# MACHEREY-NAGEL

# Vials and caps



# For reliable analysis

















#### Quality since 1911

Since 1911 MACHEREY-NAGEL and their products stand for high quality, innovation and reliability in chemical and biomolecular 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 fulfill 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. 700 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 (please see www.mn-net.com/distributors). 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.













SPE and Flash

Syringe filters

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 Charts starting on page 8 and Real Size Drawings starting on page 57) as well as on our website (pls. see www.mn-net.com/vialfinder).

All vials are made from 1st 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. Certificates of conformity for all glass products and closures can be downloaded from our website under www.mn-net.com/certificate or be requested at support@mn-net.com Cost-free samples of all vials and caps can be asked for at any time.

#### 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.

Almost all of our closures, caps and plastic vials are automatically counted (not weighed) for exact quantity obedience and tamper-evidently packed in zip-lock bags. The appropriate product label is directly printed onto the bag's foil.



Environmental analysis (TOC/VOC)



Sample storage



Fully automated production for safe and reliable consumables for chromatography



#### MACHEREY-NAGEL - About us

#### Packaging

Vials and caps can be bought as individual components with 100 pieces in a box respectively in a PE bag. 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.

#### 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.

#### Certficates

In case you need a certificate of conformity (CoC) for your ISO documentation, you can either download it from our website under www.mn-net.com/certificate or contact support@mn-net.com for their assistance. CoCs are based on our own internal QC reports and are batch related. In order to give you an impression on how they look like, please see below an example of such a CoC.







#### Certificate of Analysis

#### Product information

1.5 mL Screw Neck Vial N 9 Product

> outer diameter: 11.6 mm outer height: 32 mm

amber, flat bottom, wide opening, label + scale

REF 702284 2023017876 LOT 23.01.2024 Date of examination:

#### Confirmation

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 The components have been manufactured with fully approved tooling. All required inspections and tests have beer performed and the items delivered conform to the specifications of the order.

MACHEREY-NAGEL furthermore confirms that the vials / inserts have been manufactured from 1st hydrolytic class glass which meets the requirements of analytical purity and chemical resistance needed when used in chromatography applications.

MACHEREY-NAGEL is certified to EN ISO 9001:2015. A copy of this certificate can be provided upon request.

This document has been produced electronically and is valid without a signature





# Contents

New products	6
Autosampler compatibility	8
Shell vials N 8/Crimp neck vials and caps N 8	18
Screw neck vials, inserts and caps N 8	19
Screw neck vials, inserts and caps N 9	21
NID Screw neck vials, inserts and caps N 10	25
Crimp neck vials, inserts and caps N 11	26
Snap ring vials, inserts and caps N 11	30
N13 Crimp neck vials and caps N 13	32
N13 Screw neck vials, insert and caps N 13	33
Diverse vials and caps  Screw neck vials and closed top screw closures for storage of liquid samples  Snap cap vials (for storage of powdery samples) N 18 + N 22 with PE snap caps	. 34
N18 Headspace screw neck vials and magnetic screw caps N 18	37
Crimp neck vials and caps N 20	38
Screw neck vials and caps N 24	43
Vial accessories and other consumables for chromatography  GC injection port septa  Capillary connectors for GC  Manual crimping tools - Standard  Manual crimping tools - Ergonomic  Electronic crimping tools - Battery-powered  Electronic crimping tools - High Power crimping tool  Accessories for crimping tools  Vial containers  Vial racks	. 46 . 47 . 48 . 49 . 49
Numerical index	51
Practical tips for crimping	56
Real size drawings	57
General remarks	62

#### New products

Headspace screw neck vials and magnetic screw closures N 18 for CTC

Combi PAL® and equivalent autosamplers

- New vial types, like 20 mL clear vial with label and scale or 10 mL amber vial
- Open and closed top screw closures N 18 with different septa materials are available
- Aside from Silicone/PTFE and Red Rubber/TEF, also closures with Butyl/PTFE are for sale
- Replacement septa of almost all closures can be obtained
- Magnetic screw closures N 9 and magnetic crimp closures N 11 for 1.5 mL vials as well as magnetic or bi-metal crimp closures N 20 are also included in our delivery program



#### Vials with firmly integrated inserts

Firmly integrated micro-inserts have the advantage of a ready-to-use unit that can be filled easily and safely due to the firm fixation of the insert and that can directly be placed on the lab bench or in a tray/rack afterwards. Sample removal is carried out without any risk for the needle due to the reliable centering of the micro-insert. The risk of any contamination is always lower with ready-to-use sample containers in comparison to individual components that still need to be assembled in the lab.

- Available as glass-in-glass product with insert firmly being melted to the outer glass vial in clear and amber. Clear vials with writing patch have been added to the delivery program.
- Available as glass in plastic product with a glass insert firmly pressed into an outer plastic vial shell for high robustness and excellent price-performance ratio. Upon request also available with integrated silanized glass inserts.



#### New natural rubber/ETFE closures N 11

- Available with silver (70246), green (70246.1), red (70246.2) and blue cap (70246.3)
- Very cost-effective closure for routine analysis in GC and HPLC
- Excellent resealability properties
- Temperature resistant from -40°C up to 120°C
- Alternative product for 702001, 70256, 70231.1, 70231.2, 70231.3



#### New products

#### Silicone/PTFE Pharma-Fix septa

Headspace analysis requires closures with a high temperature resistance, outstanding sealing properties and a high analytical purity. Our new Pharma-Fix Silicone/PTFE septa fulfill all these demands with a temperature resistance of - 60°C up to 200°C and the proven, outstanding performance of Silicone/PTFE with regard to cleanliness and penetrability. With these so-called Pharma-Fix septa the PTFE lamination is only applied centrically in the contact area with the sample, so that the uncoated, elastomeric septa rim can seal the vial's glass crimp neck tighter than completely PTFE laminated septa with their slippery surface. The side edges of these liners are designed lamellar so that they can be well compressed during the crimping process and be pressed firmly onto the glass rim. The drawn-in edge of the center hole keeps the liner in a stable, flat position even in case of high internal vial pressure.

Get the optimal closure for your headspace analysis that combines the following properties:

- Outstanding sealing properties due to only centrically applied PTFE (Pharma-Fix)
- High analytical purity due to long approved silicone/PTFE septa material
- Temperature resistance from 60 °C up to 200 °C
- Safe and easy to penetrate due to the softness of Silicone/PTFE
- Lamellar designed side edges for good compressing during crimping
- The drawn-in edge of the center hole keeps the liner in a stable, flat position



#### PTFE-free (fluorine-free) closures for PFAS analysis

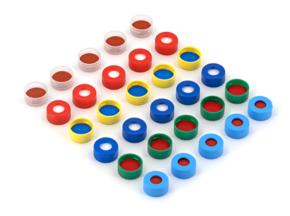
If you are going to carry out a PFAS analysis, it is decisive to select the right vials and closures for this application. Adsorption effects of glass as well as a possible contamination of the sample by particles from the septa, especially from the PTFE lamination, can endanger your analysis. Polyimide or polypropylene coated, fluorine-free septa ensure reliable analysis results and good chemical resistance. Available as 9 mm screw caps (MN REF 702402, 702405 and 702406), 11 mm snap ring cap (MN REF 702403) and as 20 mm bimetal crimp cap (MN REF 702404).



#### Snap ring closures N 11 with different cap colors

Colors play an important role in our lives and are perceived to mean different things. This can be valid, too, in the working life in a lab. Color-coded samples may represent different types of samples, samples from different shifts or from different labs and help us to differentiate them from each other. For snap ring caps N 11 we now offer a broad variety of cap colors with different septa materials to allow color-coding. Aside from this practical aspect, differently colored caps may also have an unconsciously influence on your emotions, as colors make life brighter and people happy.

In addition we also offer a light blue, soft cap with different liners inside that is easier to push on and to remove.



# Agilent®

Main chapter	Pages		Most popular MN products for use on Agilent® instruments
GC			5880, 5890, 6850, 6890, 7650ALS, 7673A, 7683A, 7693A, 7696A, CTC GC PAL® (G650X Agilent® GC Injector 80/120), PAL® 3 (LSI, RSI, RTC)
N 8 Crimp	18	Vials:	70282, 70286
microsampling)	18	Closures:	70289, 702878, 702025
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702088, 702007, 702007.0, 702008, 702135, 702335, 702009, 702172, 702010, 702500
(otaliaara oampioo)	21	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819, 702825
	22, 23	Closures:	702732, 702080, 702082, 702081, 702287.1, 702037, 702038, 702402 (PFAS), 702406 (PFAS), 702035, 702084, 702085, 702026, 702155 (for GC PAL®)
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702075, 702892, 702076, 702888, 702015, 702016, 702891, 702891.0, 702014, 702134, 702334, 702809, 702173, 702174
(otaliaara oampios)	26	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819, 702825
	28	Closures:	70256, 702001, 70246, 70246.3, 70231.1, 70246.1, 70231.2, 70246.2, 702730, 702730.3, 702730.1, 702730.2, 70288, 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3, 702879 (for GC PAL®)
N 13 Screw	33	Vials:	702962, 702973
only 6850, 22 Pos. Tray	33	Insert:	702972 + spring 702974
+ 7693A)	33	Closures:	702926, 702050
HPLC			1050 Series (79855A), 1090 Series, 1100 Series (G1313A/G1329A/G1389A/G2260A), 1200 Series (G1367B, G1367D, G1377A), 1260 Infinity Series, 1290 Infinity Series, 1290 Infinity II Multisampler (G7161B), CTC HTS/HTC PAL®
N 8 Crimp (microsampling	18	Vials:	70282, 70286
	18	Closures:	70289, 702878, 702025
N 9 Screw	21	Vials:	As indicated under GC – Screw N 9 – Vials
standard samples)	21	Inserts:	As indicated under GC – Screw N 9 – Inserts
	22, 23	Closures:	702732, 702080, 702082, 702081, 702287.1, 702037, 702038, 702402 (PFAS), 702405 (PFAS), 702406 (PFAS), 702084, 702085, 702035, 702040, 702083, 702288.1, 702026, 702027
N 11 Crimp	26, 27	Vials:	As indicated under GC - Crimp N 11 - Vials
(standard samples)	26	Inserts:	As indicated under GC – Screw N 9 – Inserts
	28	Closures:	As indicated under GC - Crimp N 11 - Closures, however, not 702879
N 11 Snap	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174
(standard samples)	30	Inserts:	As indicated under GC – Screw N 9 – Inserts
	31	Closures:	702731, 702063, 702063.2080, 702295, 702710.1, 702710.2080, 702095, 702142, 702108, 702064, 702717.2, 702717.2080, 702143, 702150, 702151, 702403 (PFAS), 702718, 702718.1, 702718.2080, 702401
Headspace			HS7694, 8697, HS7697A, G1888A, CTC Combi PAL®, PAL®3 (LSI, RSI, RTC)
N 18 Screw	37	Vials:	702866, 702866.2, 702826, 702826.0, 702826.2
(Combi PAL®, G1888A, HS7697A, 8697)	37	Closures:	702055
N 20 Crimp	38	Vials:	702918, 702261 702924, 702263, 702263.0, 702263.2 (all for Combi PAL®, PAL® 3 LSI, RSI, RTC, HS7697, 8697)
	40, 41, 42	Closures:	70234.10, 70234, 702071, 702094, 702340, 702835, 702931.3 + 702804 = 70237.2 702929, 702341 (both for Combi PAL®, PAL® 3 LSI, RSI, RTC)
Purge + Trap (TOC)			AQUATek 70, AQUATek 100, SOLATek 72, Archon Purge + Trap (7695A), ATOMX XYZ, PAL® 3 (LSI, RSI, RTC)
N 24 Screw	43	Vials:	702023, 702024

# CTC

Main chapter	Pages		Most popular MN products for use on CTC instruments		
GC			CTC (Leap) GC PAL®, CTC (Leap) Combi PAL®/ Combi-xt® PAL, CTC (Leap) PAL® 3 (RTC/RSI/LSI) as well as the appropriate OEM autosamplers (Gerstel, Shimadzu®, etc.) and equivalent instruments of other manufacturers (Konik)		
N 8 Crimp	18	Vials:	70282, 70286		
(microsampling)	18	Closures:	70289, 702878		
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702007.0, 702008, 702135, 702335, 702088, 702500, 702009, 702172, 702010		
(0.00.10.00.00.00.10.00.0)	21	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702825, 702819		
	22, 23	Closures:	702155, 702156 (closures for liquid injection → please see HPLC)		
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702891.0, 702014, 702134, 702134.1, 702334, 702015, 702016, 702809, 702173, 702174		
( ,	26	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702825, 702819		
	28	Closures:	702879 (closures for liquid injection → please see HPLC)		
HPLC			CTC (Leap) LC PAL®, HTX/HTX-xt PAL®, HTC /HTC-xt PAL®, HTS/HTS-xt PAL®, PAL® 3 (LSI, RSI, RTC), Dual Head PAL® as well as equivalent instruments of other manufacturers		
N 9 Screw	21	Vials:	As indicated under GC – Screw N 9 – Vials		
(standard samples)	21	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702825, 702819		
	22, 23	Closures:	702287, 702287.1, 702036, 702037, 702038, 702107, 702026, 702402 (PFAS), 702405 (PFAS),702406 (PFAS), 702288, 702288.1, 702039, 702040, 702083, 702109, 702027, 702286, 702035, 702158, 702084, 702085, 702159		
N 11 Crimp	26, 27	Vials:	As indicated under GC – Crimp N 11 – Vials		
(standard samples)	26	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702825, 702819		
	28	Closures:	70288, 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3, 702823		
N 11 Snap	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174		
(standard samples)	30	Inserts:	As indicated under GC – Screw N 9 – Inserts		
	31	Closures:	702710.1, 702717.2, 702718.1, 702710, 702064, 702718, 702710.2080, 702403 (PFAS), 702717.2080, 702718.2080, 702095, 702142, 702108, 702143, 702150, 702151		
Headspace			CTC (Leap) Combi PAL® / Combi-xt PAL®, PAL® 3 (LSI, RSI, RTC) as well as the appropriate OEM autosamplers (Gerstel, Shimadzu, etc.) and equivalent instruments of other manufacturers (Konik)		
N 18 Screw	37	Vials:	702866, 702866.2, 702826, 702826.0, 702826.2		
	37	Closures:	702827, 702055		
N 20 Crimp	38	Vials:	702924, 702263, 702263.0, 702263.2		
	40, 41, 42	Closures:	702929, 702834, 702341 For washer bottle <b>702924</b> : 70267 + 702144		
Purge + Trap (TOC)			PAL® 3 (LSI, RSI, RTC)		
N 24 Screw	43	Vials:	702023, 702024		
	44	Closures:	702058, 702060, 702062, 702171		

# Dionex® (Thermo Scientific®)

Main chapter	Pages		Most popular MN products for use on Dionex® instruments
HPLC			UltiMate 3000 Basic System (ACC-3000, ACC-3000T), UltiMate 3000 Standard SD (WPS-3000TSL, WPS-3000SL), UltiMate 3000 Rapid Separation RS (WPS-3000RS, WPS-3000TRS), Biocompatible Systems (WPS-3000TBPL, WPS-3000TBRS), UltiMate 3000 RSLCnano (WPS-3000TPL RS, WPS-3000PL RS), UltiMate 3000 Semi-Preparative (WPS-3000TSL, WPS-3000SL), Autosampler with Fraction Collection (WPS-3000TFC, WPS-3000TBFC), Vanquish Systems (VC-A12, VC-A13, VF-A10, VF-A40, VH-A10, VH-A40), Summit ASI-100/ASI-100T, Autoselect AS50, Gina 50/160, Famos
IC*			Dionex® AS, AS-AP, AS 40, AS 50, AS-HV
N 8 Crimp	18	Vials:	70282, 70286
(microsampling)	18	Closures:	702025, 70289
N 8 Screw	19	Vials:	70213, 70213.2, 702004, 702893, 702860
(standard samples)	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, 702007.0, 702008, 702135, 702335, 702006, 702088, 702009*, 702172*, 702010*, 702500*
	21	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819*, 702825
	22, 23	Closures:	702287.1, 702287, 702036, 702037, 702038, 702107, 702026, 702402 (PFAS), 702405 (PFAS), 702406 (PFAS), 702288.1*, 702288*, 702039*, 702040*, 702083*, 702109*, 702027*
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702015, 702016, 702891, 702891.0, 702014, 702134, 702134.1, 702334
, ,	26	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819*, 702825
	28	Closures:	70288, 70288.1, 70288.2, 70288.3, 702823, 70256, 70231.1, 70231.2, 70231.3
N 11 Snap (standard samples)	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174
. ,	30	Inserts:	As indicated under Crimp N 11 – Inserts
	31	Closures:	702710.1, 702710.2080, 702710, 702095, 702142, 702108, 702717.2, 702717.2080, 702064, 702143, 702150, 702151, 702403 (PFAS)
N 13 Screw	33	Vials:	702962, 702973
(large sample volumes)	33	Insert:	702972 + spring 702974
	33	Closures:	702926, 702925
N 18 Screw	37	Vials:	702866, 702866.2
(large sample volumes)	37	Closures:	702827
N 20 Crimp	38	Vials:	702924 (not for Summit ASI-100/ASI-100T, Gina 50)
(large sample volumes)	40	Closures:	702094, 702093
N 24 Screw	43	Vials:	702023*, 702024*, 702074*, 702131* (for AS-HV)
(large sample volumes)	44	Closures:	702058*, 702171* (for AS-HV)
Purge + Trap (TOC, ASE)			ASE 200, ASE 350
N 24 Screw	43	Vials:	702023, 702024 (only for ASE 200), 702074, 702131
	44	Closures:	702058, 702171

#### Knauer

Main chapter Pages			Most popular MN products for use on Knauer instruments
HPLC			TRIATHLON, Knauer Smartline 3800/3950, Knauer UHPLC Version PLATINblue AS 1, Azura® AS 6.1L, Knauer Optimas
N 8 Screw	19	Vials:	70213, 70213.2, 702004, 702893
(standard samples)	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, 702007.0, 702008, 702135, 702335, 702088, 702009, 702172, 702010, 702500
(	21	Inserts:	702813, 702077, 702716, 702818, 702818.1, 702819, 702825
	22, 23	Closures:	702732, 702030, 702080, 702081, 702082, 702147, 702287.1, 702287, 702036, 702037, 702038, 702107, 702402 (PFAS), 702406 (PFAS), 702028, 702026
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702891.0, 702014, 702134, 702134.1, 702334
(	26	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819, 702825
	28	Closures:	70288, 70288.1, 70288.2, 70288.3, 702823, 702730, 702730.1, 702730.2, 702730.3, 70256, 70246.1, 70246.2, 70246.3
N 13 Screw	33	Vials:	702962, 702973
(large sample volumes)	33	Insert:	702972 + spring 702974
(only for TRIATHLON)	33	Closures:	702926, 702050, 702925
N 18 Screw	37	Vials:	702866, 702866.2
(large sample volumes)	37	Closures:	702072, 702055, 702827
N 20 Crimp	38	Vials:	702918
(large sample volumes)	40, 42	Closures:	702094, 702129

## PerkinElmer®

Main chapter	Pages		Most popular MN products for use on PerkinElmer® instruments
GC			AS 100/100B, AS 300, AS 2000/2000B, AS8300, AI-1, AutoSytem, Turbomatrix MultiPrep $^+$ , Clarus 400/480, Clarus 500/580/590, Clarus 600/680/690 (with 108-Vial Tray N6550017 for none PE-Vials, screw neck vials N 9 or N 10 may be used as well $\rightarrow$ see HPLC), AS2400 Liquid Sampler
N 8 Crimp	18	Vials:	70282, 70286
(microsampling)	18	Closures:	702025, 70289, 702878
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702078, 702079, 702284, 702006, 702009, 702172, 702010, 702500, 702007, 702007.0, 702008, 702135, 702335
(	21	Inserts:	702818, 702818.1, 702819, 702825
	22, 23	Closures:	702732, 702028, 702030, 702080, 702081, 702082, 702147, 702287.1, 702026, 702287, 702036, 702037, 702038, 702107, 702402 (PFAS), 702406 (PFAS), 702155 (for Turbomatrix Mulitprep/MultiPrep+)
N 11 Crimp	26	Vials:*	70201CG, 70214CG
(standard samples)	26	Inserts:*	702824, 702005
* small opening ** wide opening	26, 27	Vials:**	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702891.0, 702014, 702134, 702134.1, 702334
*** not for Turbomatrix MultiPrep / Multiprep+	26	Inserts:**	702818, 702818.1, 702819, 702825
Multil Tep / Multiprep+	28	Closures:	702730***, 70256***, 702730.1***, 702730.2***, 702730.3***, 70288, 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3, 702879 (for Turbomatrix Mulitprep/MultiPrep+)
N 13 Screw	33	Vials:	702962, 702973
	33	Inserts:	702972, 702974
	33	Closures:	702926

## PerkinElmer®

Main chapter	Pages		Most popular MN products for use on PerkinElmer® instruments
HPLC			Series 200 LC, ISS 100, ISS 200, ISS 225, LC 600, Integral 4000, Altus™ UPLC, Flexar™, LC 300
N 8 Crimp	18	Vials:	70286
(microsampling)	18	Closures:	702025
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702078, 702079, 702284, 702009, 702172, 702010, 702500, 702007, 702007.0, 702008, 702135, 702335
(	21	Inserts:	702818, 702818.1, 702819, 702825
	22, 23	Closures:	702288.1, 702027, 702288, 702039, 702040, 702083, 702109, 702287.1, 702026, 702287, 702036, 702037, 702038, 702107, 702028, 702732, 702030, 702080, 702081, 702082, 702147, 702402 (PFAS), 702406 (PFAS), 702405 (PFAS)
N 10 Screw	25	Vials:	702012, 702013
(standard samples)	25	Inserts:	As indicated under Screw N 9 – Inserts
	25	Closures:	702047, 702044, 702046
N 11 Crimp (standard samples)	26, 27 26 28	Vials/ Inserts/ Closures:	As indicated under GC – Crimp N 11
N 11 Snap (standard samples)	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334
	30	Inserts:	As indicated under Screw N 9 – Inserts
	31	Closures:	702064, 702717.2, 702143, 702150, 702151, 702717.2080, 702710, 702710.1, 702095, 702142, 702108, 702710.2080, 702403 (PFAS), 702731, 702063, 702295, 702063.2080
Headspace			HS6, HS40/HS40 Trap/HS40 XL, HS100/101, TurboMatrix™ HS16, HS110/HS110 Trap, Turbomatrix MultiPrep / MultiPrep+, HS2400 M
N 18 Screw	37	Vials:	702866, 702866.2, 702826, 702826.0, 702826.2
(for Combi PAL® + Turbomatrix MultiPrep (+), TurboMatrix™ HS 16, 40 + 110 and HS2400 M)	37	Closures:	702055, 702827, 702137
N 20 Crimp	38	Vials:	702924, 702263, 702263.0, 702263.2
(for Combi PAL® / Turbomatrix MultiPrep (+)	41	Closures:	702929, 702834, 702341, 702834, 702834, 702838, 702928.9, 702928
N 20 Crimp	38	Vials:	702917***, 70254, 702540
(for TurboMatrix™ HS 16, 40 + 110 and HS2400 M) *** not suitable for TurboMatrix™ 110	40, 41, 42	Closures:	702773, 702829, 70234.8, 702775, 70234.9, 702835, 702094, 702145, 702931.3 + 702804 = 70237.2, 70234.10, 70234
Purge + Trap (TOC)			AQUATek 100, Turbomatrix MultiPrep/MultiPrep+
N 24 Screw	43	Vials:	702023, 702024
	44	Closures:	702058, 702171, 702060, 702062

## Shimadzu®

Main chapter	Pages		Most popular MN products for use on Shimadzu® instruments
GC			AOC-14, AOC-17, AOC20/AOC-20i/AOC-20s, AOC-30 series, AOC-5000 /AOC5000Plus, AOC-6000
N 8 Crimp	18	Vials:	70282, 70286
(microsampling)	18	Closures:	70289, 702878
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702007.0, 702008, 702135, 702335, 702009, 702172, 702010, 702500
(,	21	Inserts:	702716, 702813, 702077, 702825, 702818, 702819, 702818.1
	22, 23	Closures:	702081, 702732, 702080, 702082, 702147, 702028 (→ all b.m. not for AOC-5000/5000Plus and AOC-6000) 702287.1, 702036, 702037, 702038, 702107, 702402 (PFAS), 702406 (PFAS), 702026 702155, 702156 (for AOC-5000/AOC5000Plus, AOC-6000)
N 10 Screw	25	Vials:	702011, 702012, 702013
(standard samples)	25	Inserts:	As indicated under Screw N 9 – Inserts
	25	Closures:	702046, 702048
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702891.0, 702014, 702134 702134.1, 702334, 702141
	26	Inserts:	As indicated under Screw N 9 – Inserts
	28	Closures:	702730, 702730.1, 702730.2, 702730.3, ( $\rightarrow$ all not for AOC-5000/5000Plus and AOC-6000) 70288, 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3, 702879 (for AOC-5000/5000Plus and AOC-6000)
N 13 Screw (large sample volumes)	33	Vials:	702962, 702973
	33	Insert:	702972 + spring 702974
	33	Closures:	702926, 702963 + 702292
HPLC			SIL-2AS, SIL-6A/SIL-6B, SIL-7A, SIL-8A, SIL-9A, LC-2010a/c, SIL-HTa/c, SIL-10A/AF/AP/SIL-10Ai/SILAxL (Prominence), SIL-10ADvp SIL-20A/SIL-20AC (Prominence), SIL-20AXR/SIL-20ACXR (Nexera XR), SIL-30AC/ACMP (Nexera), SIL-40/SIL-40C/SIL-40 XR/SIL-40C XR/SIL-40C XS/SIL-40C X3 (Nexera), SIL-5000
IC*			SIL-20A/AC (HIC-ESP)
N 8 Crimp	18	Vials:	70282, 70286
(microsampling)	18	Closures:	70289, 702878
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702007.0, 702008, 702135, 702335, 702009*, 702172*, 702010*, 702500*
, ,	21	Inserts:	702716, 702813, 702077, 702825, 702818, 702819*, 702818.1
	22, 23	Closures:	702287.1, 702036, 702037, 702038, 702107, 702402 (PFAS), 702406 (PFAS), 702405 (PFAS), 702026, 702039, 702040, 702083, 702288.1, 702109, 702027
N 10 Screw	25	Vials:	702011, 702012, 702013
(standard samples)	25	Inserts:	As indicated under GC – Screw N 9 – Inserts
	25	Closures:	702046, 702047
N 11 Crimp	26, 27	Vials:	As indicated under GC – Crimp N 11 – Vials
(standard samples)	26	Inserts:	As indicated under GC – Screw N 9 – Inserts
	28	Closures:	70288, 70288.1, 70288.2, 70288.3, 702823
N 11 Snap	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174
(standard samples)	30	Inserts:	As indicated under GC – Screw N 9 – Inserts
	31	Closures:	702710.1, 702710, 702710.2080, 702095, 702142, 702108, 702403 (PFAS), 702717.2, 702064, 702717.2080, 702143, 702150, 702151
N 13 Screw	33	Vials:	702962, 702973
(large sample volumes)	33	Insert:	702972 + spring 702974
	33	Closures:	702926, 702963 + 702292, 702925
N 8, Shell vials (standard samples)	18	Vials + Plugs:	70202.1 + 702807 (not for Sil-10/Ai/AF/AP, SIL-2AS, SIL-6A/Sil-6B, SIL-7A, SIL-8A, SIL-9A)

# Shimadzu®

Main chapter	Pages		Most popular MN products for use on Shimadzu® instruments
Headspace			AOC-5000/5000Plus, AOC-6000, HS-10, HS-20/HS-20Trap, HSS-2B, HSS-3A, HT200H
N 18 Screw AOC-5000/5000Plus / AOC-6000, HT200H	37	Vials:	702866, 702866.2, 702826, 702826.0, 702826.2
	37	Closures:	702055, 702827
N 20 Crimp	38	Vials:	702924, 702263, 702263.0, 702263.2
(AOC-5000/5000Plus / AOC-6000)	41, 42	Closures:	702929, 702928, 702834, 702341, closure for washer bottle <b>702924</b> : 70267 + 702144
N 20 Crimp	38	Vials:	702918, 702261, 70210.36
(HSS-2B, HSS-3A)	40	Closures:	702093, 702094, 702927, 702835
N 20 Crimp	38	Vials:	702924, 702263, 702263.0, 702263.2
(HS-20/HS-20Trap, HT200H, HS-10)	40	Closures:	702093, 702094, 702927, 702835
Purge + Trap (TOC)			ASI-L/ASI-V
N 20 Screw	35	Vials:	702099
	35	Closures:	702181
N 24 Screw	43	Vials:	702023, 702024, 702021, 702022
	44	Closures:	702058, 702171, 702060, 702062

#### Thermo Scientific®

Main chapter	Pages		Most popular MN products for use on Thermo Scientific® instruments
GC			Al/AS1310, TriPlus <sup>TM</sup> RSH, TriPlus <sup>TM</sup> 100 LS, AS1000/AS2000 (Trace GC), AS/Al3000(II) (Trace + Focus GC), AS200, AS800, Al/AS 1610 (Trace GC)
N 8 Crimp	18	Vials:	70282, 70286
(microsampling)	18	Closures:	70289, 702025, 702878
N 8 Screw	19	Vials:	70213, 70213.2, 702004, 702893, 702860
(standard samples)	19	Inserts:	702968, 702968.1, 702824, 702005
	20	Closures:	702067, 70245, 702069
N 9 Screw (standard samples)	21	Vials:	702282, 702283, 702293, 702284, 702078, 702079, 702006, 702007, 702007.0, 702008, 702135, 702335, 702009, 702172, 702010, 702500
(	21	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819, 702825
	22, 23	Closures:	702732, 702030, 702080, 702081, 702082, 702147, 702028, 702287.1, 702287, 702036, 702037, 702038, 702107, 702026, 702402 (for PFAS), 702406 (for PFAS) 702155 (for TriPlus™ RSH)
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702891.0, 702014, 702134, 702134.1, 702334
	26	Inserts:	As indicated under Screw N 9 – Inserts
	28	Closures:	70256, 702730, 702730.1, 702730.2, 702730.3, 70288.3, 70288, 70288.2, 70288.1, 702879 (for TriPlus™ RSH)

## Thermo Scientific®

Main chapter	Pages		Most popular MN products for use on Thermo Scientific® instruments
HPLC			Famos (LC Packings), AS1000/AS3000/AS3500 SpectraSYSTEM, AS100/AS300 SpektraSERIES, Surveyor/Surveyor Plus, Accela/Accela Open AS as well as autosamplers of Dionex® (pls. see page 10)
N 8 Crimp	18	Vials:	70282, 70286
(microsampling)	18	Closures:	70289, 702025, 702878
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, 702283, 702293, 702284, 702078, 702079, 702006, 702007, 702007.0, 702008, 702135, 702335, 702009, 702172, 702010, 702500
	21	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702819, 702825
	22, 23	Closures:	702287.1, 702287, 702036, 702037, 702038, 702107, 702026, 702402 (PFAS), 702406 (PFAS), 702405 (PFAS), 702288.1, 702288, 702039, 702040, 702083, 702109, 702027
N 11 Crimp (standard samples)	26, 27	Vials:	As indicated under GC – Crimp N 11 - Vials
	26	Inserts:	As indicated under Screw N 9 – Inserts
	28	Closures:	70288.3, 70288, 70288.2, 70288.1, 702823
N 11 Snap	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174
(standard samples)	30	Inserts:	As indicated under GC – Screw N 9 – Inserts
	31	Closures:	702710, 702710.1, 702710.2080, 702095, 702142, 702108, 702403 (PFAS), 702064, 702717.2, 702717.2080, 702150, 702151, 702143
N 20 Crimp	38	Vials:	702924
(large sample volumes)	40	Closures:	702093, 702340
Headspace			HS250/500/800/850 (Carlo Erba), HS2000 (Finnigan), TriPlus™ 300 HS, TriPlus™ 500 HS, TriPlus™ RSH, TriPlus™ 100 LS
N 18 Screw	37	Vials:	702866, 702866.2, 702826, 702826.0, 702826.2
(for TriPlus <sup>™</sup> RSH/ HS/ SPME/300/500)	37	Closures:	702055, 702827
N 20 Crimp (*: for	38	Vials:	702924*, 702918, 702263*, 702263.0*,702263.2*, 702261
TriPlus™ RSH, TriPlus™ 100LS, HS250/500/800)	40, 41, 42	Closures:	702775, 70234.9, 702773, 702931.3 + 702804 = 70237.2, 702093, 702094, 702340, 70234.10, 70234, 702929*, 702834*, 702341*
Purge + Trap (TOC)			HiPerTOC
N 24 Screw	43	Vials:	702021, 702022, 702023, 702024
	44	Closures:	702058, 702171, 702168, 702060, 702062

# VWR® (Merck® / Hitachi®)

Main chapter	Pages		Most popular MN products for use on VWR® instruments		
HPLC			AS 2000, AS 4000, AS 6000, LaChrom Elite L-2200/L-2200U, LaChrom Elite L-7200/L-7250, Chromaster HPLC 5210/5260/5280, ChromasterUltra RS UHPLC 6270, Primaide™ PM1210 / PM1210TS , 655-A40, L-9100		
N 8 Crimp	18	Vials:	70282, 70286		
(microsampling) For AS 4000/AS 6000, LAChrom L-7200/L-7250	18	Closures:	70289, 702878		
N 8 Screw	19	Vials:	70213, 70213.2, 702004, 702893, 702860		
(standard samples)	19	Inserts:	702968, 702968.1, 702824, 702005		
	20	Closures:	70245, 702437, 702067		
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702078, 702284, 702079, 702007, 702007.0, 702008, 702006, 702135, 702335, 702009, 702172, 702010, 702500		
(	21	Inserts:	702813, 702077, 702818, 702818.1, 702819, 702716, 702825		
	22, 23	Closures:	702287.1, 702287, 702036, 702037, 702038, 702107, 702402 (PFAS), 702406 (PFAS), 702405 (PFAS), 702288.1, 702288, 702039, 702040, 702083, 702109, 702026, 702027		
N 11 Crimp (standard samples)	26, 27	Vials:	70201HP, 70201HP.2, 702885, 702075, 702892, 702076, 702888, 702891, 702891.0, 702014, 702134, 702134.1, 702334		
( ,	26	Inserts:	As indicated under Screw N 9 – Inserts		
	28	Closures:	70288, 70288.1, 70288.2, 70288.3, 702823		
N 11 Snap (standard samples)	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174		
(	30	Inserts:	As indicated under Screw N 9 – Inserts		
	31	Closures:	702710.1, 702710, 702710.2080, 702095, 702142, 702108, 702403 (PFAS), 702717.2, 702064, 702717.2080, 702143, 702150, 702151, 702718.1, 702718, 702718.2080, 702063, 702731, 702063.2080, 702295		
N 8 Shell vials (standard samples) Only for Chromaster and LaChrom Elite L-2200/ L-2200U	18	Vials + plugs:	70202.1 + 702807		
N 13 Screw	33	Vials:	702962, 702973		
(large sample volumes)	33	Insert:	702972 + spring 702974		
Not for AS 2000/AS 4000/ AS 6000	33	Closures:	702926, 702925, 702963 + 70260		

#### Waters®

Main chapter	Pages		Most popular MN products for use on Waters® instruments
HPLC			WISP, 717 (Plus), GPC 2000, 2707/2707 LSV, Alliance® 2690/2695/e2695, Alliance® 2790/2795, ACQUITY® UPLC/UHPLC Systems, Arc HPLC System, 2777 (CTC PAL®)
N 9 Screw (standard samples)	21	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702007, 702007.0, 702008, 702135, 702335, 702006 (not for 2690/2695), 702009, 702172, 702010, 702500
Not for WISP, 717 (Plus),	21	Inserts:	702818, 702818.1, 702819
GPC 2000	22, 23	Closures:	702026, 702027, 702287.1, 702287, 702036, 702037, 702038, 702402 (PFAS), 702406 (PFAS), 702405 (PFAS), 702288.1, 702288, 702039, 702040, 702083
N 10 Screw	25	Vials:	702011, 702012, 702013
(standard samples)	25	Inserts:	702818, 702818.1, 702819
For Alliance 2690/2695, Alliance 2790/2795	25	Closures:	702046, 702047
N 11 Crimp	26	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076
(standard samples)	26	Inserts:	702818, 702818.1, 702819
For Alliance 2690/2695	28	Closures:	70288, 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3
N 11 Snap (standard samples)	30	Vials:	702714, 702713, 702712, 702709, 702708, 702134, 702134.1, 702334, 702809, 702173, 702174
For Alliance 2690/2695,	30	Inserts:	702818, 702818.1, 702819
Alliance 2790/2795	31	Closures:	702710.1, 702095, 702142, 702108, 702403 (PFAS), 702717.2, 702143, 702150, 702151
N 8 Shell Vials (standard samples) Only for WISP, 717 (Plus)	18	Vials + Plugs:	70202.1 + 702807
N 13 Screw	33	Vials:	702962, 702973
(large sample volumes)	33	Insert:	702972 + spring 702974
Only for WISP, 717 (Plus), GPC 2000	33	Closures:	702926, 702925, 702963 + 70260



# Finding instead of searching: Translation of cross-references with the VialFinder



Are you in need to change your current vials and caps supplier due to quality, price or delivery issues? Make an easy changeover to vials and caps from MACHEREY-NAGEL by using our VialFinder - a database driven tool on our website that can help you with the translation of cross-references of vials and caps products from suppliers from all over the world. This powerful and easy-to-use tool has been updated, so that you now find cross-references from almost 60 suppliers worldwide (instrument companies and consumables suppliers).

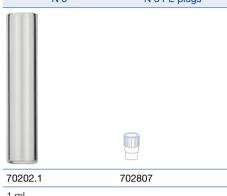


www.mn-net.com/vialfinder

#### Shell vials N 8/Crimp neck vials and caps N 8

#### Shell vials N 8

Fire-polished neck N 8	To be used with N 8 PE plugs



*	
70202.1	702807
1 mL	
8.2 × 40 mm	
clear	
flat bottom	
100/PP box	100/PE Bag

#### Crimp neck vials N 8

For micro sampling



U	$\bigcirc$
70286	70282
0.2 mL	0.3 mL
5.5 × 31.5 mm	5.5 × 31.5 mm
clear	clear
conical	round bottom
100/PE bag	100/PE bag

#### Crimping tools N 8

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



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

REF	(Scale 1:1.6)	Cap description	Septum description	Hardness	Thickness	Pack of
702025		N 8 aluminum crimp cap, silver, center hole	Red Rubber/FEP colorless	45° shore A	1.0 mm	100/PE bag
70289		N 8 aluminum crimp cap, silver, center hole	Silicone white/PTFE red	45° shore A	1.0 mm	100/PE bag
702878		N 8 aluminum crimp cap, silver, center hole	PTFE red/Silicone white/PTFE red	50° shore A	1.0 mm	100/PE bag
702800	-	N 8 aluminum crimp cap, silver, center hole (no liner)	_	-	=	100/PE bag



# Inserts and micro-vials for sample volumes < 1.0 mL

Samples with a lower volume than 1.0 mL have to be delivered to the autosampler in appropriate micro sample containers, in order to offer the needle ideal conditions for sample removal. During selection of the most suitable product, safety, handling and price are important factors. In order to give you an overview on the different options on micro-inserts and micro-vials, please watch our video "Micro-sampling in chromatography" under: www.mn-net.com/chromatography/vials-and-caps/inserts-information/





#### Screw neck vials N 8

		Small opening, 8-425 th	read	
		15000	5005	
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/PE bag

# 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		

## Container for screw neck vials N 8

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

#### 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



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

REF	(Scale 1:1.6)	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	(Scale 1:1.6)	Cap description	Septum description	Hardness	Thickness	Pack of
70261	0	- (septa only)	PTFE virginal, white	53° shore D	0.25 mm	100/PE bag
702070		- (septa only)	Red Rubber/FEP colorless	45° shore A	1.3 mm	100/PE bag
70248		- (septa only)	Silicone white / PTFE red	45° shore A	1.3 mm	100/PE bag
702481	<b>~</b>	- (septa only)	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100/PE bag

# 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.



#### Screw neck vials and inserts N 9

#### Wide opening, short thread Polypropylene Polypropylene 702500 702716 702282 702293 702283 702284 702813 702818 702819 702825 silanized silanized silanized silanized 702078 702079 702077 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 0.1 mL 0.3 mL 11.6 x 32 mm 6 x 31 mm 6 x 31 mm 5.7 x 29 mm 5.7 x 29 mm 6 x 31 mm clear amber clear, amber, transparent, clear clear clear transparent clear label + scale label + scale filling lines flat bottom flat bottom flat bottom flat bottom flat bottom with plastic with integrated flat bottom conical, conical, 15 mm tip 12 mm tip spring spring 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 100/PE bag

			Micro	o-vials N 9 for s	mall sample vol	umes			
				PP/ Glass insert	PP / Glass insert		Polypropylene	Polypropylene	Polypropylene
702006	702007	702007.0	702008	702135*	702335*	702088	702009	702172	702010
1.1 mL	0.2 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	11.6 x 32 mm
clear	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 integra- ted 0.2 mL insert, label	flat bottom, with integra- ted 0.2 mL insert	flat bottom, with integra- ted 0.2 mL glass insert	flat bottom, with integra- ted 0.2 mL glass 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/PP box	100/PE bag	100/PE bag	100/PE bag
* upon request	* 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 <b>702282</b> : 1.5 mL, clear, flat bottom	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100/PP box	702177
Vial <b>702283</b> : 1.5 mL, clear, flat bottom, label + scale	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100/PP box	702178
Vial <b>702284</b> : 1.5 mL, amber, flat bottom, label + scale	with pre-assembled micro-insert 702813: 0.2 mL, conical, 15 mm tip	100/PP box	702179

#### Container for screw neck vials N 9

REF	Description	Pack of
702514	81 position container blue for screw neck vials N 9, $130 \times 130 \times 45$ 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	1
	Dimensions: 190 x 100 x 22 mm, stackable	



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

Cap des	cription (Sc	ale 1:1.6)					Septum description	Hardness	Thickness	Pack of
N 9 PP screw cap, color as indicated, center hole closed top					PTFE virginal, white	53° shore D	0.25 mm	100/PE bag		
702029	702031					702032				
N 9 PP so	crew cap, bl	ue, center	hole				Silicone white / Polyimide orange,	50° shore A	1.0 mm	100/PE bag
							(fluorine-free, for PFAS analysis)			
							as above, however, with slit			
	702402	702405					ds above, nowever, with silt			
N 9 PP so	crew cap, bl	ue, center	hole				Silicone white / Polypropylene colorless (fluorine-free, for PFAS analysis)	45° shore A	1.0 mm	100/PE bag
	702406									
N 9 PP so	crew cap, co	olor as indic	cated, cente	er hole		closed top	Red Rubber / FEP colorless	45° shore A	1.0 mm	100/PE bag
702030	702732	702080	702081	702082	702147	702033				
	crew cap, co						Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
	No. of the last of				line or ment	lite and				· ·
70007	700007.4	700000	700007	700000	700407	700004				
702287	702287.1 crew cap, co		702037	702038	702107	702034	Silicone white/PTFE blue, slit	55° shore A	1.0 mm	100/PE bag
11911 30	orew cap, co	olor as iriuic	Dated, Certic	SI TIOIE			Silicone writte/1 11 L blue, slit	JJ SHOLE A	1.0 111111	100/1 L bag
702288	702288.1		702040	702083	702109					
N 9 PP so	crew cap, co	olor as indic	cated, cente	er hole			PTFE red/Silicone white/PTFE red	50° shore A	1.0 mm	100/PE bag
702286	702035	702158	702084	702085	702159					
N 9 PP so	crew cap, co	olor as indic	cated, cente	er hole (no l	iner)		-	_	-	100/PE bag
702160	702161	702162	702163	702164	702165					



#### Ready assembled magnetic screw closures N 9

REF	(Scale 1:1.6)	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
702156		N 9 magnetic screw cap, silver, center hole	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100/PE bag

#### N 9 septa for screw caps N 9

REF	(Scale 1:1.6)	Cap description	Septum description	Hardness	Thickness	Pack of
702043		- (septa only)	PTFE virginal, white	53° shore D	0.25 mm	100/PE bag
702041		- (septa only)	Red Rubber/FEP colorless	45° shore A	1.0 mm	100/PE bag
702042		- (septa only)	Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
702148	<b>⊘</b>	- (septa only)	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100/PE bag

#### Bonded screw closures N 9

REF	(Scale 1:1.6)	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	00	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)



# Vials and caps for PFAS analysis

Per- and polyfluoroalkyl substances (PFAS) are used for many daily applications, e.g. food packaging and textile coating, because of their non-sticky properties. However, most PFAS are dangerous substances that need to be monitored globally. Due to their increasing appearance in the environment, new product solutions for their analysis are of great demand.

When you are doing PFAS analysis, it is crucial to select the right vials and closures for this application. Adsorption effects of glass as well as possible contaminations of the sample by particles from the septa, especially from the PTFE lamination, may put your analysis results at risk.

Polypropylene vials are best suited for PFAS analysis, since the adsorption effects are the lowest and the signal strength of the analytes is therefore the highest. Fluorine-free septa, i. e. septa with a polyimide or a polypropylene coating rather than a PTFE coating, are recommended to eliminate any migration of fluorine into the sample.



#### 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	702857
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	702858
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	702874
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	702863
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	702873
Pre-sealed vials 702283: 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	702864



# 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 to 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 1.5 mL, 0.3 mL and 0.7 mL volume in transparent and amber are available.

 Plastic vials with integrated glass insert In comparison to the glass-in-glass products, glass-inplastic 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 insert sits 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





#### Screw neck vials and inserts N 10

#### Wide opening, 10-425 thread Polypropylene 702716 702011 702012 702013 702813 702818 702819 702825 silanized 702077 silanized 702818.1 1.5 mL 1.5 mL 1.5 mL 0.2 mL 0.25 mL 0.1 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 5.7 x 29 mm 6 x 31 mm clear clear, label + scale amber, label + scale clear clear clear transparent clear flat bottom flat bottom flat bottom conical, 15 mm tip conical, 12 mm tip with integrated flat bottom with plastic spring spring 100/PP box 100/PP box 100/PP box 100/PE bag 100/PE bag 100/PE bag 100/PE bag 100/PE bag

#### Container 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	Scale (1:1.6)	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
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	50° shore A	1.0 mm	100/PE bag
702049	_	N 10 PP screw cap, black, center hole (no liner)	-	-	-	100/PE bag

<sup>\*</sup> Septum firmly connected with the cap; cannot be removed

# Crimp neck vials, inserts and caps N 11

#### Crimp neck vials N 11

	Small opening vials	Wide opening vials				
					1,5	
70201CG	70214CG	70201HP	70201HP.2	702885	702892	
				silanized 702075	silanized 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				
				Polypropylene				
							Y À	
702968	702968.1	702824	702005	702813	702716	702818	702819	702825
				silanized 702077		silanized 702818.1		
0.1 mL	0.15 mL	0.1 mL	0.25 mL	0.2 mL	0.25 mL	0.1 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	5.7 x 29 mm	6 x 31 mm
clear	clear	clear	clear	clear	clear	clear	transparent	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	with integrated 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	100/PE bag

## Container 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,	1
	with transparent lid (suitable for freezers)	

### 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 N 11 for small sample volumes PP/Glass PP/Glass insert insert 702888 702141 702015 702016 702891 702891.0 702014 702134\* 702334 1.1 mL 1.1 mL 1.1 mL 0.2 mL 0.2 mL 0.2 mL 0.2 mL 0.2 mL 1.1 mL 11.6 x 32 mm amber clear clear amber amber clear clear clear clear flat bottom, conical conical with conical with flat bottom, flat bottom, flat bottom, flat bottom, flat bottom, round pedestal round pedestal with integrated with integrated 15 µL funnel with integrated with integrated with integrated in solid glass glass plate glass plate 0.2 mL insert 0.2 mL insert, 0.2 mL insert 0.2 mL glass 0.2 mL glass bottom label insert insert 100/PP box 100/PP box 100/PE bag 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 aluminum crimp caps	1/box
735911	Manual decapper (standard) for 11 mm aluminum crimp caps	1/box
735211	Ergonomic crimper for 11 mm aluminum crimp caps	1/box
735311	Ergonomic decapper for 11 mm aluminum crimp caps	1 /box
735511	Electronic crimper for 11 mm aluminum crimp caps (battery-powered)	1/box
735611	Electronic decapper for 11 mm aluminum crimp caps (battery-powered)	1/box
735700	Electronic high power crimping tool with power supply	1 /box
735711	Crimping head for 11 mm crimp caps (aluminum, magnetic)	1 /box
735811	Decapping head for 11 mm crimp caps (aluminum, magnetic)	1/box









# Crimp neck vials, inserts and caps N 11

#### Ready assembled crimp closures and plain crimp caps N 11

Cap desc	ription (Scale	1:1.6)			Septum description	Hardness	Thickness	Pack of
N 11 alum	ninum crimp ca	p, color as in	dicated, cente	er hole	Natural rubber orange/ETFE colorless	45° shore A	1.0 mm	100/PE bag
70246	70246.1	70246.2	70246.3	or holo	Natural rubber / Butyl red-orange / TEF colorless	45° choro ∧	1.0 mm	100/PE bag
IN 11 alum	ninum crimp ca	p, color as in	uicateu, cente	er mole	Natural rubber / Butyl red-orange / TEF coloness	45 SHOTE A	1.0 111111	1007 PE bag
70050	70004.4	70004.0						
70256 N 11 alum	70231.1 ninum crimp ca	70231.2	dicated center	er hole	Red Rubber/FEP colorless	45° shore A	1.0 mm	100/PE bag
		p, color de in		3. 1.0.0		10 011070		10071 2 2009
702730 N. 11 alum	702730.1 ninum crimp ca	702730.2	702730.3	ar hole	Silicone white / PTFE red	45° shore A	1.3 mm	100/PE bag
T T alam		p, color as in	alcated, certic	or Hole	Olicone write/1 11 E red	40 31016 A	1.011111	10071 L bag
70288	70288.1	70288.2	70288.3	702879 (magnetic, 1.0 mm)				
N 11 alum	ninum crimp ca	p, color as in	dicated, cente		PTFE red/Silicone white/PTFE red	50° shore A	1.0 mm	100/PE bag
702995	702995.1	702995.2	702995.3					
N 11 alum	ninum crimp ca	p, silver, cent	er hole		Silicone white / PTFE blue, cross-slit	55° shore A	1.5 mm	100/PE bag
702823*								
N 11 alum	ninum crimp ca	p, silver, cent	er hole		Red Rubber / FEP colorless	45° shore A	1.3 mm	100/PE bag
702736*								
N 11 alum	ninum crimp ca	p, silver, cent	er hole		Natural rubber red-orange/TEF colorless	60° shore A	1.0 mm	100/PE bag
702001								
N 11 alum	ninum crimp ca	p, silver, cent	er hole		Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.3 mm	100/PE bag
70231								
N 11 alum	ninum crimp ca	p, silver, cent	er hole		PTFE gray / Butyl beige / PTFE gray	55° shore A	1.3 mm	100/PE bag
70239								
N 11 alum	ninum crimp ca	p, silver, cent	er hole		PTFE virginal, white	53° shore D	0.25 mm	100/PE bag
70284								
N 11 alum	ninum crimp ca	p, silver, roll g	grove, center l	nole	O-ring and aluminum septa TPF (Total Phthalate Free)		0.1 mm	100/glass jar
0								
702175								

<sup>\*</sup> upon request also available with a green, red or a blue crimp cap

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



#### Ready assembled crimp closures and plain crimp caps N 11

Cap description (Scale 1:1.6)	Septum description	Hardness	Thickness	Pack of
N 11 aluminum crimp cap, silver, center hole (no liner)	-	-	-	100/PE bag
702801				
N 11 PE cap, transparent, closed top, thin piercing area	-			100/PE bag
702401				

<sup>\*</sup> upon request also available with a green, red or a blue crimp cap

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

Closure description	Pack of	REF
crimped with <b>70256</b> :  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange/TEF colorless, 45° shore A, 1.0 mm	100	702101HP
crimped with 70256:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange/TEF colorless, 45° shore A, 1.0 mm	100	702859
crimped with <b>702995</b> :  N 11 aluminum crimp cap, silver, center hole, PTFE red/ Silicone white/PTFE red, 50° shore A, 1.0 mm	100	702867
crimped with 70231:  N 11 aluminum crimp cap, silver, center hole, Natural rubber / Butyl red-orange / TEF colorless, 45° shore A, 1.3 mm	100	702882
crimped with 702823:  N 11 aluminum crimp cap, silver, center hole, Silicone white / PTFE blue, cross-slit, 55° shore A, 1.5 mm	100	702887
crimped with 702823:  N 11 aluminum crimp cap, silver, center hole, Silicone white / PTFE blue, cross-slit, 55° shore A, 1.5 mm	100	702895
	crimped with 70256:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange/TEF colorless, 45° shore A, 1.0 mm  crimped with 70256:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange/TEF colorless, 45° shore A, 1.0 mm  crimped with 702995:  N 11 aluminum crimp cap, silver, center hole, PTFE red/ Silicone white/PTFE red, 50° shore A, 1.0 mm  crimped with 70231:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange / TEF colorless, 45° shore A, 1.3 mm  crimped with 702823:  N 11 aluminum crimp cap, silver, center hole, Silicone white/PTFE blue, cross-slit, 55° shore A, 1.5 mm  crimped with 702823: N 11 aluminum crimp cap, silver, center hole, Silicone	crimped with 70256:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange/TEF colorless, 45° shore A, 1.0 mm  crimped with 70256:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange/TEF colorless, 45° shore A, 1.0 mm  crimped with 702995:  N 11 aluminum crimp cap, silver, center hole, PTFE red/ Silicone white/PTFE red, 50° shore A, 1.0 mm  crimped with 70231:  N 11 aluminum crimp cap, silver, center hole, Natural rubber/ Butyl red-orange / TEF colorless, 45° shore A, 1.3 mm  crimped with 702823:  N 11 aluminum crimp cap, silver, center hole, Silicone white/PTFE blue, cross-slit, 55° shore A, 1.5 mm  crimped with 702823: N 11 aluminum crimp cap, silver, center hole, Silicone white/PTFE blue, cross-slit, 55° shore A, 1.5 mm

# Useful tips for optimal crimping

 $can \ be \ found \ on \ our \ website \ under \ \textit{www.mn-net.com/media/pdf/Poster-Optimal-Crimping-EN.pdf} \ .$ 

As a decision-making aid when choosing the most suitable crimping tool for your personal needs, use our specialized brochure "Crimping tools", which you can find in the chromatography download area at www.mn-net.com/chromatography-downloads on our website.



To find out about the different operation modes of the various crimping tool types, please click on the tab "Learn more" on the product detail page of each crimping tool on our website.

# Snap ring vials, inserts and caps N 11

#### Snap ring vials and inserts N 11 Wide opening, vials can alternatively be crimped as well (see page 28) Polypropylene 702819 702714 702713 702712 702813 702716 702818 702825 silanized 702077 silanized 702818.1 1.5 mL 1.5 mL 0.2 mL 0.25 mL 0.1 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 5.7 x 29 mm 6 x 31 mm clear clear, label + amber, label + clear transparent clear clear clear scale scale flat bottom flat bottom flat bottom conical, 15 mm conical, 12 mm with plastic spring with integrated flat bottom spring 100/PE bag 100/PP box 100/PP box 100/PP box 100/PE bag 100/PE bag 100/PE bag 100/PE bag Micro-vials N 11 for small sample volumes PP/Glass insert PP/Glass insert Polypropylene Polypropylene Polypropylene

	1.2.1		W		4
702709/702708	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/amber	clear	amber	transparent	amber	transparent
flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL glass insert	flat bottom, with integrated 0.2 mL glass 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

<sup>\*</sup> 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/PP box	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/PP box	702176
Further pre-assembled vial-insert combinations on request			

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



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

Cap description (Scale 1:1.6)					Septum description	Hardness	Thickness	Pack of
N 11 PE snap ring cap, color as indicated, center hole					Red Rubber/FEP colorless	45° shore A	1.0 mm	100/PE bag
702731	702063	702295						
N 11 PE sn	ap ring cap, co	olor as indicate	ed, center hole		Silicone white / PTFE red	45° shore A	1.0 mm	100/PE bag
702710	702710.1	702095	702142	702108				
N 11 PE sn	ap ring cap, co	olor as indicate	ed, center hole		Silicone white / PTFE blue, cross-slit	55° shore A	1.0 mm	100/PE bag
H	476							
702064	702717.2	702143	702150	702151				
N 11 PE sn	ap ring cap, co	olor as indicate	ed, center hole		PTFE red/Silicone white/PTFE red	50° shore A	1.0 mm	100/PE bag
702718	702718.1							
N 11 PE ca	p, transparent,	closed top, tl	nin piercing are	а	_	_	-	100/PE bag
702401								

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

REF	(Scale 1:1.6)	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
702403		N 11 PE snap ring cap, soft, light blue, center hole	Silicone white / Polyimide orange (fluorine-free, for PFAS analysis)	50° 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	<b>*</b>	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

# Inserts and micro-vials for sample volumes < 1.0 mL

Samples with a lower volume than 1.0 mL have to be delivered to the autosampler in appropriate micro sample containers, in order to offer the needle ideal conditions for sample removal. During selection of the most suitable product, safety, handling and price are important factors. In order to give you an overview on the different options on micro-inserts and micro-vials, please watch our video "Micro-sampling in chromatography" under: www.mn-net.com/chromatography/vials-and-caps/inserts-information/





# 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	8 1 1

#### Crimping tools N 13

REF	Type of crimping tool	Pack of
735113	Manual crimper (standard), height adjustable, for 13 mm aluminum crimp caps	1 /box
735133	Manual crimper (standard), height adjustable, for 13 mm Flip Top/Flip Off caps	1 /box
735913	Manual decapper (standard) for 13 mm aluminum crimp caps	1 /box
735513	Electronic crimper for 13 mm aluminum crimp caps (battery-powered)	1/box
735533	Electronic crimper for 13 mm Flip Top / Flip Off caps (battery-powered)	1/box
735613	Electronic decapper for 13 mm aluminum crimp caps (battery-powered)	1/box
735700	Electronic high power crimping tool with power supply	1 /box
735713	Crimping head for 13 mm crimp caps	1 /box
735733	Crimping head for 13 mm Flip Top / Flip Off caps	1/box
735813	Decapping head for 13 mm crimp caps	1/box



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

REF	(Scale 1:1.6)	Cap description	Septum description	Hardness	Thickness	Pack of
70257		N 13 aluminum crimp cap, silver, center hole	Butyl dark gray / PTFE gray (only centrically laminated with PTFE, typically called Pharma-Fix)	50° shore A	2 mm	100/PE bag
70232		N 13 aluminum center tear off cap, gold	Butyl dark gray / PTFE gray (only centrically laminated with PTFE, typically called Pharma-Fix)	50° shore A	2 mm	100/PE bag
702802	-	N 13 aluminum crimp cap, silver, center hole (no liner)	-	-	-	100/PE bag
702803	-	N 13 aluminum center tear off cap, gold (no liner)	-	=	-	100/PE bag

### Container 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, $130 \times 130 \times 50$ 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

	40.40	E Thomas and	
	13-42	5 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 1:1.6)	Cap description	Septum description	Hardness	Thickness	Pack of
702113		N 13 PP bonded* screw cap, white, closed top	Silicone white / PTFE blue	55° shore A	1.3 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				
702925		N 13 PP screw cap, black, center hole	Silicone white / PTFE blue, cross-slit	50° shore A	1.5 mm	100/PE bag
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
* Septum f	irmly connected with the cap; c	annot be removed				

# Diverse vials and caps

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

N 8		N 9			N 13				
Small openin	g, 8-425 thre	ead	V	Vide openi	ng, short th	read		13-425 thread	
	15/212/05	5.500.5			0,5	1,5 -1,0 -0,5			
70213 70213.2	702004	702893	702282	702293	702283 silanized 702078	702284 silanized 702079	702962	70297	"3
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	32 mm		11.6 x 32 mm			14.75 x 45 mm 14.75 x 45 mm		x 45 mm	
clear, flat amber, flat bottom bottom	clear, flat bottom, label + scale	amber, flat bottom, label + scale	clear, flat bottom	amber, fla bottom	bottom, label + scale	t amber, flat bottom, label + scale	clear, flat bottor	m ambei	r, flat bottom
100/	PP box		100/PP box			100/PP box	100/F	PP box	
To be u	sed with*		To be used with*				To be used with	<b>1</b> *	
702068	702066		702032	7020	33	702034	702113	702051	702052
N 8 PP screw cap, black, closed top, Red Rubber / FEP colorless, 45° shore A, 1.3 mm	N 8 PP scr black, clos Silicone wh red, 45° sh 1.3 mm	ed top, nite/PTFE	N 9 PP screw cap blue, close top, PTFE virginal, wh 53° shore I 0.25 mm	cap b d close Red f hite, FEP d	olue, d top, Rubber/ colorless, hore A,	N 9 PP screw cap blue, closed top, Silicone white / PTFE red, 45° shore A, 1.0 mm	N 13 PP bonded screw cap, white, closed top, Silicone white/ PTFE blue, 55° shore A, 1.3 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 ba	ag	100/PE ba	ag 100/	PE bag	100/PE bag	100/PE bag	100/PE bag	100/PE bag
* Scale (1:1.6)									

#### Container for screw neck vials N 15

REF	Description	Pack of
702518	36 position container blue with removable devider for screw neck vials N 15, 130 x 130 x 80 mm, with transparent lid (suitable for freezers)	1





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

	15-42	5 thread		18-400 thread	20-40	0 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 u	sed with*		To be used with*	To be used with*	
702114		702180		702115	702116	702181
N 15 PP bonded screw cap, white, closed top, Silicone white / PTFE blue, 55° shore A, 1.3 mm  N 15 PP bonded screw cap, center hole, Silicone white / F beige, 45° shore A, 1.5 mm		ne white/PTFE	N 18 PP bonded screw cap, white, closed top, Silicone white / PTFE blue, 55° shore A, 1.3 mm	N 20 PP bonded screw cap, white, closed top, Silicone white / PTFE blue, 55° shore A, 1.3 mm	N 20 PP bonded screw cap, 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 43

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

N	l 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				
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	



# Safe handling of samples in headspace analysis

10 mL and 20 mL screw neck vials N 18 from MACHEREY-NAGEL with magnetic screw caps are designed for use on headspace autosamplers such as the CTC Combi PAL®.

They offer a more convenient, consistent and secure sealing process than crimping (better reproducibility). Due to the

thinner septum (1.5 mm instead of 3 mm), needle penetration is easier and associated with less fragmentation (especially important for SPME applications). The screw caps provide a flat surface for the magnet; thus the filled vial cannot drop down from the magnet, which can be the case with overcrimped vials due to the convexity of the cap going along with it.

The closures are offered with a variety of different septa materials, with silicone/PTFE being recommended for its excellent analytical purity, high temperature resistance and outstanding penetration properties. Closed top closure variants are also available for sample storage/transport.



# Headspace screw neck vials N 18

## Precision thread, not standardized =15,0702866 702866.2 702826 702826.2 702826.0 10 mL 10 mL 20 mL 20 mL 20 mL 22.5 x 46 mm 22.5 x 46 mm 22.5 x 75.5 mm 22.5 x 75.5 mm 22.5 x 75.5 mm clear, rounded bottom amber, rounded bottom clear, rounded bottom clear, with label, rounded amber, rounded bottom bottom 100/PP box 100/PP box 100/PP box 100/PP box 100/PP box

## Ready assembled, magnetic screw closures N 18

REF	(Scale 1:1.6)	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
702140		as above, but with closed top				
702136		N 18 magnetic screw cap, silver, center hole	Silicone white / PTFE blue, slit	45° shore A	1.5 mm	100/PE bag
702137		N 18 magnetic screw cap, silver, center hole	Butyl red / PTFE gray	50° shore A	1.5 mm	100/PE bag
702139		as above, but with closed top				
702072		N 18 magnetic screw cap, silver, center hole	Red Rubber/TEF colorless	45° shore A	1.5 mm	100/PE bag
702110		- (septa only)	Silicone white / PTFE blue	45° shore A	1.5 mm	100/PE bag
702981		- (septa only)	Silicone blue transparent / PTFE white	45° shore A	1.5 mm	100/PE bag
702138		- (septa only)	Butyl red / PTFE gray	50° shore A	1.5 mm	100/PE bag

# 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



1000	Mills - Mayor, Types	The Property of the Park				100
70206.36 70217.36	702086	70254	702540	702261	702263 702263.2	702263.0
		PerkinElmer®	PerkinElmer®	DANI, Agilent®	CTC, Varian®	CTC, Varian®
20 mL	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	22.5 x 75.5 mm
clear/amber	clear, 15 mL graduation	clear	clear, with label	clear	clear/amber	clear, with label
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	rounded bottom, flat DIN crimp neck
100/PP box	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	70209.1
25 mL	50 mL	100 mL
30 x 65 mm	31 x 101 mm	51.6 x 94.5 mm
clear	clear	clear, 3 <sup>rd</sup> hydrolytic class
flat bottom	flat bottom	flat bottom
flat DIN crimp neck	flat DIN crimp neck	flat DIN crimp neck
100/PP box	100/PP box	88/shrink-wrapped tray

# Crimping tools N 20

REF	Type of crimping tool	Pack of
735120	Manual crimper (standard), height adjustable, for 20 mm aluminum crimp caps	1/box
735132	Manual crimper (standard), height adjustable, for 20 mm Flip Top/Flip Off caps	1 /box
735920	Manual decapper (standard) for 20 mm aluminum crimp caps	1 /box
735220	Ergonomic crimper for 20 mm aluminum crimp caps	1/box
735320	Ergonomic decapper for 20 mm aluminum crimp caps	1/box
735520	Electronic crimper for 20 mm aluminum crimp caps (battery-powered)	1 /box
735532	Electronic crimper for 20 mm Flip Top/Flip Off caps (battery-powered)	1 /box
735620	Electronic decapper for 20 mm aluminum crimp caps (battery-powered)	1/box
735700	Electronic high power crimping tool with power supply	1/box
735720	Crimping head for 20 mm crimp caps (aluminum, magnetic, bi-metal)	1/box
735732	Crimping head for 20 mm Flip Top/Flip Off caps	1/box
735820	Decapping head for 20 mm crimp caps (aluminum, magnetic, bi-metal)	1/box

# Crimp neck vials and caps N 20

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

REF	(Scale 1:2)	Cap description	Septum description	Hardness	Thickness	Pack of
	Center hole	caps				
702773		N 20 aluminum crimp cap, silver, center hole	Butyl red / PTFE gray	50° shore A	3 mm	100/PE bag
702775		N 20 aluminum crimp cap, silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100/PE bag
70234.9		N 20 aluminum crimp cap, silver, center hole	Molded septum Butyl/PTFE gray	50° shore A	3 mm	100/PE bag
70234		N 20 aluminum crimp cap, silver, center hole	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100/PE bag
70234.10		N 20 aluminum crimp cap, silver, center hole	Butyl dark gray / PTFE gray* (high purity)	50° shore A	3 mm	100/PE bag
70237.2		N 20 aluminum crimp cap, silver, center hole	Bromobutyl stopper, gray, unssembled (separate parts)	50° shore A		100 each/ PE bags
702093		N 20 aluminum crimp cap, silver, center hole	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100/PE bag
702340		N 20 aluminum crimp cap, silver, center hole	Silicone blue transparent / centrical PTFE lamination colorless*	45° shore A	3 mm	100/PE bag
702094		N 20 aluminum crimp cap, silver, center hole	Silicone white / PTFE beige	40° shore A	3 mm	100/PE bag
702145		N 20 aluminum crimp cap, silver, center hole	Silicone white / FEP-/Aluminum foil silver	45° shore A	3 mm	100/PE bag
702804		N 20 aluminum crimp cap, silver, center hole (no liner)	-	=	=	100/PE bag
702112		N 20 aluminum crimp cap, gold, center hole (no liner)	-	-	-	100/PE bag
	Pressure rel	lease caps				
702829		N 20 aluminum pressure release cap, silver, center hole	Butyl light gray/PTFE dark gray	50° shore A	3 mm	100/PE bag
70234.8		N 20 aluminum pressure release cap, silver, center hole	Molded septum Butyl/PTFE gray	50° shore A	3 mm	100/PE bag
702071		N 20 aluminum pressure release cap, silver, center hole	Butyl dark gray / PTFE gray* (high purity)	50° shore A	3 mm	100/PE bag
702927		N 20 aluminum pressure release cap, silver, center hole	Silicone blue transparent/PTFE colorless	45° shore A	3 mm	100/PE bag
702835		N 20 aluminum pressure release cap, silver, center hole	Silicone white / PTFE beige	45° shore A	3 mm	100/PE bag
702799		N 20 aluminum pressure release cap, silver, center hole (no liner)	-	-	=	100/PE bag
* only centric	ally laminated w	vith PTFE, typically called Pharma-Fix				

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

REF	(Scale 1:2)	Cap description	Septum description	Hardness	Thickness	Pack of
	Bi-metal cri	imp caps				
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
702341		N 20 bi-metal crimp cap, blue/silver, center hole	Silicone blue transparent / centrical PTFE lamination colorless*	45° 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
	Magnetic c	rimp caps				
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
	Center tear	off caps				
70233		N 20 aluminum center tear off cap, gold	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100/PE bag
70236.1		N 20 aluminum center tear off cap, silver (no liner)	-	-	-	100/PE bag
	Complete to	ear off caps				
70235		N 20 aluminum complete tear off cap, silver	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100/PE bag
702839		N 20 aluminum complete tear off cap, silver	Silicone white / PTFE beige	40° shore A	3 mm	100/PE bag
702805		N 20 aluminum complete tear off cap, silver (no liner)	-	-	-	100/PE bag
	Single sept	a				
70277		- (septa only)	Butyl red / PTFE gray	50° shore A	3 mm	100/PE bag
702057		- (septa only)	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100/PE bag
702101		- (septa only)	Molded septum Butyl/PTFE gray	50° shore A	3 mm	100/PE bag
702D20TB		- (septa only)	Butyl dark gray / PTFE gray*	50° shore A	3 mm	100/PE bag
702780		- (septa only)	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100/PE bag
70278		- (septa only)	Silicone white / PTFE beige	40° shore A	3 mm	100/PE bag
* only centrica	ally laminated v	vith PTFE, typically called Pharma-Fix				



# Crimp neck vials and caps N 20

# Stoppers N 20

REF	(Scale 1:2)	Cap description	Description	Hardness	Thickness	Pack of
702931.3		- (stopper only)	N 20 stopper, Bromobutyl gray	50° 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	(Scale 1:2)	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 mr	m → 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		- (septa only)	Butyl beige / PTFE gray	55° shore A	1.3 mm	100/PE bag		
702904		- (septa only)	Natural rubber red-orange/TEF colorless	45° shore A	1.3 mm	100/PE bag		
702144		- (septa only)	Silicone blue transparent / PTFE white	45° shore A	1.3 mm	100/PE bag		

## Container 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



# Vial rack for screw neck vials N 18 and crimp neck vials N 20

REF	Description	Pack of
702503	36 position polypropylene vial rack blue, coded, for vials with a diameter of 23.1 mm max.  Dimensions: 323 x 91 x 30 mm, stackable	5/carton



Screw neck vials N 24 (EPA)

#### For TOC/VOC analysis and sample storage, 24-414 thread









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

# Container 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



# Screw neck vials and caps N 24

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

REF	(Scale 1:1.6)	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
02168		N 24 PP bonded screw cap, white, center hole, with removable protection lid	Silicone natural/ PTFE colorless	45° shore A	3.2 mm	100/PE bag
'02130		N 24 PP screw cap, white, center hole	Butyl red / PTFE gray	50° shore A	2.4 mm	100/PE bag
02102		N 24 PP screw cap, white, closed top	Butyl red / PTFE gray	50° shore A	2.4 mm	100/PE bag
02171		N 24 PP screw cap, white, center hole	Silicone white / PTFE beige	45° shore A	3.2 mm	100/PE bag
02060		N 24 PP screw cap, white, center hole	no liner	-	-	100/PE bag
02061		N 24 PP screw cap, white, closed top	no liner	-	-	100/PE bag
02062		- (septa only)	Silicone natural / PTFE colorless	45° shore A	3.2 mm	100/PE bag
02791		- (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 <b>702021</b> : 20 mL screw neck vial N 24, 27.5 x 57 mm, clear, flat bottom	pre-screwed with <b>702073</b> : N 24 PP screw cap (bonded), white, center hole, Red Rubber / TEF colorless, 45° shore A, 2.5 mm	100	702865
Pre-sealed vials <b>702021</b> : 20 mL screw neck vial N 24, 27.5 x 57 mm, clear, flat bottom	pre-screwed with <b>702058</b> :  N 24 PP screw cap (bonded), white, center hole, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702894
Pre-sealed vials <b>702021</b> : 20 mL screw neck vial N 24, 27.5 x 57 mm, clear, flat bottom	pre-screwed with <b>702059</b> : N 24 PP screw cap (bonded), white, closed top, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702884
Pre-sealed vials <b>702132</b> : 30 mL screw neck vial N 24, 27.5 x 72.5 mm, clear, flat bottom	pre-screwed with <b>702058</b> :  N 24 PP screw cap (bonded), white, center hole, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702831
Pre-sealed vials <b>702023</b> : 40 mL screw neck vial N 24, 27.5 x 95 mm, clear, flat bottom	pre-screwed with <b>702058</b> :  N 24 PP screw cap (bonded), white, center hole, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702877
Pre-sealed vials <b>702023</b> : 40 mL screw neck vial N 24, 27.5 x 95 mm, clear, flat bottom	pre-screwed with <b>702168</b> :  N 24 PP screw cap (bonded), white, 15 mm center hole, with removable protection lid,  Silicone natural / PTFE colorless, 45° shore A, 3.2 mm	100	702872
Pre-sealed vials <b>702131</b> : 60 mL screw neck vial N 24, 27.5 x 140 mm, amber, flat bottom	pre-screwed with <b>702058</b> :  N 24 PP screw cap (bonded), white, center hole, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702886





# Universally usable screw closure for storage and analysis

Explore our video on this unique and innovative closure (MN REF 702168) with removable protection lid for the underlying center hole that allows injection and analysis after storage

without the need to change the cap. The lid keeps the injection area clean from dust or any other contamination. The sealing septa consist of high purity Silicone/PTFE being bonded to the cap ensuring safe penetration with a needle.

Watch the video under https://youtu.be/vvHnb-k80JI







## GC injection port septa

Premium HT-quality - Blister packs for cleanliness and easy handling









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
	80	8	83	
OD	beige silicone, 60° shore A, 4 mm	red, non-bleeding silicone, 60° shore A, 3 mm (320 °C max.)	soft, transparent 3 mm (250 °C max.)	white silicone, PTFE 3 mm (200 °C max.)
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



## 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 Required force

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

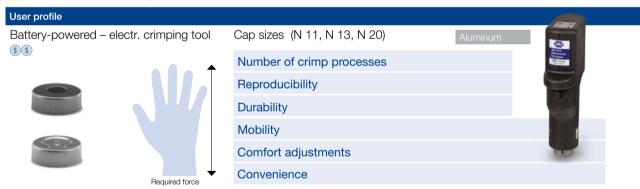


## Manual crimping tools - Ergonomic



REF	Description	Pack of
Crimpers		
735208	Manual crimper (ergonomic), adjustable, for 8 mm crimp caps	1/box
735211	Manual crimper (ergonomic), adjustable, for 11 mm crimp caps	1/box
735220	Manual crimper (ergonomic), adjustable, for 20 mm crimp caps	1/box
Decappers		
735311	Manual decapper (ergonomic), for 11 mm crimp caps	1/box
735320	Manual decapper (ergonomic), for 20 mm crimp caps	1/box
Accessories	for ergonomic crimping tools	
735509	Rack for two ergonomic crimping tools, blue, 240 x 95 x 65 mm	1

## Electronic crimping tools - Battery-powered



DEE	Description	Dealers
REF	Description	Pack of
Crimpers		
735511	Electronic crimper (battery-powered), for 11 mm aluminum crimp caps	1/box
735513	Electronic crimper (battery-powered), for 13 mm aluminum crimp caps	1/box
735533	Electronic crimper (battery-powered), for 13 mm Flip Top/Flip Off caps	1/box
735520	Electronic crimper (battery-powered), for 20 mm aluminum crimp caps	1/box
735532	Electronic crimper (battery-powered), for 20 mm Flip Top/Flip Off caps	1/box
Decappers		
735611	Electronic decapper (battery-powered), for 11 mm aluminum crimp caps	1/box
735613	Electronic decapper (battery-powered), for 13 mm aluminum crimp caps	1/box
735620	Electronic decapper (battery-powered), for 20 mm aluminum crimp caps	1/box
Accessorie	es for battery-powered, electronic crimping tools	
735500	Battery 6.6 Volt, 8.6 Wh	1/box
735509	Rack for two electronic crimping tools, blue, 240 x 95 x 65 mm	1

## Electronic crimping tools – High Power crimping tool



REF	Description	Pack of
Basic high po	wer crimping tool	
735700	Electronic high power crimping tool with fixed power supply	1/box
Crimping hea	ds	
735708	Crimping head for 735700 for 8 mm crimp caps	1/box
735711	Crimping head for 735700 for 11 mm crimp caps	1/box
735713	Crimping head for 735700 for 13 mm crimp caps	1/box
735733	Crimping head for 735700 for 13 mm Flip Top/Flip Off caps	1/box
735720	Crimping head for 735700 for 20 mm crimp caps	1/box
735732	Crimping head for 735700 for 20 mm Flip Top/Flip Off caps	1/box
Decapping he	eads	
735811	Decapping head for 735700 for 11 mm crimp caps	1/box
735813	Decapping head for 735700 for 13 mm crimp caps	1/box
735820	Decapping head for 735700 for 20 mm crimp caps	1/box
Accessories f	or high power crimping tool	
735501	Stand for electronic crimping tools	1/box
735509	Rack for two electronic HP crimping tools, blue, 240 x 95 x 65 mm	1

## Accessories for crimping tools

735500Battery 6.6 Volt, 8.6 Wh1735501Stand for electronic crimping tools1735509Rack for two crimping tools either type ergonomic (manual) or electronic, blue, 240 x 95 x 65 mm1	Description	Pack of
735509 Rack for two crimping tools either type ergonomic (manual) or electronic, blue, 1	Battery 6.6 Volt, 8.6 Wh	1
, , , , , , , , , , , , , , , , , , , ,	Stand for electronic crimping tools	1
		1
		Stand for electronic crimping tools  Rack for two crimping tools either type ergonomic (manual) or electronic, blue,



# Vial containers

REF	Description	Pack of
702514	81 position container blue, with firmly integrated devider, for all vials $11.6 \times 32$ mm, $130 \times 130 \times 45$ mm, coded, with transparent lid (suitable for freezers)	1
702515	49 position container blue, with firmly integrated devider, for all vials N 13 with flat bottom, $130 \times 130 \times 50$ mm, with transparent lid (suitable for freezers)	1
702516	25 position container blue, with removable devider, 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
702518	36 position container blue, with removable devider, for screw neck vials N 15 (sample storage: 702096, 702311, 70285, 702097) 130 x 130 x 80 mm, with transparent lid (suitable for freezers)	1
702517	16 position container blue, with removable devider, 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 all vials with a diameter of 15 mm max. and flat bottom Dimensions: 240 x 120 x 28 mm, stackable	1
702503	36 position polypropylene vial rack blue, for all vials with a diameter of 23.1 mm max. and flat bottom Dimensions: 323 x 91 x 30 mm, stackable	5/carton



REF	Product	Page
702D20TB	septum N 20	41
702001	crimp closure N 11	28
702004	screw neck vial N 8	19
	screw neck vial N 8	34
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
702007.0	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
702019	snap cap vial N 22	36
70202.1	shell vial N 8	18
702020	crimp neck vial N 20	38
702021	screw neck vial N 24	43
702022	screw neck vial N 24	43
702023	screw neck vial N 24	43
702024	screw neck vial N 24	43
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	32
702030	screw closure N 9	22
702031	screw closure N 9	22
702032	screw closure N 9	22
	screw closure N 9	34
702033	screw closure N 9	22
. 02000	screw closure N 9	34
702034	screw closure N 9	22
	screw closure N 9	34
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	38
702040	screw closure N 9 22	
702041	septum N 9	23
702041	septum N 9	23
702043		23
. 525 10		
702044	bonded screw closure N 10	OE.

REF	Product	Page
702047	bonded screw closure N 10	25
702048	screw closure N 10	25
702049		25 25
702043	screw cap N 10	
70205.30	crimp neck vial N 20 screw closure N 13	38 33
702050		
702031	screw closure N 13	33
702052	screw closure N 13	34
702032	screw closure N 13	33
702052	screw closure N 13	34
702053 702055	septum N 12	33
	magnetic screw closure N 18	37
702057 702058	septum N 20	41
702059	bonded screw closure N 24	44
	bonded screw closure N 24	44
70206.36 702060	crimp neck vial N 20	38
702060	screw cap N 24	44
	screw cap N 24	44
702062	septum N 22	44
702063	snap ring closure N 11	31
702063.2080	snap ring closure N 11	31
702064	snap ring closure N 11	31
702066	screw closure N 8	20
700007	screw closure N 8	34
702067	screw closure N 8	20
702068	screw closure N 8	20
700000	screw closure N 8	34
702069	screw closure N 8	20
702070	septum N 8	20
702071	crimp closure N 20	40
702072	magnetic screw closure N 18	37
702073	bonded screw closure N 24	44
702074	screw neck vial N 24	43
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
700070	insert for vials N 11, wide opening	26, 30
702078	screw neck vial N 9	21
700070	screw neck vial N 9	34
702079	screw neck vial N 9	21
70000.00	screw neck vial N 9	34
70208.36	crimp neck vial N 20	39
702080	screw closure N 9	22 22
702081		
702082	screw closure N 9	
702083	screw closure N 9	
702084	screw closure N 9	
702085	screw closure N 9	
702086	crimp neck vial N 20	
702088	screw neck vial N 9 2	
70209.1	crimp neck vial N 20 39	
702093	crimp closure N 20 4	
702094	crimp closure N 20	40
702095	snap ring closure N 11	31

REF Product	
screw neck vial N 15	35
screw neck vial N 15	35
screw neck vial N 18	35
screw neck vial N 20	35
	39
	41
	29
	44
	22
	31
	22
	37
	40
	33
	34
bonded screw closure N 15	35
bonded screw closure N 18	35
bonded screw closure N 20	35
PE cap N 20	42
	42
screw neck vial N 8	19
	34
	19
	34
	44
	43
	43
	43
	27
	30
	21
	37
	37
	37
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	26
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	27
	31
	31
	42
	40
	22
	23
	31
	31
	38
	23
	23
	22
screw closure N 9 22	
crimp nock vial NL20	20
crimp neck vial N 20 screw cap N 9	38 22
	screw neck vial N 15 screw neck vial N 15 screw neck vial N 18 screw neck vial N 20 crimp neck vial N 20 septum N 20 pre-sealed vial-closure combination N 11 screw closure N 24 screw closure N 9 snap ring closure N 11 screw closure N 9 septum N 18 crimp cap N 20 bonded screw closure N 13 bonded screw closure N 13 bonded screw closure N 15 bonded screw closure N 18 conded screw closure N 18 screw neck vial N 8 screw neck vial N 11 screw neck vial N 24 screw neck vial N 24 screw neck vial N 11 snap ring vial N 11 snap ring vial N 11 snap ring closure N 18 crimp neck vial N 11 snap ring closure N 18 crimp neck vial N 11 snap ring closure N 18 crimp neck vial N 11 snap ring closure N 10 screw closure N 20 screw closure N 20 screw closure N 20 screw closure N 19 septum N 19 crimp neck vial N 10 snap ring closure N 11 snap ring closure N 10 screw closure N 9 septum N 9 septum N 9 snap ring closure N 10 screw closure N 9 magnetic screw closure N 9 magnetic screw closure N 9 magnetic screw closure N 9 screw closure N 9 screw closure N 9

REF	Product	Page
702162	screw cap N 9	22
702163	screw cap N 9	22
702164	screw cap N 9	22
702165	screw cap N 9 22	
702168	bonded screw closure N 24	44
70217.36	crimp neck vial N 20	38
702170	vial-insert combination N 11	30
702171	screw closure N 24	44
702172	screw neck vial N 9	21
702173	snap ring vial N 11	30
702174	snap ring vial N 11	30
702175	crimp closure N 11	28
702176	vial-insert combination N 11	30
702177	vial-insert combination N 9	21
702178	vial-insert combination N 9	21
702179	vial-insert combination N 9	21
702180	bonded screw closure N 15	35
702181	bonded screw closure N 20	35
702261	crimp neck vial N 20	38
702263	crimp neck vial N 20	38
702263.0	crimp neck vial N 20	38
702263.2	crimp neck vial N 20	38
702282	screw neck vial N 9	21
	screw neck vial N 9	34
702283	screw neck vial N 9	21
	screw neck vial N 9	34
702284	screw neck vial N 9	21
	screw neck vial N 9	34
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	33
702293	screw neck vial N 9	21
	screw neck vial N 9	34
702295	snap ring closure N 11	31
70231	crimp closure N 11	28
70231.1	crimp closure N 11	28
70231.2	crimp closure N 11	28
702311	screw neck vial N 15	35
70232	crimp closure N 13	32
70233	crimp closure N 20	41
702334	crimp neck vial N 11	27
	snap ring vial N 11	30
702335	screw neck vial N 9	21
70234	crimp closure N 20	40
70234.8	crimp closure N 20	40
70234.9	crimp closure N 20	40
70234.10	crimp closure N 20 (high purity)	40
702340	crimp closure N 20	40
702341	crimp closure N 20	41
70235	crimp closure N 20	41
70236.1	crimp cap N 20	41

REF Product		Page	
70237.2	crimp closure N 20	40	
70239	crimp closure N 11	28	
70240	PE cap N 20	42	
702401	PE cap N 11	29	
PE cap N 11		31	
702402	screw closure N 9	22	
702403	snap ring closure N 11	31	
702405	screw closure N 9	22	
702406	screw closure N 9	22	
70242	■ PE cap N 20	42	
702437	screw closure N 8	20	
70245	screw closure N 8	20	
70246	crimp closure N 11	28	
70246.1	crimp closure N 11	28	
70246.2	crimp closure N 11	28	
70246.3	crimp closure N 11	28	
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	
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	50	
702503 vial rack for vials N 18, N 20		42	
	vial rack for vials N 18, N 20	50	
702504			
. 0200 .	vial rack for vials N 13	32 50	
702514	container for vials N 8	19	
. 020	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	50	
702515	container for vials N 13	32	
702010	container for vials N 13	50	
702516	container for vials N 18, N 20	42	
702010	container for vials N 18, N 20	50	
702517	container for vials N 24	43	
. 02011			
702518	container for vials N 24	50 34	
, 02010	container for vials N 15		
70254	crimp neck vial N 20	50 38	
702540	crimp neck vial N 20		
702540	crimp neck viai N 20 crimp closure N 11	38 28	
70257			
70260	crimp closure N 13	32	
	septum N 12	33	
702602	GC injection port septum	46	
702604	GC injection port septum	46	
702605	GC injection port septum	46	
702606	GC injection port septum	46	
702609	GC injection port septum	46	
70261	septum N 8	20	

REF	Product	Page
702610		46
702610	GC injection port septum	46
702612	GC injection port septum	46
702613	GC injection port septum  GC injection port septum	46
702619	GC injection port septum	46
702619		46
702621	GC injection port septum	46
702622	GC injection port septum	46
702623	GC injection port septum  GC injection port septum	46
702625	GC injection port septum	46
702626	GC injection port septum	46
702627	GC injection port septum	46
702628	GC injection port septum	46
702632	GC injection port septum	46
702646	GC injection port septum	46
702647	GC injection port septum	46
702648	GC injection port septum	46
702649	GC injection port septum	46
702656	GC injection port septum	46
702657	GC injection port septum	46
702658	GC injection port septum	46
702659		46
702659	GC injection port septum	
702660	PE cap N 20	42 46
702661	GC injection port septum	
702662	GC injection port septum	46
702663	GC injection port septum	46 46
70267	GC injection port septum  PE cap N 20	42
70269		42
702708	septum N 19 snap ring vial N 11	30
702709	snap ring vial N 11	30
70271	snap cap vial N 18	36
702710	snap ring closure N 11	31
702710.1	snap ring closure N 11	31
702710.2080	snap ring closure N 11	31
702712	snap ring closure N 11	30
702713	snap ring vial N 11	30
702714	snap ring vial N 11	30
702716	insert for vials N 9	21
	insert for vials N 10	25
1	insert for vials N 11, wide opening	26, 30
702717.2	snap ring closure N 11	31
702717.2080	snap ring closure N 11	31
702718	snap ring closure N 11	31
702718.1	snap ring closure N 11	31
702718.2080	snap ring closure N 11	31
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	31
702732	screw closure N 9	22
. 32102	SOLEM CIOSULE IN A	

REF	Product	Page	
702736	crimp closure N 11	28	
70274	PE snap cap N 18		
70275	PE snap cap N 22	36	
70277	septum N 20 41		
702773	crimp closure N 20 40		
702775	crimp closure N 20 40		
70278	septum N 20	41	
702780	septum N 20 41		
702791	septum N 22	44	
702799	crimp cap N 20	40	
702800	crimp cap N 8	18	
702801	crimp cap N 11	29	
702802	crimp cap N 13	32	
702803		32	
702804	crimp cap N 30		
702805	crimp cap N 20	40	
702805	crimp cap N 20	41	
	PE plug N 8	18	
702808	crimp cap N 20	41	
702809	snap ring vial N 11	30	
702813	insert for vials N 9	21	
-	insert for vials N 10	25	
	insert for vials N 11, wide opening	26, 30	
702818	insert for vials N 9	21	
-	insert for vials N 10	25	
	insert for vials N 11, wide opening	26, 30	
702818.1	insert for vials N 9	21	
=	insert for vials N 10	25	
	insert for vials N 11, wide opening	26, 30	
702819	insert for vials N 9	21	
_	insert for vials N 10	25	
	insert for vials N 11, wide opening	26, 30	
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 9	21	
_	insert for vials N 10	25	
	insert for vials N 11, wide opening	26, 30	
702826	Headspace screw neck vial N 18	37	
702826.0	Headspace screw neck vial N 18	37	
702826.2	Headspace screw neck vial N 18	37	
702827	magnetic screw closure N 18	37	
702829	crimp closure N 20	40	
702831	pre-sealed vial-closure combination N 24	45	
702833	crimp cap N 20	41	
702834	crimp closure N 20 41		
702835	crimp closure N 20	40	
702837	crimp closure N 20	41	
702838	crimp closure N 20	41	
702839	crimp closure N 20	41	
70284	crimp closure N 11	28	
70285	screw neck vial N 15 35		
702857	pre-sealed vial-closure combination N 9		
702858	pre-sealed vial-closure combination N 9	24	

REF	Product	Page
702859	pre-sealed vial-closure combination N 11	29
70286	crimp neck vial N 8	18
702860	screw 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	45
702866	Headspace screw neck vial N 18	37
702866.2	Headspace screw neck vial N 18	37
702867	pre-sealed vial-closure combination N 11	29
702872	pre-sealed vial-closure combination N 24	45
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	45
702878	crimp closure N 8	18
702879	crimp closure N 11	28
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
702882	pre-sealed vial-closure combination N 11	29
702884	pre-sealed vial-closure combination N 24	45
702885	crimp neck vial N 11	26
702886	pre-sealed vial-closure combination N 24	45
702887	pre-sealed vial-closure combination N 11	29
702888	crimp neck vial N 11	27
70289	crimp closure N 8	18
702891	crimp neck vial N 11	27
702891.0	crimp neck vial N 11	27
702892	crimp neck vial N 11	26
702893	screw neck vial N 8	
	screw neck vial N 8	34
702894	pre-sealed vial-closure combination N 24	45
702895	pre-sealed vial-closure combination N 11	29
702904	septum N 19	42
702917	crimp neck vial N 20	38
702918	crimp neck vial N 20	38
702924	crimp neck vial N 20	38
702925	screw closure N 13	33
702926	screw closure N 13	33
702927	crimp closure N 20	40
702928	crimp closure N 20	41
702928.9	crimp closure N 20	41
702929	crimp closure N 20	41
702931.1	stopper N 20	42
702931.3	stopper N 20	42
702962	screw neck vial N 13	33
	screw neck vial N 13	34
702963	screw cap N 13	33
702966	screw cap N 13	33
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	33

REF	Product	Page
702973	screw neck vial N 13	
	screw neck vial N 13	34
702974	metal spring for insert 702972	33
702981	septum N 18 37	
702995	crimp closure N 11	28
702995.1	crimp closure N 11	28
702995.2	crimp closure N 11	28
702995.3	crimp closure N 11	28
707971	linear capillary connector	46
707972	linear capillary connector	46
707973	capillary Y connector	46
735111	standard manual crimper N 11	27
	standard manual crimper N 11	47
735113	standard manual crimper N 13	32
	standard manual crimper N 13	47
735120	standard manual crimper N 20	39
	standard manual crimper N 20	47
735126	standard manual crimper N 8	18
	standard manual crimper N 8	47
735132	standard manual crimper N 20	39
	standard manual crimper N 20	47
735133	standard manual crimper N 13	32
	standard manual crimper N 13	47
735208	ergonomic manual crimper N 8	18
	ergonomic manual crimper N 8	48
735211	ergonomic manual crimper N 11	27
	ergonomic manual crimper N 11	48
735220	ergonomic manual crimper N 20	39
	ergonomic manual crimper N 20	48
735311	ergonomic manual decapper N 11	27
	ergonomic manual decapper N 11	48
735320	ergonomic manual decapper N 20	39
	ergonomic manual decapper N 20	48
735408	standard manual decapper N 8	18
	standard manual decapper N 8	47
735500	battery for electronic crimping tools	48, 49
735501	stand for electronic crimping tools	49
735509	rack for crimping tools	48, 49
735511	electronic crimper N 11	27
	electronic crimper N 11	48
735513	electronic crimper N 13	32
	electronic crimper N 13	48
735520	electronic crimper N 20	39
	electronic crimper N 20	48
735532	electronic crimper N 20	39
· <del>-</del>	electronic crimper N 20	48
735533	electronic crimper N 13	32
<del>-</del>	electronic crimper N 13	48
735611	electronic decapper N 11	27
	electronic decapper N 11	48
735613	electronic decapper N 13	32
electronic decapper N 13		48
735620 electronic decapper N 20		39
. 55525	electronic decapper N 20	48
		70

REF	Product	Page
735700	high power crimping tool (HP)	27
	high power crimping tool (HP)	32
	high power crimping tool (HP)	39
	high power crimping tool (HP)	49
735708	crimping head N 8 for HP crimping tool	49
735711	crimping head N 11 for HP crimping tool	27
	crimping head N 11 for HP crimping tool	49
735713	crimping head N 13 for HP crimping tool	32
	crimping head N 13 for HP crimping tool	49
735720	crimping head N 20 for HP crimping tool	39
	crimping head N 20 for HP crimping tool	49
735732	crimping head N 20 for HP crimping tool	39
	crimping head N 20 for HP crimping tool	49
735733	crimping head N 13 for HP crimping tool	32
	crimping head N 13 for HP crimping tool	49
735811	decapping head N 11 for HP crimping tool	27
	decapping head N 11 for HP crimping tool	49
735813	decapping head N 13 for HP crimping tool	32
	decapping head N 13 for HP crimping tool	49
735820	decapping head N 20 for HP crimping tool	39
	decapping head N 20 for HP crimping tool	49
735911	standard manual decapper N 11	27
	standard manual decapper N 11	47
735913	standard manual decapper N 13	32
	standard manual decapper N 13	47
735920	standard manual decapper N 20	39
	standard manual decapper N 20	47

## Practical tips for crimping

## Tips for correct crimping

For optimal crimp 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 septa 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.).







Convex septum surface

Concave septum surface

Can deformation

- 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 aluminum 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.



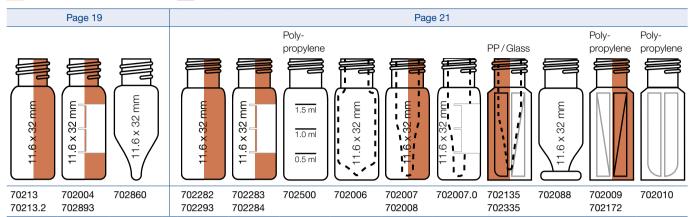
- Decappers do not need any adjustment.
- To check the crimp result, look for the flatness of the septum and make sure that there are no cap deformations, in order to exclude any signs of over-crimping. To check whether the crimping is too loose, try to turn the cap with 2-3 fingers only. For turning, do not use the whole hand or a large amount of power, because this may lead to an impression of undercrimping 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:

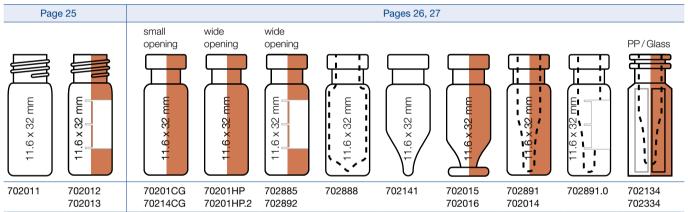
- Manual crimpers and decappers (standard) for crimp caps N 8, N 11, N 13 and N 20 as well as for Flip Top/Flip Off caps N 13 and N 20
- Manual crimpers and decappers (ergonomic) for crimp caps N 8 (only crimpers), N 11 and N 20
- Electronic crimpers and decappers (battery-powered) for crimp caps N 11,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

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 47.

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

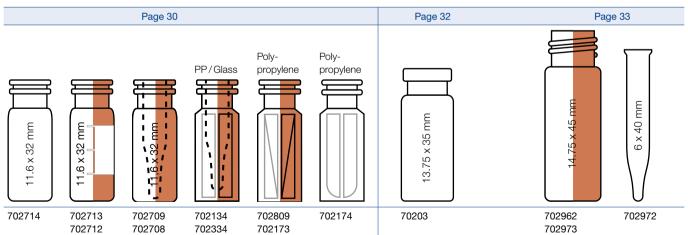


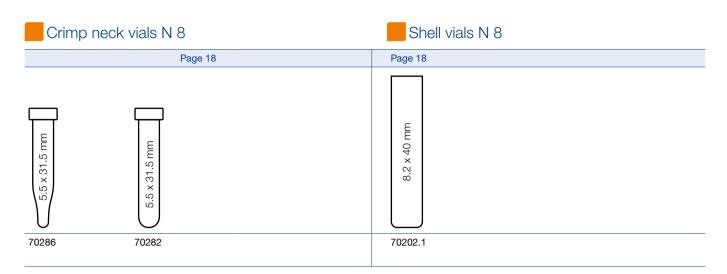
#### Vials N 10 Crimp neck vials N 11



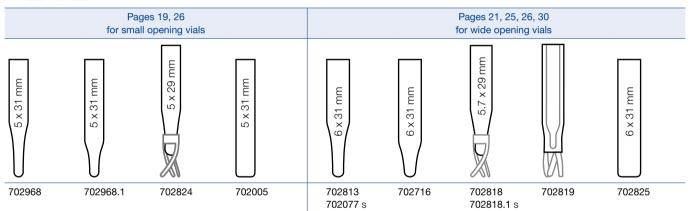
# Snap ring vials N 11

## Crimp and screw neck vials N 13





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



# Snap cap vials N 18 and N 22 Screw neck vials N 18 Page 37 Page 36 22.5 x 75.5 mm 26 x 65 mm 22 x 50 mm 20 × 40 mm

70273

702866

702866.2

702826

702826.2

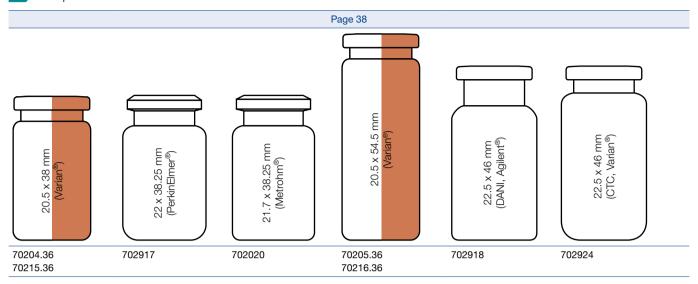
702826.0

70272

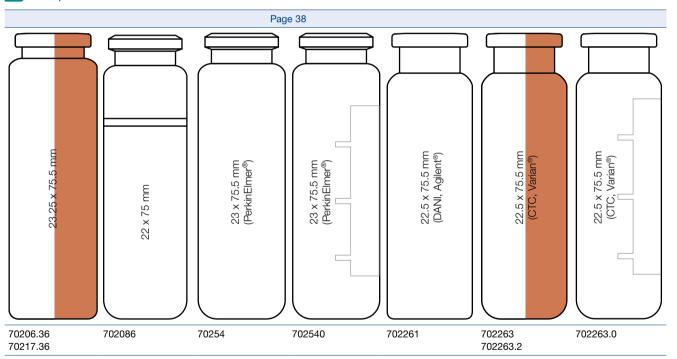
702019

70271

# Crimp neck vials N 20: 5-10 mL



## Crimp neck vials N 20: 20 mL



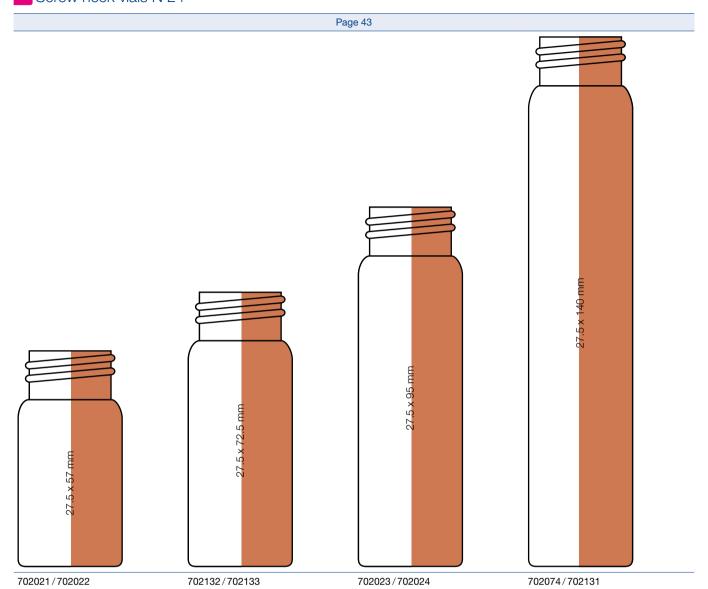
# Crimp neck vials N 20: 25 mL, 50 mL, 100 mL



# Screw neck vials for storage of liquid samples

Page 35				
	N 15	N 18	N 20	
16.6 × 61 mm	18,5 x 66 mm	20.6 x 71 mm	22.7 x 86 mm	
702096/702311	70285 / 702097	702098	702099	

# Screw neck vials N 24



## Translation of cross-references by the VialFinder under www.mn-net.com/vialFinder

The VialFinder is a database-driven translation tool for crossreferences 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 MN REF 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 support@mn-net.com providing us with all product information you may have. We will then 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 1st 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, who either use the calculated volume (e.g., 2 mL instead of 1.5 mL) or a defined, realistically usable volume in the upper range (e.g., 1.8 mL instead of 1.5 mL).

## 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.



# 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

## General remarks

#### Website

The new website offers you support in many ways when searching for the optimal product for your application. Use the digital tools described below of our website in your daily laboratory work!

#### 1. Search by product features:

Open the filter bar and select required individual product features from the drop-down menus. Applicable results are displayed to you in tile view.

#### 2. Translation of cross-references:

Follow the link www.mn-net.com/vialfinder.

With the VialFinder part numbers of more than 50 consumables suppliers can be translated.

#### 3. Product information:

Every product on the website has an extensive product detail page with technical data, some even with an additional "Learn more" tab with valuable background information. There is also a download area with relevant product literature.

#### 4. Additional recommendations:

A selection of products with similar product characteristics, such as closures with the same septum, however, with different cap colors, is displayed on the product detail pages under the "Related Products" tab.

In contrast to that, the "Accessories" tab shows products that can be used in conjunction with the product you are looking for, such as vials that can be used in combination with a closure.

#### 5. MN Information center at www.mn-net.com/chroma-news/

Stay up to date on product launches and interesting topics related to chromatography. Please kindly do so by studying the Chroma News, which provide exciting information. Tags make it easier to choose a topic.

#### 6. Supporting videos under

www.mn-net.com/e-training-chromatography

In the e-training section you will find videos that demonstrate practical and theoretical content in an illustrative way. For example, the principle of sample preparation using the so-called SPE is explained there or you can actively follow how to use electronic crimping tools.

#### 7. Featured analytical topics:

Under "Chromatography Service" you will find in the subsection "Featured topics" specific analytical applications, that are reported on in detail. There you also have access to our application database.

8. Conveniently download needed CoCs/CoAs from our website for your own ISO documentation under:

www.mn-net.com/certificate

And finally: purchase our products fast and conveniently in our webshop - your exclusive shopping center.



Learn more about optimal usage of our vials and caps section on our website by watching our video under: www.mn-net.com/chromatography/vials-and-caps-information/

#### 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 septa 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 working with photocells may not be able to recognize transparent caps.
- Robotic sample preparation lines as well as some autosamplers are constructed that way that they lift and transport vials with a magnet the size of the vial's cap. In these cases aluminum crimp or plastic screw caps cannot be used, as these materials won't react to a magnet. Only metals like steel or tin will do so. Please check in the catalog for magnetic screw closures N 9, magnetic crimp closures N 11, magnetic screw closures N 18 and magnetic or bi-metal crimp closures N 20.

- 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 "o 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.
- Almost all liners are covered with PTFE as the chemically resistant barrier. However, when you are doing PFAS analysis, it is crucial to select the right vials and closures for this application. Adsorption effects of glass as well as possible contaminations of the sample by particles from the septa, especially from the PTFE lamination, may put your analysis results at risk. MACHEREY-NAGEL offers polypropylene screw neck vials N 9 and snap ring vials N 11 as well as appropiate closures with a silicone septum laminated either with polyimide or polypropylene. In contrast to PTFE covered liners, these are fluorine-free.



## General remarks

## Septa quide

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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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 DEVELOP-MENT 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 MACHEREY-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

## HPI C



- 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

#### TI C



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

#### GC



Highly inert and low-bleed OPTIMA® GC capillary columns

Plase also visit our application database with more than 3,000 applications under www.mn-net.com/apps

- GC columns for routine analysis and special separations
- More than 50 stationary phases

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



## General remarks

#### 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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