	21
702179	vial-insert combination N 9	21
702180	screw closure N 15	38
702181	screw closure N 20	38
702201	Vial Kit screw neck N 9	23
702202	Vial Kit screw neck N 9	23
702203	Vial Kit screw neck N 9	23
702204	Vial Kit screw neck N 9	23
702205	Vial Kit screw neck N 9	23
702206	Vial Kit screw neck N 9	23
702207	Vial Kit screw neck N 9	23
702208	Vial Kit screw neck N 9	23
702209	Vial Kit screw neck N 9	23
702211	Vial Kit screw neck N 9	23
702212	Vial Kit screw neck N 9	23
702213	Vial Kit screw neck N 9	23
702214	Vial Kit screw neck N 9	23
702215	Vial Kit crimp neck N 11	29
702216	Vial Kit crimp neck N 11	29
702217	Vial Kit crimp neck N 11	29
702218	Vial Kit crimp neck N 11	29
702219	Vial Kit crimp neck N 11	29
702221	Vial Kit crimp neck N 11	29
702222	Vial Kit crimp neck N 11	29
702223	Vial Kit crimp neck N 11	29
702224	Vial Kit crimp neck N 11	29
702225	Vial Kit snap ring N 11	33
702226	Vial Kit screw neck N 9	23
702227	Vial Kit snap ring N 11	33
702228	Vial Kit snap ring N 11	33
702229	Vial Kit snap ring N 11	33
702231	Vial Kit snap ring N 11	33
702232	Vial Kit snap ring N 11	33
702233	Vial Kit snap ring N 11	33
702234	Vial Kit snap ring N 11	33
702235	Vial Kit snap ring N 11	33
702236	Vial Kit snap ring N 11	33
702237	Vial Kit snap ring N 11	33
702238	Vial Kit screw neck N 8	20
702244	Vial Kit screw neck N 9	23



















































## Numerical index

REF	Product	Page
702246	 Vial Kit screw neck N 8	20
702247	 Vial Kit screw neck N 8	20
702248	 Vial Kit screw neck N 8	20
702249	 Vial Kit screw neck N 8	20
702251	 Vial Kit screw neck N 8	20
702253	 Vial Kit crimp neck N 11	29
702254	 Vial Kit crimp neck N 11	29
702261	 crimp neck vial N 20	40
702263	 crimp neck vial N 20	40
702263.2	 crimp neck vial N 20	40
702282	 screw neck vial N 9	21, 37
702283	 screw neck vial N 9	21, 37
702284	 screw neck vial N 9	21, 37
702286	 screw closure N 9	22
702287	 screw closure N 9	22
702287.1	 screw closure N 9	22
702288	 screw closure N 9	22
702288.1	 screw closure N 9	22
702292	 septum N 12	35
702293	 screw neck vial N 9	21, 37
70231	 crimp closure N 11	28
70231.1	 crimp closure N 11	28
70231.2	 crimp closure N 11	28
70231.3	 crimp closure N 11	28
70231.4	 crimp closure N 11	28
702311	 screw neck vial N 15	38
70232	 crimp closure N 13	34
70233	 crimp closure N 20	43
702334	 crimp neck vial N 11	27
	 snap ring vial N 11	31
702335	 screw neck vial N 9	21
70234	 crimp closure N 20	42
70234.8	 crimp closure N 20	42
70234.9	 crimp closure N 20	42
70234.10	 crimp closure N 20 (high purity)	42
70235	 crimp closure N 20	43
70236	 crimp closure N 20	43
70236.1	 crimp cap N 20	43
70237	 crimp closure N 20	42
70238	 crimp closure N 20	43
70239	 crimp closure N 11	29
70240	 PE cap N 20	44
702401	 PE cap N 11	29, 32
70242	 PE cap N 20	44
702437	 screw closure N 8	20
70245	 screw closure N 8	20
70248	 septum N 8	20
702481	 septum N 8	20
70249	 screw cap N 8	20
70250	 screw cap N 8	20
702500	 screw neck vial N 9	21





































REF	Product	Page
702502	 vial rack for vials N 8	19
	 vial rack for vials N 9	22
	 vial rack for vials N 10	25
	 vial rack for vials N 11	26
	 vial rack for vials N 8, N 9, N 10, N 11	51
702504	 vial rack for crimp and screw neck vials N 13	34
	 vial rack for crimp and screw neck vials N 13	51
70251	 crimp neck vial N 8	18
702514	 container for vials N 8	19
	 container for vials N 9	22
	 container for vials N 10	25
	 container for vials N 11	26
	 container for vials N 8, N 9, N 10 and N 11	51
702515	 container for vials N 13	34, 51
702516	 container for vials N 20	44, 51
702517	 container for vials N 24	45, 51
70252.1	 crimp closure N 8	18
70254	 crimp neck vial N 20	40
702540	 crimp neck vial N 20	40
702541	 crimp neck vial N 20	40
70256	 crimp closure N 11	28
70257	 crimp closure N 13	34
70260	 septum N 12	35
702602	 GC injection port septum	48
702604	 GC injection port septum	48
702605	 GC injection port septum	48
702606	 GC injection port septum	48
702609	 GC injection port septum	48
70261	 septum N 8	20
702610	 GC injection port septum	48
702611	 GC injection port septum	48
702612	 GC injection port septum	48
702613	 GC injection port septum	48
702619	 GC injection port septum	48
70262	 septum N 11	29
702620	 GC injection port septum	48
702621	 GC injection port septum	48
702622	 GC injection port septum	48
702623	 GC injection port septum	48
702625	 GC injection port septum	48
702626	 GC injection port septum	48
702627	 GC injection port septum	48
702628	 GC injection port septum	48
702632	 GC injection port septum	48
702646	 GC injection port septum	48
702647	 GC injection port septum	48
702648	 GC injection port septum	48
702649	 GC injection port septum	48
702656	 GC injection port septum	48
702657	 GC injection port septum	48
702658	 GC injection port septum	48

































# Numerical index

REF	Product	Page
702659	 GC injection port septum	48
70266	 PE cap N 20	44
702660	 GC injection port septum	48
702661	 GC injection port septum	48
702662	 GC injection port septum	48
702663	 GC injection port septum	48
70267	 PE cap N 20	44
70269	 septum N 19	44
702709	 snap ring vial N 11	31
70271	 snap cap vial N 18	36
702710	 snap ring closure N 11	32
702710.1	 snap ring closure N 11	32
702710.2080	 snap ring closure N 11	32
702712	 snap ring vial N 11	31
702713	 snap ring vial N 11	31
702714	 snap ring vial N 11	31
702716	 insert for vials N 10	25
	 insert for vials N 11, wide opening	26, 31
	 screw neck vial N 9	21
702717.2	 snap ring closure N 11	32
702717.2080	 snap ring closure N 11	32
702718	 snap ring closure N 11	32
702718.1	 snap ring closure N 11	32
702718.2080	 snap ring closure N 11	32
702719	 vial kit snap ring N 11	33
70272	 snap cap vial N 18	36
70273	 snap cap vial N 22	36
702730	 crimp closure N 11	28
702730.1	 crimp closure N 11	28
702730.2	 crimp closure N 11	28
702730.3	 crimp closure N 11	28
702731	 snap ring closure N 11	32
702732	 screw closure N 9	22
70274	 PE snap cap N 18	36
70275	 PE snap cap N 22	36
70277	 septum N 20	43
702773	 crimp closure N 20	42
702774	 crimp closure N 20	43
702775	 crimp closure N 20	42
70278	 septum N 20	43
702780	 septum N 20	43
70279	 septum N 20	43
702791	 septum N 22	46
702799	 crimp cap N 20	42
702800	 crimp cap N 8	18
702801	 crimp cap N 11	29
702802	 crimp cap N 13	34
702803	 crimp cap N 13	34
702804	 crimp cap N 20	42
702805	 crimp cap N 20	43
702807	PE plug N 8	36

REF	Product	Page
702808	 crimp cap N 20	43
702809	 snap ring vial N 11	31
702813	 insert for vials N 10	25
	 insert for vials N 11, wide opening	26, 31
	 screw neck vial N 9	21
702818	 insert for vials N 10	25
	 insert for vials N 11, wide opening	26, 31
	 screw neck vial N 9	21
702818.1	 insert for vials N 10	25
	 insert for vials N 11, wide opening	26, 31
	 screw neck vial N 9	21
70282	 crimp neck vial N 8	18
702823	 crimp closure N 11	28
702824	 insert for vials N 8	19
	 insert for vials N 11, small opening	26
702825	 insert for vials N 10	25
	 insert for vials N 11, wide opening	26, 31
	 screw neck vial N 9	21
702826	 screw neck headspace vial N 18	39
702826.2	 screw neck headspace vial N 18	39
702827	 magnetic screw closure N 18	39
702829	 crimp closure N 20	42
70283	 crimp closure N 8	18
702833	 crimp cap N 20	43
702834	 crimp closure N 20	43
702835	 crimp closure N 20	42
702836	 crimp closure N 20	42
702837	 crimp closure N 20	43
702838	 crimp closure N 20	43
70284	 crimp closure N 11	28
70285	 screw neck vial N 15	38
702857	 pre-sealed vial-closure combination N 9	24
702858	 pre-sealed vial-closure combination N 9	24
702859	 pre-sealed vial-closure combination N 11	30
70286	 crimp neck vial N 8	18
702860	 crimp neck vial N 8	19
702863	 pre-sealed vial-closure combination N 9	24
702864	 pre-sealed vial-closure combination N 9	24
702865	 pre-sealed vial-closure combination N 24	47
702866	 screw neck headspace vial N 18	39
702867	 pre-sealed vial-closure combination N 11	30
702873	 pre-sealed vial-closure combination N 9	24
702874	 pre-sealed vial-closure combination N 9	24
702877	 pre-sealed vial-closure combination N 24	47
702878	 crimp closure N 8	18
702879	 crimp closure N 11	29
70288	 crimp closure N 11	28
70288.1	 crimp closure N 11	28
70288.2	 crimp closure N 11	28
70288.3	 crimp closure N 11	28
702880	crimp neck vial N 8	18

## Numerical index

REF	Product	Page
702881	 pre-sealed vial-closure combination N 11	30
702885	 crimp neck vial N 11	26
702888	 crimp neck vial N 11	27
70289	 crimp closure N 8	18
702891	 crimp neck vial N 11	27
702892	 crimp neck vial N 11	26
702893	 screw neck vial N 8	19, 37
702904	 septum N 19	44
702917	 crimp neck vial N 20	40
702918	 crimp neck vial N 20	40
702924	 crimp neck vial N 20	40
702926	 screw closure N 13	35
702927	 crimp closure N 20	42
702928	 crimp closure N 20	43
702928.9	 crimp closure N 20	43
702929	 crimp closure N 20	43
702931	 stopper N 20	44
702931.1	 stopper N 20	44
702962	 screw neck vial N 13	35, 37
702963	 screw cap N 13	35
702966	 screw cap N 13	35
702968	 insert for vials N 8	19
	 insert for vials N 11, small opening	26
702968.1	 insert for vials N 8	19
	 insert for vials N 11, small opening	26
702972	 insert for vials N 13	35
702973	 screw neck vial N 13	35, 37
702974	 metal spring for insert <b>702972</b>	35
702974.1	 metal spring for insert <b>702968</b>	19
702981	 septum N 18	39
702995	 crimp closure N 11	29
702995.1	 crimp closure N 11	29
702995.2	 crimp closure N 11	29
702995.3	 crimp closure N 11	29
707971	 linear capillary connector	48
707972	 linear capillary connector	48

REF	Product	Page
707973	 capillary Y connector	48
735111	 standard manual crimper N 11	27, 49
735113	 standard manual crimper N 13	34, 49
735120	 standard manual crimper N 20	41, 49
735126	 standard manual crimper N 8	18, 49
735132	 standard manual crimper N 20	41, 49
735133	 standard manual crimper N 13	34, 49
735208	 ergonomic manual crimper N 8	18, 50
735211	 ergonomic manual crimper N 11	27, 50
735220	 ergonomic manual crimper N 20	41, 50
735311	 ergonomic manual decapper N 11	27, 50
735320	 ergonomic manual decapper N 20	41, 50
735408	 standard manual decapper N 8	18, 49
735500	 battery for electronic crimping tools	50
735501	 stand for electronic crimping tools	50, 51
735511	 electronic crimper N 11	27, 50
735520	 electronic crimper N 20	41, 50
735611	 electronic decapper N 11	27, 50
735620	 electronic decapper N 20	41, 50
735700	 high power crimping tool (HP)	27
	 high power crimping tool (HP)	41
	 high power crimping tool (HP)	51
735711	 Crimping head N 11 for HP crimping tool	27, 51
735720	 Crimping head N 20 for HP crimping tool	41, 51
735811	 Decapping head N 11 for HP crimping tool	27, 51
735820	 Decapping head N 20 for HP crimping tool	41, 51
735911	 standard manual decapper N 11	27, 49
735911.20	 manual decapper N 11	27
	 manual decapper N 11 and N 20	49
	 manual decapper N 20	41
735913	 standard manual decapper N 13	34, 49
735920	 standard manual decapper N 20	41, 49



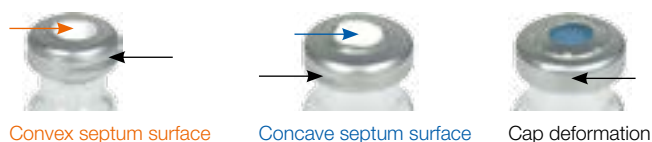
## Practical tips for crimping

### Tips for correct crimping

For optimal crimping results the appropriate crimping tool needs to be adjustable, as type and height of the vial's crimp neck as well as thickness and hardness of the septum are decisive factors in the crimping process. Also variances from batch to batch within the tolerance of each of the involved components may require adjustments of the tool, in order to achieve a perfect and gas-tight seal.

Basically the following recommendations can be made:

- Do not overcrimp a vial with the intention to make the vial tighter for highly volatile samples. In cases of overcrimped vials the septum is either sucked into the vial or emerging out of the cap's center hole. In both cases the septum material is drawn away from the edges towards the middle of the vial due to the high pressure, leaving the edges insufficiently sealed. Besides that, the convex/concave surface of the septum along with its surface tension may lead to penetration problems (e.g., septum being pushed into the vial by the needle during penetration, coring, etc.).



- Deformation of the cap's sides is also an indication for over-crimping with the same consequences as stated above. Another evidence for over-crimping is a clearly visible formation of wrinkles of the aluminium below the crimp neck.
- In the case of 20 mm pressure release caps the bridges of the score lines may also suffer under too much pressure and thus may burst before reaching the specified level of vial pressure, causing problems in the autosampler.
- Generally beveled top crimp necks N 20 have a lower height than the flat DIN crimp neck. In order to seal beveled top Headspace vials tightly, crimping height and crimping pressure have to be adjusted to a firmer seal.



- Decappers do not need any adjustment.
- To check the crimping result, look for the flatness of the septum and make sure that there are no cap deformations, in order to exclude any signs of over-crimping. To check whether the crimping is too loose, try to turn the cap with 2-3 fingers only. For turning, do not use the whole hand or a large amount of power, because this may lead to an impression of under-crimping which is, however, incorrect. The PTFE lamination of the septum has a very smooth surface, which may slip on the glass rim of the vial allowing to turn the cap already with a relatively low expenditure of energy and the right torque. This is even easier in the case of a beveled top Headspace crimp neck, since on the tapered edge of the rim the septum only has a small area of support.
- Re-usage of crimp neck vials is dangerous, as repeated washing along with the pressure of several crimping and decapping processes may result in neck breakage.

Our program comprises the following types of crimping tools:

- Manual crimpers and decappers (standard) for crimp caps N 8, N 11, N 13 and N 20 as well as for Flip Top/Flip Off caps N 13 and N 20
- Manual crimpers and decappers (ergonomic) for crimp caps N 8 (only crimpers), N 11 and N 20
- Electronic crimpers and decappers (battery-powered) for crimp caps N 11 and N 20 (not suitable for magnetic and bi-metal caps)
- Electronic high power crimping tool with power supply with exchangeable heads for crimping and decapping of crimp caps N 11 and N 20

These products are listed in the chapter of the respective crimp neck diameter as well as in the chapter "Vial accessories and other consumables for chromatography" starting on page 49. If you want to find out which type of crimping tool suits your personal needs best, please visit our website under [www.mn-net.com/vial](http://www.mn-net.com/vial) --> Vial accessories and open the PDF datafile that is embedded in the yellow box on top of the section. Please check which of the different user profiles matches your individual requirements best to select an optimal crimping tool.

# Real size drawings

## Screw neck vials N 8 Screw neck vials N 9

Page 19			Page 21									
70213 70213.2	702004 702893	702860	702282 702293	702283 702284	702500	702006	702007 702008	702135 702335	702088	702009 702172	702010	

## Vials N 10 Crimp neck vials N 11

Page 25		Page 26, 27							
702011	702012 702013	70201CG 70214CG	70201HP 70201HP.2	702885 702892	702888	702141	702015 702016	702891 702014	702134 702334

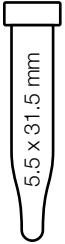
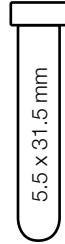



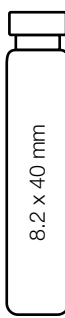

## Snap ring vials N 11 Crimp and screw neck vials N 13

Page 31						Pages 34		Pages 35	
702714	702713 702712	702709	702134 702334	702809 702173	702174	70203	702962 702973	702972	


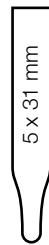


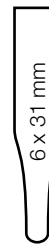
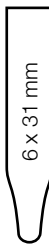

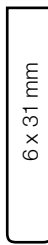
# Real size drawings

## Crimp neck vials N 8

## Shell vials

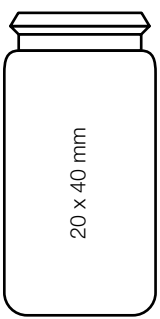
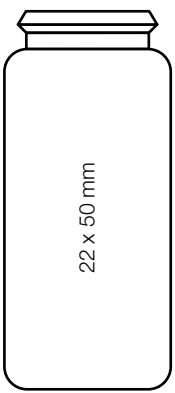

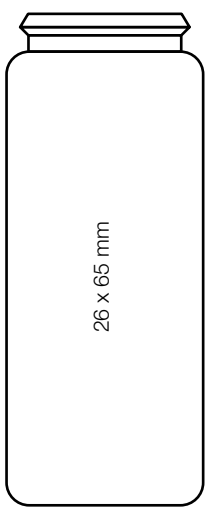

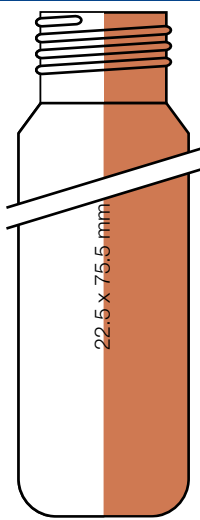
Page 18						Page 36
						
5.5 x 31.5 mm	5.5 x 31.5 mm	8.2 x 30 mm	7 x 40 mm	7 x 40 mm	8.2 x 40 mm	8.2 x 40 mm
70286	70282	70251	70212.1	702002 702003	702880	70202.1 702017

## Inserts for vials N 8, N 9, N 10 and N 11

Page 19, 26 for small opening vials				Pages 21, 25, 26, 31 for wide opening vials			
							
5 x 31 mm	5 x 31 mm	5 x 29 mm	5 x 31 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
702968	702968.1	702824	702005	702813 702077 s	702716	702818 702818.1 s	702825

## Snap cap vials N 18 and N 22

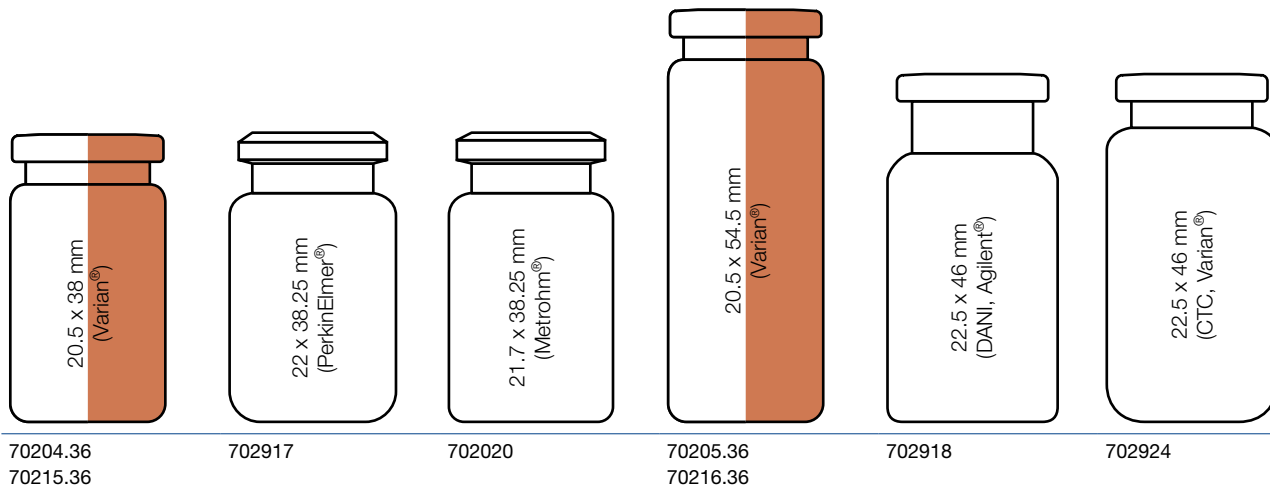
## Screw neck vials N 18

Page 36				Page 39	
					
20 x 40 mm	22 x 50 mm	26 x 48 mm	26 x 65 mm	22.5 x 46 mm	22.5 x 75.5 mm
70271	70272	702019	70273	702866	702826 702826.2

# Real size drawings

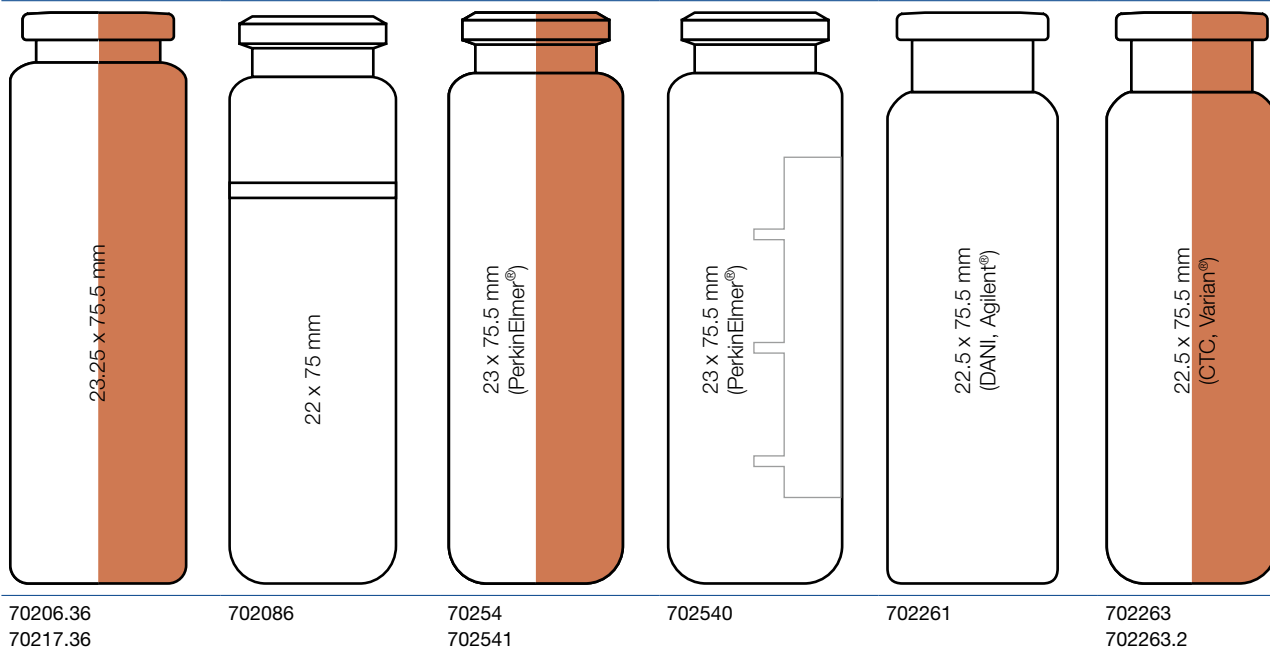
## Crimp neck vials N 20: 5–10 mL

Page 40



## Crimp neck vials N 20: 20 mL

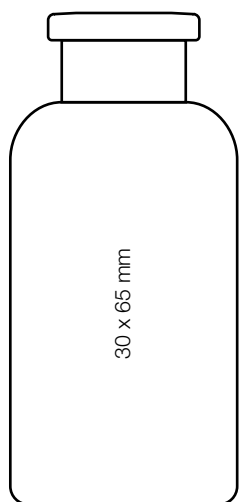
Page 40



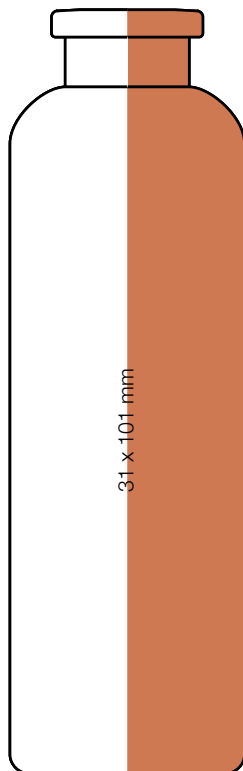
# Real size drawings

## Crimp neck vials N 20: 25 mL, 50 mL, 100 mL

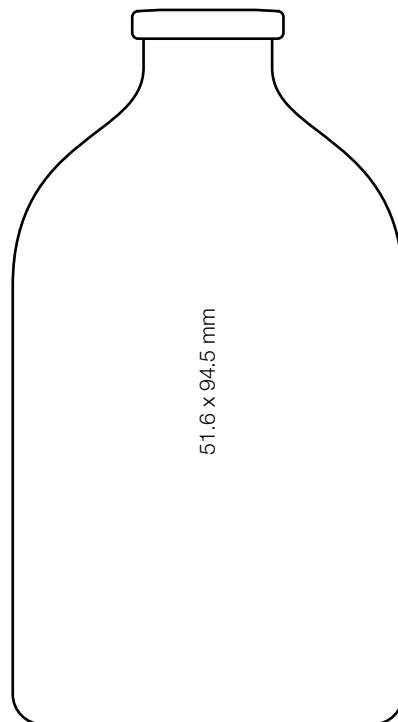
Page 41



70210.36



70208.36 / 702100



70209.1

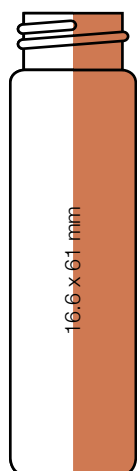
## Screw neck vials for storage of liquid samples

Page 38

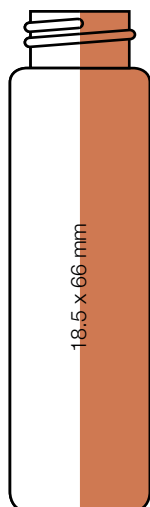
N 15

N 18

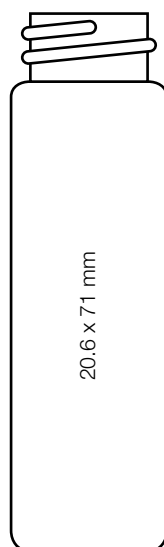
N 20



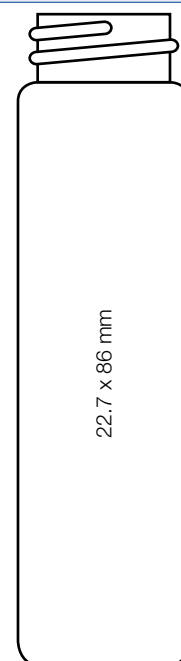
702096 / 702311



70285 / 702097



702098



702099



702021 / 702022

702132 / 702133

702023 / 702024

702074 / 702131

## General remarks

### Interpretation of cross-references in the autosampler compatibility charts

Cross-references are intended for the translation of instrument manufacturers' article numbers to MACHEREY-NAGEL REF numbers. However, a 100 % match is not always possible. The indication “‡” behind a cross-reference implies that the appropriate MACHEREY-NAGEL product is an alternative product which – in spite of technical differences to the indicated product – is suitable for the application. We will be more than happy to explain to you the exact differences to the instrument manufacturers' product, in case there is any need. It may be quite possible that for one instrument manufacturer's product several MACHEREY-NAGEL products are indicated. In this case the most equivalent product is the one that has no additional re-

mark “‡”. Should the instrument manufacturer's packaging unit diverge from ours, we indicate their packaging unit behind the article number after a “/”. The same is valid, if the manufacturer has different article numbers for different packaging units of one and the same product. In case that you do not find a cross-reference, please kindly contact us under [vials@mn-net.com](mailto:vials@mn-net.com). We will always try to find out, whether or not we can supply a similar product. We generally recommend to ask for cost-free samples for testing purposes, as even technically comparable products may differ in their optical appearance. We kindly ask for your understanding that we do not take over any guarantee for the correctness and completeness of the data indicated here.

### Translation tool for cross-references: the VialFinder under [www.mn-net.com/vialfinder](http://www.mn-net.com/vialfinder)

The VialFinder is a database-driven translation tool for cross-references of instrument manufacturers and suppliers of consumables worldwide. The VialFinder immediately shows all options available from MACHEREY-NAGEL for the product of interest. The Finder shows 1:1 matches (in bold type) as well as possible alternative products (in normal type) that – in spite of technical differences to the indicated product – are suitable for the application. The corresponding link on the product description will lead you to the appropriate product page on our website that will give information on technical product features as well as possible illustrations of the product.

In case you cannot find your part number via the VialFinder, please send your inquiry by e-mail to [vials@mn-net.com](mailto:vials@mn-net.com) providing us with all product information you may have. We will check, if we can offer an equivalent product.



### Technical characteristics of vials and closures

Except for the snap cap vials for storage of powdery samples and the blow-molded glass 70209.1, the vials of our program are made from 1<sup>st</sup> hydrolytic class glass. The dimensions stated in this catalog with respect to vial diameter and height are exact values. Please note that other suppliers often list rounded values (e.g., 12 x 32 mm instead of 11.6 x 32 mm), the actual dimensions are, however, identical due to the required fit in the

instrument. Our data concerning the volume are defined realistically usable volumes, not calculated values. For reasons of safety we state rather low values. Here, too, deviations of data of other suppliers may occur, which either use the calculated volume (e.g., 2 mL instead of 1.5 mL) or a defined, realistic usable volume in the upper range (e.g., 1.8 mL instead of 1.5 mL).

### Website guide

Up-dated product range vials and caps:

VialFinder as translation tool for cross-references:

General literature on chromatography products (PDF download):

Link to PDF download of decision tool for choosing the optimal crimping tool

Link to PDF download of poster “Optimal crimping”

Instructions for manual crimping tools (PDF download):

Instructions for electronic crimping tools (PDF download):

Current edition of the „Chroma-News“ as well as their archive:

[www.mn-net.com/vials](http://www.mn-net.com/vials)

[www.mn-net.com/vialfinder](http://www.mn-net.com/vialfinder)

[www.mn-net.com/chroma](http://www.mn-net.com/chroma)

→ Customer services → Catalog download

[www.mn-net.com/vials](http://www.mn-net.com/vials) → Vial accessories (yellow box on top of the chapter)

[www.mn-net.com/vials](http://www.mn-net.com/vials) → Vial accessories

[www.mn-net.com/manualcrimper](http://www.mn-net.com/manualcrimper) (left pane)

[www.mn-net.com/electroniccrimper](http://www.mn-net.com/electroniccrimper) (left pane)

[www.mn-net.com/chroma](http://www.mn-net.com/chroma) (right pane)

## General remarks

### Product literature

The following literature, which contains vials and caps, can be requested free of charge under the indicated KAT no.

- Brochure vials and caps (English): KATEN200010
- Chromatography catalog (English): KATEN200001
- Poster autosampler vials and caps (English): KATEN200086
- Brochure crimping tools (English): KATEN200100

### Closure selection in GC / HPLC

The choice of the best closure depends on certain features of the instrument (needle type / design, transportation mechanism of the autosampler, etc.) as well as on the requirements of the application (temperature, sensitivity of the analysis, single / multiple injections, etc.) and thus is more complicated and more individual than selection of the correct vial type.

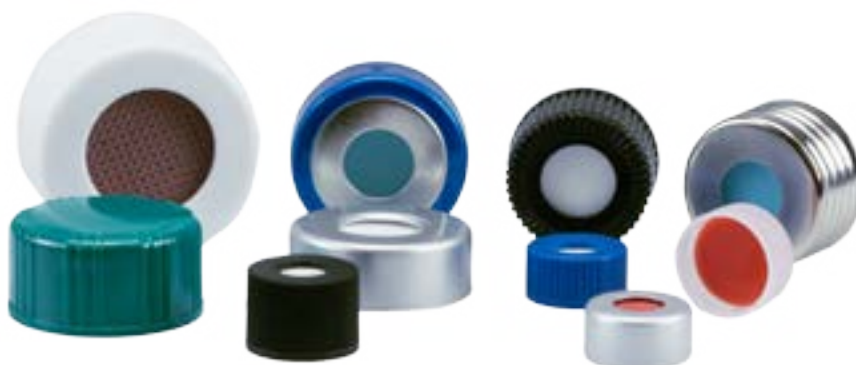
Basically the following recommendations can be made:

- Due to the relatively thick and blunt HPLC needles, only Silicone / PTFE closures, either with or without slit, should be used in combination with them.
- Screw closures N 9 are universally suitable on most autosamplers, convenient in handling and available in a broad selection of different cap colors and septum materials. They fulfill all requirements with regard to tightness and analytical purity for GC as well as for HPLC. Due to the relatively thin septa penetration is safe and easy. Crimp closures N 11 are also universally suitable with regard to autosampler compatibility, however, they are not as safe and convenient in their closing technique as the screw closures N 9.
- Snap ring closures N 11 should only be used in HPLC, as the punctual compacting pressure of the septum against the vial rim by the four pins in the cap does not achieve the same level of tightness as the evenly applied pressure through a circular thread or by crimping.
- For sensitive analyses only high purity Silicone / PTFE closures can be used; if additionally there is a need for minimal coring during penetration, a PTFE / Silicone / PTFE septum (sandwich septum) is recommendable.
- Cap colors may be used for marking (sample marking / lab marking / shift marking). However, please consider that some autosamplers work with photocells which may not be able to recognize transparent caps.

### Samples for evaluation

Sample packs of all vials and closures can be requested at any time. The sample packs contain 5 pieces of the respective product.

- For sample storage closed top screw closures (without center hole) should be used. Generally, these also need an elastomeric liner for sealing vials with liquid samples tightly.
- The ability to penetrate a septum depends on the hardness and the total thickness of the septum. The hardness (durometer) is indicated in "° shore". The higher the number, the harder the septum. For easily bending needles as well as for blunt needles with penetration problems soft and preferably thin septa should be chosen. This supports needle safety (clogging/bending of the needle) as well as reliability of the analysis (no contamination of the sample due to particles generated during penetration).
- Due to their artificially reduced cap height screw caps N 9 don't have a standardized thread design. Therefore, it is recommendable only to use vials and closures from one source of supply, in order to ensure a harmonious and tight matching of both components.
- Replacement septa are partially available, however, in case of manual assembly you have the risk of contamination with skin fat / sweat and of a possible wrong side orientation. Therefore we highly recommend only to use ready assembled closures, where the liner perfectly matches the cap and has been automatically inserted under strict hygienic conditions.
- Normally ready assembled closures should be suitable for all types of needles, provided the proper type of septum has been selected. Nevertheless, there might be cases where usage of bonded closures (cap and liner form an inseparable unit) can be recommendable. Example: blunt HPLC needle, however, due to the risk of sample loss / concentration changes no septa with slit can be used. In order to avoid that the unslit septum is pushed into the vial by the needle, you use a bonded closure with unslit septum.





## General remarks

### Septa guide

Septa material	Temperature resistance from / to	Analytical purity	Fragmentation due to hardness and molecular structure (coring)	Hardness (needle penetration)	Resealability (in case of multiple injections)
PTFE virginal	-200 °C / +260 °C	very high		very hard (but very thin material)	no resealability
Natural rubber / PTFE	-40 °C / +120 °C	low	high, big particles	very hard	high
Red Rubber / TEF (FEP)	-40 °C / +110 °C	medium	medium	medium hard	medium
Butyl	-40 °C / +120 °C	medium	medium	medium hard	medium
Butyl / PTFE	-40 °C / +120 °C	medium	medium	medium hard	medium
Silicone / PTFE	-60 °C / +200 °C	high	low to medium	soft	low to medium
PTFE / Silicone / PTFE	-60 °C / +200 °C	high	very low	soft	very low

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Agilent®: Agilent Technologies, Inc; Shimadzu®: Shimadzu Corporation; Thermo Scientific®: Thermo Fisher Scientific Inc; Varian®: Varian, Inc.; Metrohm: Metrohm AG, Switzerland

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Regarding these products or services we can not grant any guarantees regarding selection, efficiency or operation.

### Product use restriction

MACHEREY-NAGEL chromatography products are intended, developed, designed and sold FOR RESEARCH AND DEVELOPMENT PURPOSES AND ANALYTICAL QUALITY CONTROL / ROUTINE MEASUREMENTS ONLY, except, however, any other function of the product being EXPRESSLY set forth in original MACHEREY-NAGEL product leaflets.

MACHEREY-NAGEL products are intended for GENERAL LABORATORY USE ONLY!

MACHEREY-NAGEL products are suited for QUALIFIED PERSONNEL ONLY !

MACHEREY-NAGEL products shall in any event be used wearing adequate PROTECTIVE CLOTHING!

MACHEREY-NAGEL products shall exclusively be used in an ADEQUATE TEST ENVIRONMENT.

MACHEREY-NAGEL does not assume any responsibility for damages due to improper application of our products in other fields of application.

The user has to ensure that the products used are suitable for the intended application.

### General remarks

All information is subject to technical changes. All product data are subject to the currently valid specifications.



## Other useful MACHERY-NAGEL chromatography products from sample preparation to subsequent analysis

### SPE



- Concentration and clean-up of your target compounds
- CHROMABOND® and CHROMAFIX® columns and cartridges
- Flash columns, packing material and accessories

### Sample filtration



- CHROMAFIL® and CHROMAFIL® Xtra syringe filters
- Protection of sensitive and expensive laboratory equipment
- Use our online FilterFinder on [www.mn-net.com/filterfinder](http://www.mn-net.com/filterfinder)

### HPLC



- NUCLEOSIL® – the original, one of the first spherical HPLC silicas
- NUCLEODUR® – professional solutions by high purity spherical silica
- NUCLEOSHELL® – highest efficiency with core-shell HPLC columns

### TLC



- Quick, easy and cost-efficient separation
- Screening applications and routine analysis
- Glass plates, aluminium and polyester sheets as well as accessories

### GC



- Highly inert and low-bleed OPTIMA® GC capillary columns
- GC columns for routine analysis and special separations
- More than 50 stationary phases



MACHERY-NAGEL – Everything you need for successful work in your chromatography lab.

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## General remarks

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### Contacts

With vials and caps of MACHEREY-NAGEL you can trust on safe consumables for reliable analysis results. In combination with numerous other chromatography products from us you have the unique chance to buy out of one source your whole analysis requirements in a cost-effective and time saving way.

Our sales team and our partners worldwide will be more than happy to serve your chromatography needs in the best way. Our expertise and knowledge is at your disposal at any time. You can contact us or our subsidiaries as shown below:

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