Chromatography

MACHEREY-NAGEL

Vials and caps 2018

For reliable analysis

- Vials and inserts
- Closures and septa
- Accessories

MACHEREY-NAGEL
www.mn-net.com

MN Since 1911

MACHEREY-NAGEL – About us

Quality since 1911

Since 1911 MACHEREY-NAGEL and their produts 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. 600 employees and 40 labs we serve our customers all around the world, either directly or indirectly through our distribution channels in more than 150 countries (pls. see *www.mn-net.com/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.

HPLC

GC

TLC

SPE and Flash

Syringe filters

Vials and caps

Vials and caps

MACHEREY-NAGEL offers a wide product range of vials, caps and accessories for chromatography. You can find for almost all autosamplers and applications the right product in our delivery program. In order to facilitate the correct selection of products, we have implemented some useful tools in the catalog (pls. see Autosampler Compatibility Charts starting on page 8 and Real Size Drawings starting on page 61) 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. Upon request certificates of conformity are available for all glass products and closures. Cost-free samples of all vials and caps can be asked for at any time.

MACHEREY-NAGEL Vials and caps for

GC and HPLC

Environmental analysis (TOC/VOC)

Headspace

Sample storage

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.

Fully automated production for safe and reliable consumables for chromatography

Packaging

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

Vial Kits

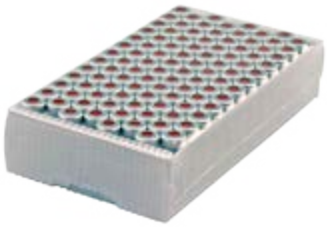
Vial Kits are a convenient way to stock both components, vials and caps, in a stackable, drawer-like box. As always both items are required for an analysis, it is a handy and easy packing system, requiring less administrative effort in comparison to the individual components.

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

Pre-sealed vial-closure combinations

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

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



Certficate

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

MACHEREY-NAGEL

Customer information

XX.XX.201X

CERTIFICATE OF CONFORMITY

MN REF: **70213, Lot # XXXXXXXXX**

MN Article description: 1.5 mL Screw Neck Vial N 8
outer diameter: 11.6 mm
outer height: 32 mm
clear, flat bottom, small opening

MACHEREY-NAGEL certifies that the above mentioned products have been manufactured against standards according to the valid specification, drawing and agreed lists of defects and that the specification limits have been met. The components have been manufactured with fully approved tooling. All required inspections and tests have been performed and the items delivered conform to the specifications of the order.

MACHEREY-NAGEL furthermore confirms that the vials 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 9001:2008. A copy of this certificate can be provided upon request.

MACHEREY-NAGEL GmbH & Co. KG

i.A. Gisela Lancé
Market Manager Vials & Caps

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New products

Plastic vials with firmly integrated glass inserts

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

Firmly integrated 0.2 mL glass insert in plastic outer shell

Extended range of plastic vials

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

1.5 mL polypropylene screw neck vial N 9

Pre-assembled vial-insert combinations (glass)

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

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

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

Pre-sealed screw neck vials N 24

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

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

Magnetic screw closures N 9

New products

11 mm crimp closures with colored caps

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

Colored crimp closures N 11

Total phthalate free (TPF) 11 mm crimp closure

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

Total phthalate free crimp closure N 11

Dual size decapper N 11 / N 20 plier style

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

Dual size decapper (plier style)

Vial container for EPA screw neck vials N 24

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

Vial container for screw neck vials N 24

Vial racks for vials with a diameter of
12 mm (1.5 mL vials)
15 mm max. (4 mL vials)
23.1 mm max. (10 mL + 20 mL Headspace vials)

- For transportation and a safe standing position of vials on the lab bench
- Made from chemically resistant PP
- Stackable
- 50 cavities per rack; sold by 1 pcs.
  (for racks with a vial diameter of 12 mm / 15 mm)
- 36 cavities per rack; sold by 5 pcs.
  (for racks with a vial diameter of 23.1 mm)
- Alternative to vial containers, however, without a protective lid

Vial Rack for 1.5 mL vials

Autosampler compatibility and cross-references

Agilent®

Main chapter	Pages		Most popular MN products for use on Agilent® instruments (comparable product nos. of Agilent® in brackets)
GC			5880, 5890, 6850, 6890, 7673A, 7683A, 7693A, CTC GC PAL® (G650X Agilent® GC Injector 80/120)
N 8 Crimp (microsampling)	20	Vials:	70282 (5180-0841/500), 70286 (5180-0844/500)
	20	Closures:	70289 (5180-0842/500), 702878 (5183-4490/500)
N 9 Screw (standard samples)	23	Vials:	702282 (5182-0714/100; 5183-2067/1000; 5190-6118/10.000; 5190-6125/50.000; 5185-5918/100.000), 702293 (5188-6535/100; 5188-6536/1000; 5190-6114/10.000; 5190-6121/50.000), 702283 (5182-0715/100; 5183-2068/1000; 5190-6119/10.000; 5190-6126/50.000), 702284 (5182-0716/100; 5183-2069/1000; 5190-6115/10.000; 5190-6122/50.000), 702078 (5183-2071/100), 702079 (5183-2072/100), 702006 (5183-2030/100), 702088 (5184-3550/100), 702007 (5188-6591/100), 702008 (5188-6592/100), 702135 (5188-5390/100), 702335, 702009 (5190-2242/100; 5190-2243/1000), 702172, 702010, 702500
	23	Inserts:	702716 (5183-2085/100), 702813 (9301-1387/500), 702077, 702818 (5181-1270/100), 702818.1 (5181-8872/100), 702819 (5182-0549/100‡), 702825 (5181-3377/500)
	24, 25	Closures:	702732 (5182-0717/100; 5185-5820/500; 5190-1599/1000; 5185-5917/50.000), 702080 (5185-5838/100), 702082 (5182-0718/100; 5185-5829/500), 702081 (5182-0719/100), 702287.1 (5182-0720/100; 5185-5863/500; 5190-4050/5.000), 702037 (5182-0722/100), 702038 (5182-0721/100; 5040-4682/250; 5185-5864/500), 702035 (5182-0723/100; 5185-5862/500), 702084 (5182-0725/100; 8010-0188/1.000), 702085 (5182-0724/100; 5185-5861/500), 702026 (5185-5823/100), 702155 (for GC PAL®)
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP (5181-3375/100; 5183-4491/1000; 5185-5852/100.000), 70201HP.2, 702885 (5182-0543/100; 5183-4492/1000), 702075 (5183-4495/100), 702892 (5181-3376/100; 5183-4493/1000), 702076 (5183-4496/100), 702888 (5182-3454/100), 702015 (5184-3551/100), 702016 (5184-3555/100), 702891 (9301-1388/100), 702014 (5188-6572/100), 702134 (9301-0977/100; 9301-0978/1000), 702334
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	70256, 702001 (for all see 5181-1210/100; 5061-3370/500; 5183-4498/1000; 5190-4053/5.000; 5185-5851/100.000), 70231.3 (5181-1215/100), 70231.1 (5181-1216/100), 70231.2 (5181-1217/100), 702730 (5190-9044/100), 702730.3 (5190-9045/100), 702730.1 (5190-9046/100), 702730.2 (5190-9047/100), 70231.4 (5190-9052/100‡), 70288 (5182-0552/100; 5183-4500/1000; 5190-4052/5.000; 5190-3186/10.000), 70288.1, 70288.2, 70288.3, 702995 (5181-1211/100; 5183-4499/1000), 702995.1 (5190-6096/1000), 702995.2 (5190-4075/1000), 702995.3 (5190-4074/1000), 702146 (5181-1212/100), 702879 (5188-5386/100, for GC PAL®)
N 13 Screw (only 6850, 22 Pos. Tray + 7693A)	37	Vials:	702962 (5183-4448/100; 5183-4452/1000), 702973 (5183-4450/100; 5183-4453/1000)
	37	Insert:	702972 (5183-2094/100) + spring 702974 (5183-2095/100)
	37	Closures:	702926 (5183-4464/100)
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)
N 9 Screw (standard samples)	23	Vials:	As indicated under *GC – Screw N 9 – Vials*
	23	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	24, 25	Closures:	702732 (5182-0717/100; 5185-5820/500; 5190-1599/1000; 5185-5917/50.000), 702080 (5185-5838/100), 702082 (5182-0718/100; 5185-5829/500), 702081 (5182-0719/100), 702287.1 (5182-0720/100; 5185-5863/500; 5190-4050/5.000), 702037 (5182-0722/100), 702038 (5182-0721/100; 5040-4682/250; 5185-5864/500), 702084 (5182-0725/100; 8010-0188/1.000), 702035 (5182-0723/100; 5185-5862/500), 702040 (5183-2078/100), 702085 (5182-0724/100; 5185-5861/500), 702083 (5183-2077/100), 702288.1 (5183-2076/100; 5185-5865/500), 702026 (5185-5823/100), 702027 (5185-5824/100; 5040-4649/500)
N 11 Crimp (standard samples)	28, 29	Vials:	As indicated under *GC – Crimp N 11 – Vials*
	28	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	30	Closures:	As indicated under *GC – Crimp N 11 – Closures, however, not 702146 and 702879*

Autosampler compatibility and cross-references

Agilent®

Main chapter	Pages		Most popular MN products for use on Agilent® instruments (comparable product nos. of Agilent® in brackets)
N 11 Snap (standard samples)	33	Vials:	702714 (5182-0544/100; 5183-4504/1000; 5185-5934/50.000), 702713 (5182-0546/100; 5183-4505/1000), 702712 (5182-0545/100; 5183-4506/1000), 702709 (5188-6593/100), 702134 (9301-0977/100; 9301-0978/1000), 702334, 702809 (5188-2788/100; 5190-3155/1000), 702173, 702174 (5182-0567/100)
	33	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	34	Closures:	702731 (5182-0550/100; 5182-0564/500), 702063, 702063.2080 (for both see 5182-3458/100), 702710.1, 702710.2080 (for both see 5182-0541/100; 5185-5916/500), 702064 (5183-4511/100), 702718 (5182-0566/100)
Headspace			HS7694, HS7697A, G1888A, CTC Combi PAL®
N 18 Screw (Combi PAL®, G1888A, HS7697A)	41	Vials:	702866 (5188-5392/100), 702826 (5188-2753/100), 702826.2 (5188-6537/100)
	41	Closures:	702055 (5188-2759/100)
N 20 Crimp	42	Vials:	702918 (5182-0838/100), 702261 (5182-0837/100; 5185-5957/10.000), 702924 (5183-4475/100; 5190-6147/100 for Combi PAL®), 702263 (5183-4474/100; 5067-0235/10.000 for Combi PAL®), 702263.2 (5190-2239/100 for Combi PAL®)
	44, 45, 46	Closures:	70234.10, 70234 (for both see 5183-4479/100; 5190-2258/10.000), 702071 (5183-4480/100), 702094 (5183-4477/100; 5190-2257/10.000), 702835 (5183-4478/100; 5067-0236/10.000), 702931 (5183-4476/100) + 702804 (9301-0721/100) = 70237, 702929 (5190-3987/100 for Combi PAL®), 702834 (for Combi PAL®)
TOC			AQUATek 70, SOLATek 72, Archon Purge + Trap
N 24 Screw	47	Vials:	702023, 702024
	48	Closures:	702058 (5183-4308/100), 702060 (5183-4744/24), 702062 (5190-3978/72)

CTC

Main chapter	Pages		Most popular MN products for use on CTC instruments
GC			CTC (Leap) GC PAL®, CTC (Leap) Combi PAL® (RTC/RSI/LSI) as well as the appropriate OEM autosamplers (Gerstel, Shimadzu®, etc.) and equivalent instruments of other manufacturers (Konik)
N 8 Crimp (microsampling)	20	Vials:	70282, 70286, 70212.1, 702002, 702003
	20	Closures:	70289, 702878
N 9 Screw (standard samples)	23	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335, 702500, 702009, 702172, 702010
	23	Inserts:	702716, 702813, 702077, 702818, 702818.1, 702825, 702819
	24, 25	Closures:	702155 (closures for liquid injection → please see HPLC)
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334, 702809, 702173, 702174
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	702879 (closures for liquid injection → please see HPLC)
HPLC			CTC (Leap) LC PAL®, HTX/HTX-xt PAL®, HTC PAL®, HTS/HTS-xt PAL®, PAL® RTC, PAL® RSI, PAL® LSI, Dual Head PAL® as well as equivalent instruments of other manufacturers
N 9 Screw (standard samples)	23	Vials:	As indicated under *GC – Screw N 9 – Vials*
	23	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	24, 25	Closures:	702287, 702287.1, 702036, 702037, 702038, 702107, 702026, 702288, 702288.1, 702039, 702040, 702083, 702109, 702027, 702286, 702035, 702158, 702084, 702085, 702159
N 11 Crimp (standard samples)	28, 29	Vials:	As indicated under *GC – Crimp N 11 – Vials*
	28	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	30	Closures:	70288, 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3, 702823
N 11 Snap (standard samples)	33	Vials:	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174
	33	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	34	Closures:	702710.1, 702717.2, 702718.1, 702710, 702064, 702718, 702710.2080, 702717.2080, 702718.2080

Autosampler compatibility and cross-references

CTC

Main chapter	Pages		Most popular MN products for use on CTC instruments
Headspace			CTC (Leap) Combi PAL® (RTC/RSI/LSI) as well as the appropriate OEM autosamplers (Gerstel, Shimadzu, etc.) and equivalent instruments of other manufacturers (Konik)
N 18 Screw (Combi PAL®)	41	Vials:	702866, 702826, 702826.2
	41	Closures:	702827, 702055
N 20 Crimp	42	Vials:	702924, 702263, 702263.2
	44, 45, 46	Closures:	702929, 702834 For washer bottle **702924**: 70267 + 702144

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 (VF-A10-A, VH-A10-A, VH-A90-A), Summit ASI-100/ASI-100T, Gina 50
IC*			Dionex® AS, AS-AP, AS 40, AS 50
N 8 Crimp (microsampling)	20	Vials:	702880, 70282, 70286
	20	Closures:	702025, 70289
N 8 Screw (standard samples)	21	Vials:	70213, 70213.2, 702004, 702893, 702860
	21	Inserts:	702968, 702968.1, 702824, 702005
	22	Closures:	70245, 702437
N 9 Screw (standard samples)	23	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702007, 702008, 702135, 702335, 702006, 702009*, 702172*, 702010*, 702500*
	23	Inserts:	702813, 702077, 702818, 702818.1, 702819*, 702825
	24, 25	Closures:	702287.1, 702287, 702036, 702037, 702038, 702107, 702026 702288.1*, 702288*, 702039*, 702040*, 702083*, 702109*, 702027*
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	70288, 70288.1, 70288.2, 70288.3, 702823, 70256, 70231.1, 70231.2, 70231.3, 70231.4
N 11 Snap (standard samples)	33	Vials:	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174
	33	Inserts:	As indicated under *Screw N 9 – Inserts*
	34	Closures:	702710.1, 702710, 702710.2080, 702717.2, 702064, 702717.2080
N 13 Screw (large sample volumes)	37	Vials:	702962, 702973
	37	Insert:	702972 + spring 702974
	37	Closures:	702926
N 20 Crimp (large sample volumes)	42	Vials:	702924 (not for Summit ASI-100/ASI-100T, Gina 50)
	44	Closures:	702094, 702093, 702091
TOC			ASE 200, ASE 350, AS-HV
N 24 Screw	47	Vials:	702023, 702024 (only for ASE 200 and AS-HV), 702074, 702131
	48	Closures:	702058

Autosampler compatibility and cross-references

Knauer

Main chapter	Pages		Most popular MN products for use on Knauer instruments
HPLC			TRIATHLON, Knauer S3950, Knauer UHPLC Version PLATINblue AS 1, Azura® AS 6.1L, Knauer Optimas
N 8 Screw (standard samples)	21	Vials:	70213, 70213.2, 702004, 702893
	21	Inserts:	702968, 702968.1, 702824, 702005
	22	Closures:	702067, 70245
N 9 Screw (standard samples)	23	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335, 702088, 702009, 702172, 702010, 702500
	23	Inserts:	702813, 702077, 702716, 702818, 702818.1, 702819, 702825
	24, 25	Closures:	702732, 702030, 702080, 702081, 702082, 702147, 702287.1, 702287, 702036, 702037, 702038, 702107, 702028, 702026
N 13 Screw (large sample volumes) (only for TRIATHLON)	37	Vials:	702962, 702973
	37	Insert:	702972 + spring 702974
	37	Closures:	702926, 702050
N 18 Screw (large sample volumes)	41	Vials:	702866
	41	Closures:	702072, 702055, 702827
N 20 Crimp (large sample volumes)	42	Vials:	702918
	44, 45, 46	Closures:	702094, 702129

PerkinElmer®

Main chapter	Pages		Most popular MN products for use on PerkinElmer® instruments (comparable product nos. of PE in brackets)
GC			AS 100/100B, AS 300, AS 2000/2000B, AS8300, AutoSytem, Clarus 400/480, Clarus 500/580, Clarus 600/680 (with 108-Vial Tray N6550017 for none PE-Vials screw neck vials N 9 or N 10 may be used as well → see HPLC)
N 8 Crimp (microsampling)	20	Vials:	70251 (N9301069/200), 70282, 70286 (N9302136/500)
	20	Closures:	70252.1, 702025 (for both see 03300806/1000)
N 11 Crimp (standard samples) * small opening ** wide opening	28	Vials:*	70201CG (N9301385/100), 70214CG (N9302680/100)
	28	Inserts:*	702824 (N9300705/100), 702005 (N9300706/100)
	28, 29	Vials:**	70201HP (N9306231/100), 70201HP.2, 702885 (N9306223/100), 702892 (N9302679/100), 702075 (N9304135/100), 702076 (N9304136/100), 702891 (N9300709/100), 702014 (N9300710/100), 702134 (N9300709/100‡), 702334 (N9300710/100‡)
	28	Inserts:**	702818 (N9300703/100), 702818.1, 702819, 702825 (N9300704/100)
	30	Closures:	702730 (N9306230/100), 70256 (N9306015/100), 702730.1 (N9302684/100), 702730.2 (N9302685/100), 702730.3 (N9302686/100), 70288 (N9307823/100), 70288.1, 70288.2, 70288.3, 702995 (N9306229/100), 702995.1, 702995.2, 702995.3, 702146 (N9302784/100)

‡ Alternative MN product

Autosampler compatibility and cross-references

PerkinElmer®

Main chapter	Pages		Most popular MN products for use on PerkinElmer® instruments (comparable product nos. of PE in brackets)
HPLC			Series 200 LC, ISS 100, ISS 200, ISS 225, LC 600, Integral 4000, Altus™ UPLC
N 8 Crimp (microsampling)	20	Vials:	70286 (N9302136/500)
	20	Closures:	70252.1, 702025 (for both see 03300806/1000)
N 9 Screw (standard samples)	23	Vials:	702282 (N9306201/100), 702293 (N9306220/100), 702283 (N9307801/100), 702078 (N9304139/100; N9307017/1000), 702079 (N9304140/100), 702284 (N9307802/100), 702009 (N9301732/100), 702172, 702010 (N9301733/100‡), 702500, 702007 (N9300715/100), 702008 (N9300716/100), 702135 (N9300715/100‡), 702335 (N9300716/100‡)
	23	Inserts:	702818 (N9300703/100), 702818.1, 702819, 702825 (N9300704/100)
	24, 25	Closures:	702288.1, 702027 (for both see N9306203/100; N9306363/1000; N9306364/100; N9306365/1000), 702287.1, 702026 (for both see N9306202/100; N9306360/100; N9306361/1000; N9306362/100), 702732, 702028 (for both see N9306200/100)
N 10 Screw (standard samples)	27	Vials:	702012 (N9306053/100), 702013 (N9306057/100)
	27	Inserts:	As indicated under *Screw N 9 – Inserts*
	27	Closures:	702047 (N9306052/100), 702044 (N9306206/100), 702045, 702046 (for both see N9306205/100)
N 11 Crimp (standard samples)	28, 29, 30	Vials/ Inserts/ Closures:	As indicated under *GC – Crimp N 11, however not 702146*
N 11 Snap (standard samples)	33	Vials:	702714 (N9303418/100; N9307018/1000), 702713 (N9306207/100), 702712 (N9306208/100), 702709 (N9300711/100), 702134 (N9300711/100‡), 702334
	33	Inserts:	As indicated under *Screw N 9 – Inserts*
	34	Closures:	702064 (N9303416/100), 702710 (N9303419/100), 702718 (N9303417/100)
Headspace			HS6, HS40/HS40XL, HS100/101, TurboMatrix™ HS16, HS40/HS40 Trap/HS40 XL, HS100/HS110 Trap
N 18 Screw (for Combi PAL® + TurboMatrix™ HS 16, 40 + 110)	41	Vials:	702866 (N6356479/100), 702826 (N9306075/100; N9306078/1000), 702826.2
	41	Closures:	702055 (N6356476/100), 702827 (N6356475/100), 702072 (N6356477/100‡)
N 20 Crimp (for Combi PAL®)	42	Vials:	702924 (N6356478/100), 702263 (N6356471/100), 702263.2
	45	Closures:	702929 (N6356559/100; N6356558/100‡), 702834 (N6356566/100; N6356565/100‡), 702928.9 (N6356562/100), 702928, 702774 (for both see N6356560/100)
N 20 Crimp (for TurboMatrix™ HS 16, 40 + 110) *** not suitable for TurboMatrix™ 110	42	Vials:	702917*** (N9302134/125), 70254 (N9306079/100; B0104236/1000; N9306216/1000), 702540 (N9303349/100; N9303348/1000)
	44, 45, 46	Closures:	702836, 702773 (for both see B0104239/100‡; B0104240/1000‡, B4000025/1000‡), 702829, 70234.8, 702775, 70234.9 (for all see N9306264/1000‡; N9306266/100‡; N9306267/1000‡), 702835, 702927, 702094, 702093 (for all see B0104241/100‡; B0104242/1000‡; B4000022/1000‡), 702145 (B0104243/100‡; B0104244/1000‡, B4000028/1000), 702931 (B0038137/100) + 702804 (B0099814/100), 70237 (B0110728/1000), 70234.10, 70234 (for both see N9306224/1000)
TOC			AQUATek 100
N 24 Screw	47	Vials:	702023, 702024
	48	Closures:	702058, 702060 (N6352033/24‡), 702062 (N6352032/72)

‡ Alternative MN product

Autosampler compatibility and cross-references

Shimadzu®

Main chapter	Pages		Most popular MN products for use on Shimadzu® instruments (comparable product nos. of Shimadzu® in brackets)
GC			AOC-14, AOC-17, AOC20/AOC-20i/AOC-20s AOC-5000, AOC-6000
N 8 Crimp (microsampling)	20	Vials:	70282, 70286, 70212.1, 702002, 702003
	20	Closures:	70289, 702878
N 9 Screw (standard samples)	23	Vials:	702282, 702293, 702283 (EU: 980-08337/1000), 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335, 702009, 702172, 702010, 702500
	23	Inserts:	702716, 702813 (EU: 980-04987/100), 702077, 702825, 702818 (US: 220-91521-04/100; EU: 980-01707/1000), 702819, 702818.1
	24, 25	Closures:	702081 (EU: 980-08339/1000), 702732, 702080, 702082, 702147, 702028 702287.1 (EU: 980-08338/1000; US: 228-45454-91/1000), 702036, 702037, 702038, 702107, 702026 702155 (for AOC-5000, AOC-6000)
N 10 Screw (standard samples)	27	Vials:	702011, 702012, 702013
	27	Inserts:	As indicated under *Screw N 9 – Inserts*
	27	Closures:	702045, 702046, 702048
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP (EU: 980-01705/1000), 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334, 702141
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	70288 (EU: 980-05740/1000), 70288.1, 70288.2, 70288.3, 702995, 702995.1, 702995.2, 702995.3, 702879 (EU: 980-01706/1000 for AOC-5000, AOC-6000)
N 13 Screw (large sample volumes)	37	Vials:	702962 (US: 220-90393-00/100; 221-34267-92/50), 702973
	37	Insert:	702972 (US: 228-21285-91/100) + spring 702974
	37	Closures:	702926 (US: 220-91521-14/1000), 702963 (US: 221-34268-92/50) + 702292 (US: 221-34266-92/50; 228-21290-91/100)
HPLC			SIL-2AS, SIL-6A/Sil-6B, Sil-7A, SIL-8A, SIL-9A, SIL HTA/HTC SIL-10A/SIL-10AF/SIL-10Ai/SIL-10AP/Sil-10HTA/SIL-10HTC/SIL-10ADvp SIL-20A/SIL-20AC/SIL-20AXR/SIL-20ACXR (Prominence), SIL-30AC (Nexera), LC-2010C/LC-2010A
N 8 Crimp (microsampling)	20	Vials:	70282, 70286
	20	Closures:	70289, 702878
N 9 Screw (standard samples)	23	Vials:	As indicated under *GC – Screw N 9 – Vials*
	23	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	24, 25	Closures:	702287.1 (EU: 980-08338/1000; US: 228-45454-91/1000), 702036, 702037, 702038, 702107, 702026, 702039, 702040, 702083, 702288.1 (US: 220-91521-16/1000), 702109, 702027
N 10 Screw (standard samples)	27	Vials:	702011, 702012, 702013
	27	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	27	Closures:	702045, 702046, 702047
N 11 Crimp (standard samples)	28, 29	Vials:	As indicated under *GC – Crimp N 11 – Vials*
	28	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	30	Closures:	70288 (EU: 980-05740/1000), 70288.1, 70288.2, 70288.3, 702823
N 11 Snap (standard samples)	33	Vials:	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174
	33	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	34	Closures:	702710.1, 702710, 702710.2080 (for all see US: 220-91521-22/1000), 702717.2, 702064, 702717.2080 (for all see US: 220-91521-23/1000)
N 13 Screw (large sample volumes)	37	Vials:	702962 (US: 220-90393-00/100; 221-34267-92/50), 702973
	37	Insert:	702972 (US: 228-21285-91/100) + spring 702974
	37	Closures:	702926 (US: 220-91521-14/1000), 702963 (US: 221-34268-92/50) + 702292 (US: 221-34266-92/50; 228-21290-91/100)
N 8, Shell vials (standard samples)	40	Vials + Plugs:	70202.1 (US: 220-91521-06/1000; vial with plug) + 702807 (US: 220-91521-13/1000), 702017 (US: 220-91521-07/1000; vial with plug) + 702807 (US: 220-91521-13/1000) not for Sil-10/Ai/AF/AP

‡ Alternative MN product

Autosampler compatibility and cross-references

Shimadzu®

Main chapter	Pages		Most popular MN products for use on Shimadzu® instruments (comparable product nos. of Shimadzu® in brackets)
Headspace			AOC-5000/AOC-6000, HS-20/HS-20Trap, HSS-2B, HT200H
N 18 Screw (AOC-5000/AOC-6000)	41	Vials:	702866 (US: 220-94796-07/100; EU: 980-00247/1000), 702826.2, 702826 (US: 220-94796-01/100; EU: 961-00915/1000; EU: 961-01122/100)
	41	Closures:	702055 (US: 220-94796-02/100; EU: 961-00914/1000; EU: 961-01123/100), 702827 (EU: 980-01708/1000)
N 20 Crimp AOC-5000/AOC-6000)	42	Vials:	702924 (EU: 980-00664/1000; US: 225-23140-11/100‡), 702263 (EU: 980-00111/1000; US: 225-23140-21/100‡), 702263.2
	44, 45, 46	Closures:	702929 (EU: 961-01256/1000), 702928 (EU: 980-00112/1000), 702834 (EU: 980-03372/1000), closure for washer bottle **702924**: 70267 + 702144
N 20 Crimp (HS-20/HS-20Trap, HT200H)	42	Vials:	702924 (EU: 980-00664/1000; US: 225-23140-11/100‡), 702263 (EU: 980-00111/1000; US: 225-23140-21/100‡), 702263.2
	44, 45, 46	Closures:	702093 (EU: 980-05338/1000), 702094, 702091, 702927 (US: 223-57730-13/100), 702835 (US: 223-57730-13/100‡)
TOC			ASI-L/ASI-V
N 20 Screw	39	Vials:	702099 (US: 638-41462/100)
	39	Closures:	702181 (US: 638-20074-01/100‡; US: 038-00165-61/100‡)
N 24 Screw	47	Vials:	702023, 702024
	48	Closures:	702058, 702060 (US: 038-00165-40/200‡), 702062 (US: 038-00165-50/100)

‡ Alternative MN product

Thermo Scientific®

Main chapter	Pages		Most popular MN products for use on Thermo Scientific® instruments (comparable product nos. of Thermo Scientific® in brackets)
GC			AI/AS1310, TriPlus™ RSH, TriPlus™ 100 LS, AS2000, AS1000/AS/AI3000 (II)/ AS3500 Trace GC, AS200, AS800
N 8 Crimp (microsampling)	20	Vials:	70282, 70286, 70251 (60180-707/1000), 702880 (60180-501/125)
	20	Closures:	70289 (60180-525/100; 60180-709/1000), 702025 (60180-708/1000‡)
N 8 Screw (standard samples)	21	Vials:	70213, 70213.2, 702004 (60180-508/100; 60180-714/1000), 702893 (60180-560/100; 60180-715/1000)
	21	Inserts:	702968 (60180-265/100), 702968.1, 702824 (60180-721/1000), 702005 (60180-722/1000)
	22	Closures:	702067 (60180-665/100; 60180-720/1000‡), 70245 (60180-667/100; 60180-719/1000‡), 702069 (60180-666/100‡)
N 9 Screw (standard samples)	23	Vials:	702282 (60180-723/1000), 702283 (60180-509/100), 702293 (60180-724/1000), 702284 (60180-561/100; 60180-724/1000), 702078, 702079, 702006, 702007 (60180-507/100), 702008, 702135, 702335, 702009, 702172, 702010, 702500
	23	Inserts:	702716 (60180-266/100), 702813, 702077, 702818 (60180-734/1000), 702818.1, 702819, 702825 (60180-735/1000)
	24, 25	Closures:	702732 (60180-728/1000), 702081 (60180-669/100‡), 702084 (60180-670/100‡), 702287.1 (60180-729/1000), 702037 (60180-671/100‡), 702026 (60180-673/100‡)
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP, 70201HP.2, 702885 (60180-502/100; 60180-701/1000), 702892 (60180-702/1000), 702075, 702076, 702888, 702891, 702014, 702134, 702334
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	70256, 702730 (for both see 60180-705/1000), 70288.3 (60180-526/100‡), 70288 (60180-706/1000), 70288.2, 70288.1

‡ Alternative MN product

Autosampler compatibility and cross-references

Thermo Scientific®

Main chapter	Pages		Most popular MN products for use on Thermo Scientific® instruments (comparable product nos. of Thermo Scientific® in brackets)
HPLC			AS1000, AS3000, AS3500 SpectraSYSTEM, AS100, AS300, Surveyor, Accela/Accela Open AS as well as autosamplers of Dionex® (pls. see page 10)
N 8 Crimp (microsampling)	20	Vials:	70282, 70286, 702880 (60180-501/125)
	20	Closures:	70289 (60180-525/100; 60180-709/1000), 702025 (60180-708/1000‡)
N 8 Screw (standard samples)	21, 22	Vials / Inserts / Closures:	As indicated under *GC – Screw N 8*
N 9 Screw (standard samples)	23, 24, 25	Vials / Inserts / Closures:	As indicated under *GC – Screw N 9*, additionally closures 702040 (60180-672/100‡) and 702027 (60180-674/100‡)
N 11 Crimp (standard samples)	28, 29, 30	Vials / Inserts / Closures:	As indicated under *GC – Crimp N 11*
N 11 Snap (standard samples)	33	Vials:	702714 (60180-710/1000), 702713, 702712 (60180-711/1000‡), 702709, 702134, 702334, 702809, 702173, 702174
	33	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	34	Closures:	702063.2080 (60180-676/100‡), 702063 (60180-712/1000), 702710.2080, 702710.1 (for both see 60180-713/1000), 702717.2080 (60180-678/100‡), 702710.2080 (60180-677/100‡)
N 20 Crimp (large sample volumes)	42	Vials:	702924 (60180-740/1000; 60180-504/125‡)
	44	Closures:	702093 (60180-521/100)
Headspace			HS850, HS2000, TriPlus™ 300 HS, TriPlus™ HS/SPME, TriPlus™ RSH
N 18 Screw (for TriPlus™ RSH/ HS/ SPME/300)	41	Vials:	702866, 702826, 702826.2
	41	Closures:	702055, 702827
N 20 Crimp (for Combi PAL®)	42	Vials:	702924 (60180-740/1000; 60180-504/125‡), 702263 (60180-741/1000; 60180-506/125‡), 702263.2
	44, 45, 46	Closures:	702775, 70234.9, 702773 (for all see 60180-513/100; 60180-746/1000), 702931 (60180-744/1000) + 702804 (60180-512/100) = 70237, 702093 (60180-521/100)
TOC			HiPerTOC
N 24 Screw	47	Vials:	702021, 702022, 702023 (B7950-VO/100), 702024 (B7951-VO/100)
	48	Closures:	702058, 702060 (B7950-1A/100), 702062 (B7995-24/100‡)

‡ Alternative MN product

Autosampler compatibility and cross-references

Varian® (Agilent®)

Main chapter	Pages		Most popular MN products for use on Varian® instruments (now Agilent®; comparable product nos. of Varian® → Agilent® CrossLab in brackets)
GC			8400 / 8410, 8000 / 8035 / 8100 / 8200, CP-9010/9050, CP-910/911/912, CP940/941, Varian Vista, CTC GC/Combi PAL®
N 8 Crimp (microsampling)	20	Vials:	70282 (CP958690 → 8010-0155/500), 702002, 70286 (CP959485 → 8010-0154/500), 702003 (→ 8010-0153/1000)
	20	Closures:	70289 (CP959183/100), 702878
N 8 Screw (standard samples)	21	Vials:	70213 (392611639/100; 392620550/1000; CP10271/100 → 8010-0011/100), 70213.2 (392611640/100; 392620552/1000 → 8010-0013/100), 702004 (→ 8010-0010/100), 702893 (CP959895 → 8010-0012/100)
	21	Inserts:	702968.1 (392611593/100; 392620546/1000 → 8010-0125/100), 702824 (392611591/100; 392620548/1000 → 8010-0124/100), 702005 (→ 8010-0126/100)
	22	Closures:	702067 (392611645/100; 392620559/1000 → 8010-0064/100‡), 70245 (392611641/100; 392620558/1000 → 8010-0054/100), 702069 (392611644/100 → 8010-0063/100‡)
N 9 Screw (standard samples)	23	Vials:	702282 (392611653/100; 392620500/1000; 392611646/100 → 8010-0015/100), 702293 (392611654/100; 392620502/1000 → 8010-0017/100), 702283 (CP10291/100; 392620500/1000 → 8010-0014/100; 8010-0175/1000), 702284 (CP10292/100 → 8010-0016/100; 8010-0176/1000), 702078 (392611655/100; 392620501/1000), 702006 (CP959946/100), 702079 (392611879/100; 392620503/1000), 702008 (→ 8010-0009/100), 702007 (392620514/100 → 8010-0008/100), 702135 (→ 8010-0162/100), 702335, 702009 (→ 8010-0161/100; 8010-0194/1000), 702172, 702010, 702500 (CP14959/100)
	23	Inserts:	702813 (392611596/100; 392620536/1000; CP10580 → 8010-0132/100), 702077 (392611855/100; 392620537/1000), 702818 (392611594/100; 392620538/1000 → 8010-0131/100), 702818.1 (392611595/100; 392620539/1000), 702825 (CP912322 → 8010-0136/500)
	24, 25	Closures:	702732 (CP914610), 702081, 702287.1 (CP958914 → 8010-0086/100), 702037 (392611659/100 → 8010-0088/100), 702035 (→ 8010-0087/100), 702084 (392611658 → 8010-0089/100), 702155 (for GC PAL®)
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP (392611634/100; 392620517/1000; CP10525 → 8010-0002/100), 70201HP.2 (392611635/100; 392620519/1000), 702885 (CP10601 → 8010-0001/100; 8010-0170/1000), 702892 (CP10701 → 8010-0003/100; 8010-0172/1000), 702075, 702076, 702888, 702891 (392620525 → 8010-0006/100), 702014 (→ 8010-0007/100), 702134 (→ 8010-0160/100), 702335
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	70256, 702730 (for both see 392611632/100; 392620524/1000; CP10210 → 8010-0045/100; 8010-0181/1000), 702730.1 (→ 8010-0047/100), 702730.2 (→ 8010-0048/100), 702730.3 (→ 8010-0046/100), 70288 (392611631/100; 392620523/1000, 392620521/100; 392620522/1000; CP959268 → 8010-0050/100; 8010-0183/1000), 702995 (→ 8010-0049/100; 8010-0182/1000), 702879 (MLA110040M/100 → 8010-0052/100, for GC PAL®)

‡ Alternative MN product

Autosampler compatibility and cross-references

Varian® (Agilent®)

Main chapter	Pages		Most popular MN products for use on Varian® instruments (now Agilent®; comparable product nos. of Varian® → Agilent® CrossLab in brackets)
HPLC			ProStar 400/410/420/430, Marathon Basic. Varian LC 9100/9095/9090, 920-LC/940-LC
N 8 Crimp (microsampling)	20	Vials:	As indicated under *GC – Crimp N 8 – Vials*
	20	Closures:	As indicated under *GC – Crimp N 8 – Closures*
N 8 Screw (standard samples)	21	Vials:	As indicated under *GC – Screw N 8 – Vials*
	21	Inserts:	As indicated under *GC – Screw N 8 – Inserts*
	22	Closures:	As indicated under *GC – Screw N 8 – Closures,* additionally closure 702437 (→ 8010-0062/100)
N 9 Screw (standard samples)	23	Vials:	As indicated under *GC – Screw N 9 – Vials*
	23	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	24, 25	Closures:	As indicated under *GC – Screw N 9 – Closures,* additionally closures 702040 (392611660/100 → 8010-0082/100), 702288.1 (→ 8010-0078/100)
N 11 Crimp (standard samples)	28, 29	Vials:	As indicated under *GC – Crimp N 11 – Vials*
	28	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	30	Closures:	As indicated under *GC – Crimp N 11 – Closures,* additionally closure 70231.4 (CP911378/100)
N 11 Snap (standard samples)	33	Vials:	702714 (CP10390/100 → 8010-0024/100), 702713 (CP10391/100 → 8010-0023/100; 8010-0177/1000), 702712 (CP10392/100 → 8010-0025/100; 8010-0178/1000), 702709, 702134 (→ 8010-0160/100), 702334, 702809 (392611666/100 → 8010-0158/100; 8010-0193/1000), 702173, 702174
	33	Inserts:	As indicated under *GC – Screw N 9 – Inserts*
	34	Closures:	702731 (392611871 → 8010-0104/100), 702063, 702063.2080 (for both see → 8010-0108/100), 702710 (392611873; CP10132), 702710.1, 702710.2080 (for both see → 8010-0112/100), 702064 (392611874/100; CP10130/100 → 8010-0106/100), 702717.2, 702717.2080, 702718 (392611872/100 → 8010-0105/100), 702718.1, 702718.2080
Headspace			CP9020/9025, CP9060, Genesis, CTC Combi PAL®
N 18 Screw (for Combi PAL®)	41	Vials:	702866 (392620102/100 → 8010-0038/100), 702826 (392620202/100; CP910346/100 → 8010-0042/100), 702826.2 (392620204/100; CP911282/100 → 8010-0044/100)
	41	Closures:	702827 (392620302/100 → 8010-0139/100), 702072 (392620306/100 → 8010-0140/100‡), 702055 (392620304/100; CP910347/100 → 8010-0139/100)
N 20 Crimp (for Combi PAL®)	42	Vials:	702924 (MLA201000/100 → 8010-0030/100), 702263 (MLA202100/100, 392612021/100 → 8010-0034/100), 702263.2 (392620528/100; 392620529/1000 → 8010-0036/100)
	44, 45, 46	Closures:	702929 (MLA200051ML/100 → 8010-0165/100), 702834 (392612017/100 → 8010-0420/100)
N 20 Crimp (CP-9020/9025, CP-9060, Genesis)	42	Vials:	702924 (MLA201000/100 → 8010-0030/100), 702918 (392611677/100; CP10090/100 → 8010-0029/100; 8010-0179/1000), 702261 (392611675/100; CP10070/100 → 8010-0033/100; 8010-0180/1000)
	44, 45, 46	Closures:	70234.10, 70234, 702775 (392611859/100; CP10213/100 → 8010-0117/100), 702094 (392611858/100 → 8010-0116/100; 8010-0191/1000), 702931 (5183-4476/100) + 702804 (8010-0120/100) = 70237
TOC			Archon
N 24 Screw	47	Vials:	702023, 702024
	48	Closures:	702058, 702060, 702062

‡ Alternative MN product

Autosampler compatibility and cross-references

VWR® (Merck® / Hitachi®)

Main chapter	Pages		Most popular MN products for use on VWR® instruments (comparable product nos. of VWR® Europe in brackets)
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
N 8 Crimp (microsampling) For AS 4000/AS 6000, LAChrom L-7200/L-7250	20	Vials:	70282 (548-0078/1000), 70286 (548-0080/1000)
	20	Closures:	70289 (548-0040/1000; 548-3040/100), 702878 (548-0038/1000; 548-3038/100)
N 8 Screw (standard samples)	21	Vials:	70213 (548-0018/1000; 548-3018/100), 70213.2 (548-0448/1000), 702004 (548-0420/1000), 702893 (548-0019/1000; 548-3019/100), 702860 (548-0419/1000)
	21	Inserts:	702968 (548-0020/1000), 702968.1 (548-0308/1000), 702824 (548-0083/1000), 702005 (548-0780/1000)
	22	Closures:	70245 (548-0024/1000: 548-3024/100), 702437 (548-0834/1000; 548-1497/1000‡), 702067 (548-3322/1000; 548-1491/1000‡)
N 9 Screw (standard samples)	23	Vials:	702282 (548-0028/1000; 548-3028/100), 702293, 702283 (548-0029/1000; 548-3029/100), 702078 (548-0426/1000‡), 702284 (548-0030/1000; 548-3030/100), 702079 (548-0427/1000), 702007 (548-0425/1000‡; 548-1442/1000‡), 702008 (548-3308/1000‡), 702006 (548-0081/1000), 702135 (548-0428/1000), 702335 (548-0791/1000), 702009 (548-0440/1000; 548-3094/100), 702172 (548-0453/1000), 702010 (548-0894/1000), 702500 (548-0452/1000)
	23	Inserts:	702813 (548-0006/1000; 548-3006/100), 702077 (548-0311/1000), 702818 (548-0002/1000), 702818.1 (548-0812/1000), 702819 (548-1381/1000), 702716 (548-0310/1000), 702825 (548-0001/1000)
	24, 25	Closures:	702287.1 (548-0085/1000), 702287 (548-0034/1000), 702036 (548-0786/1000), 702037 (548-0381/1000), 702038 (548-3179/1000), 702107 (548-0162/1000), 702288.1 (548-0088/1000), 702288 (548-0084/1000), 702039 (548-0788/1000), 702040 (548-0382/1000), 702083, 702109 (548-3182/1000), 702026 (548-0372/1000), 702027 (548-0373/1000)
N 11 Crimp (standard samples)	28, 29	Vials:	70201HP (548-0003/1000; 548-3003/100), 70201HP.2 (548-3337/1000), 702885 (548-0004/1000; 548-3004/100), 702075 (548-2088/1000; 548-1368/100‡), 702892 (548-0005/1000; 548-3005/100), 702076 (548-1364/1000), 702888 (548-0092/1000; 548-3092/100), 702891 (548-0424/1000‡), 702014 (548-3307/1000), 702134 (548-0429/1000), 702334 (548-0792/1000)
	28	Inserts:	As indicated under *Screw N 9 – Inserts*
	30	Closures:	70288 (548-0009/1000; 548 3009/100), 70288.1 (548-0848/1000), 70288.2 (548-0844/1000), 70288.3 (548-0845/1000), 702823 (548-0411/1000)
N 11 Snap (standard samples)	33	Vials:	702714 (548-0011/1000; 548-3011/100), 702713 (548-0422/1000), 702712 (548-0012/1000; 548-3012/100), 702709 (548-1441/1000‡), 702134 (548-0429/1000), 702334 (548-0792/1000), 702809 (548-0120/1000; 548-3120/100), 702173 (548-0454/1000), 702174 (548-0895/1000)
	33	Inserts:	As indicated under *Screw N 9 – Inserts*
	34	Closures:	702710.1 (548-0432/1000), 702710 (548-0016/1000), 702710.2080 (548-3208/1000), 702717.2 (548-0435/1000), 702064 (548-0017/1000), 702717.2080 (548-3210/1000), 702718.1 (548-0434/1000), 702718 (548-0015/1000; 548-3015/100), 702718.2080 (548-3209/1000), 702063 (548-0433/1000‡), 702731 (548-3358/1000), 702063.2080 (548-3360/1000)
N 8 Shell vials (standard samples) Only for Chromaster and LaChrom Elite L-2200/ L-2200U	40	Vials + plugs:	70202.1 + 702807 (548-0352/1000; 548-0042/1000‡), 702017 + 702807 (548-0353/1000; 548-0043/1000‡)

‡ Alternative MN product

Autosampler compatibility and cross-references

VWR® (Merck® / Hitachi®)

Main chapter	Pages		Most popular MN products for use on VWR® instruments (comparable product nos. of VWR® Europe in brackets)
N 13 Screw (large sample volumes) Not for AS 2000/AS 4000/ AS 6000	37	Vials:	702962 (548-0051/1000; 548-3051/100), 702973 (548-0052/1000; 548-3052/100)
	37	Insert:	702972 (548-0093/1000) + spring 702974 (548-0094/1000)
	37	Closures:	702926 (548-0054/1000; 548-3054/100), 702963 (548-0096/1000) + 70260 (548-0111/1000; 548-3111/100)

‡ Alternative MN product

Waters®

Main chapter	Pages		Most popular MN products for use on Waters® instruments (comparable product nos. of Waters® in brackets)
HPLC			WISP, 717 (Plus), GPC 2000, 2707, Alliance 2690/2695, Alliance 2790/2795, ACQUITY®
N 9 Screw (standard samples) Not for WISP, 717 (Plus), GPC 2000	23	Vials:	702282, 702293, 702283 (186000273), 702284 (186000848), 702078 (186000273DV), 702079 (186000848DV), 702007 (186002804), 702008 (186002803), 702135, 702335, 702006 (186002802, not for 2690/2695), 702009 (186002626), 702172, 702010 (186005219), 702500
	23	Inserts:	702818 (WAT094170), 702818.1 (WAT094170DV), 702819
	24, 25	Closures:	702026 (186000274), 702027 (186000305), 702287.1 (186005828), 702287 (186002456‡), 702036 (186005826), 702037 (186002129‡), 702038 (186002130‡), 702288.1 (186005829), 702288 (186002457‡), 702039 (186005827), 702040 (186002128‡), 702083 (186002127‡)
N 10 Screw (standard samples) For Alliance 2690/2695, Alliance 2790/2795	27	Vials:	702011 (WAT063300), 702012, 702013
	27	Inserts:	702818 (WAT094170), 702818.1 (WAT094170DV) , 702819
	27	Closures:	702045 (WAT058874‡), 702046, 702047
N 11 Crimp (standard samples) For Alliance 2690/2695, Alliance 2790/2795	28, 29	Vials:	70201HP (WAT094222), 70201HP.2, 702885, 702892 (WAT094223), 702075 (WAT094222DV), 702076 (WAT094223DV)
	28	Inserts:	702818 (WAT094170), 702818.1 (WAT094170DV), 702819
	30	Closures:	70288 (PSL404219), 70288.1, 70288.2, 70288.3, 702995 (PSL404231), 702995.1, 702995.2, 702995.3
N 11 Snap (standard samples) For Alliance 2690/2695, Alliance 2790/2795	33	Vials:	702714, 702713 (WAT094219), 702712 (WAT094220), 702709, 702134, 702334, 702809 (186002628), 702173, 702174
	33	Inserts:	702818 (WAT094170), 702818.1 (WAT094170DV), 702819
	34	Closures:	702710.1 (186000303), 702095 (186002650), 702717.2 (186000304), 702143 (186002647)
N 8 Shell Vials (standard samples) Only for WISP, 717 (Plus)	40	Vials + Plugs:	70202.1 + 702807 (WAT025054C/250), 702017 + 702807 (WAT025053C/250)
N 13 Screw (large sample volumes) Only for WISP, 717 (Plus), GPC 2000	37	Vials:	702962 (186000840; WAT072710), 702973 (186001135)
	37	Insert:	702972 (WAT015199/144; WAT072704/100) + spring 702974 (WAT072708)
	37	Closures:	702926 (186000841/100‡; 186000965/1000‡), 702963 (600000162) + 70260 (WAT072714/144; WAT073005/1440)

‡ Alternative MN product

N 8 Crimp neck vials and caps N 8

Crimp neck vials N 8

For micro sampling

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

Crimping tools N 8

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

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

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

Screw neck vials, inserts and caps N 8

Screw neck vials N 8

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

Inserts for screw neck vials N 8 (small opening)

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

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

Container for screw neck vials N 8

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

Vial rack for screw neck vials N 8

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

N 8 Screw neck vials, inserts and caps N 8

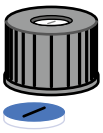
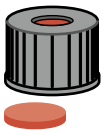
Ready assembled screw closures N 8 and plain screw caps N 8

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

N 8 septa for screw caps N 8

REF		Cap description	Septum description	Hardness	Thickness	Pack of
70261		- (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		- (septa only)	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100 / PE bag

Vial Kits screw neck N 8

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

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

Screw neck vials and inserts N 9

Wide opening, short thread

				Polypropylene				Polypropylene	
702282	702293	702283	702284	702500	702813	702716	702818	702819	702825
		silanized 702078	silanized 702079		silanized 702077		silanized 702818.1		
1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.5 mL	0.2 mL	0.25 mL	0.1 mL	0.1 mL	0.3 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	5.7 x 29 mm	6 x 31 mm
clear	amber	clear, label + scale	amber, label + scale	transparent, filling lines	clear	clear	clear	transparent	clear
flat bottom	flat bottom	flat bottom	flat bottom	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	with integrated spring	flat bottom
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

Micro-vials N 9 for small sample volumes

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

* upon request also available with an integrated silanized insert

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

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

N 9 Screw neck vials, inserts and caps N 9

Container for screw neck vials N 9

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

Vial rack for screw neck vials N 9

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

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

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

Ready assembled magnetic screw closure N 9

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

N 9 septa for screw caps N 9

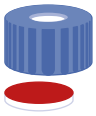
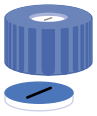
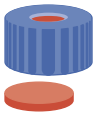
REF		Cap description	Septum description	Hardness	Thickness	Pack of
702043		- (septa only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702041		- (septa only)	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
702042		- (septa only)	Silicone white / PTFE red	45° shore A	1.0 mm	100 / PE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

Bonded screw closures N 9

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

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

Vial Kits screw neck N 9

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

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

N 9 Screw neck vials, inserts and caps N 9

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

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

! Special vials for special applications

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

- Silanized glass vials
  Silanized glass vials have a de-activated inner glass surface, in order to reduce adsorption of polar substances. Therefore they are often used for the analysis of proteins, phenols and amino acids, which would – without any silanization of the glass surface – react with the OH-groups of the glass and thus would stick to the normally polar glass surface. It is also recommendable to use silanized vials respectively inserts for pH-sensitive and aqueous samples.
- Plastic vials
  For some applications glass vials are not suitable due their composition and their chemical properties. Amongst these are heavy metal analysis, water and protein analysis, atomic absorption, capillary electrophoresis (CE) and ion chromatography (IC). For all these cases high purity polypropylene vials with 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-in-plastic systems are very robust, as the glass insert is well protected by the polypropylene outer shell. The tip of the micro-insert is centered by 100 per cent in an outlet at the bottom. The 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 level.

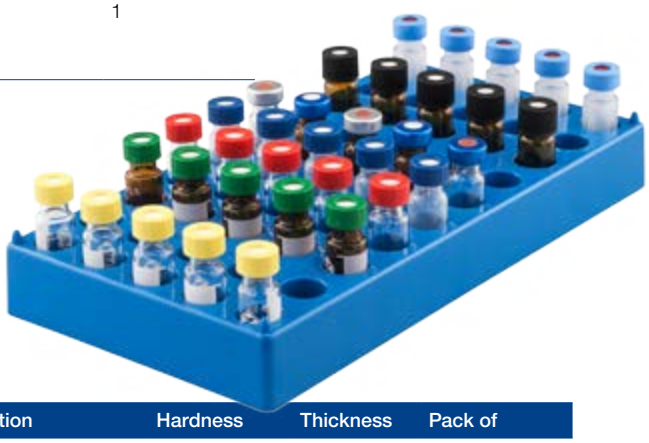
Screw neck vials, inserts and caps N 10

Screw neck vials and inserts N 10

Wide opening, 10-425 thread							
						Polypropylene	
702011	702012	702013	702813	702716	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 plastic spring	with integrated spring	flat bottom
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		Cap description	Septum description	Hardness	Thickness	Pack of
702044		N 10 PP bonded* screw cap, black, center hole	Red Rubber / TEF colorless	65° shore A	1.0 mm	100 / PE bag
702045		N 10 PP bonded* screw cap, black, center hole	Silicone white / PTFE beige	45° shore A	1.5 mm	100 / PE bag
702046		N 10 PP bonded* screw cap, black, center hole	Silicone white / PTFE red	45° shore A	1.0 mm	100 / PE bag
702047		N 10 PP bonded* screw cap, black, center hole	Silicone white / PTFE blue, slit	45° shore A	1.5 mm	100 / PE bag
702048		N 10 PP screw cap, black, center hole (ready assembled)	PTFE red / Silicone white / PTFE red	45° shore A	1.0 mm	100 / PE bag
702049	–	N 10 PP screw cap, black, center hole (no liner)	-	-	-	100 / PE bag

* Septum firmly connected with the cap; cannot be removed

N 11 Crimp neck vials, inserts and caps N 11

Crimp neck vials N 11

Small opening vials		Wide opening vials			
70201CG	70214CG	70201HP	70201HP.2	702885	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	
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, with transparent lid (suitable for freezers)	1

Vial rack for crimp neck / snap ring vials N 11

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

Crimp neck vials, inserts and caps N 11

Crimp neck vials N 11

Micro-vials N 11 for small sample volumes							
						PP / Glass insert	PP / Glass insert
702888	702141	702015	702016	702891	702014	702134*	702334*
1.1 mL	1.1 mL	1.1 mL	1.1 mL	0.2 mL	0.2 mL	0.2 mL	0.2 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear	clear	amber	clear	amber	clear	amber
flat bottom, 15 µL funnel in solid glass bottom	conical	conical with round pedestal glass plate	conical with round pedestal glass plate	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL glass insert	flat bottom, with integrated 0.2 mL glass insert
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

* upon request also available with integrated silanized insert

Crimping tools N 11

REF	Type of crimping tool	Pack of
735111	Manual crimper (standard), height adjustable, for 11 mm aluminium crimp caps	1 / Box
735911	Manual decapper (standard) for 11 mm aluminium crimp caps	1 / Box
735911.20	Manual decapper (plier style, dual) for 11 mm and 20 mm aluminium crimp caps	1 / PE Cover
735211	Ergonomic crimper for 11 mm aluminium crimp caps	1 / Box
735311	Ergonomic decapper for 11 mm aluminium crimp caps	1 / Box
735511	Electronic crimper for 11 mm aluminium crimp caps (battery-powered)	1 / Box
735611	Electronic decapper for 11 mm aluminium 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 (aluminium, magnetic)	1 / Box
735811	Decapping head for 11 mm crimp caps (aluminium, magnetic)	1 / Box

For useful tips on optimal crimping, please see “Download poster Optimal crimping” on our website *www.mn-net.com/vials* → vial accessories.

As a decision help for the selection of the most suitable crimping tool for your individual requirements follow the barcode on the poster or use alternatively the link (PDF datafile) that is embedded in the yellow box on top of the starting page of vial accessories.

N 11 Crimp neck vials, inserts and caps N 11

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

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

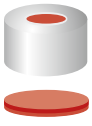
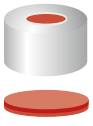
* upon request also available with a green, red or a blue crimp cap

Crimp neck vials, inserts and caps N 11

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

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

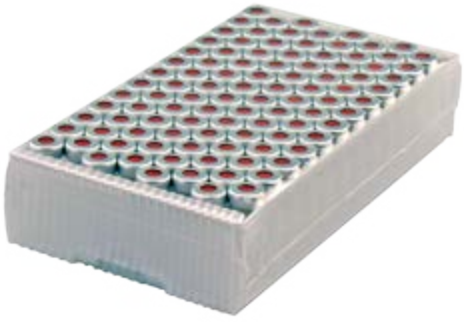
Vial Kits crimp neck N 11

Vial ↓	Closure →			
	70288	702995	70256 	702001 
70201HP: 1.5 mL, clear, flat bottom	702215	702218	702222	
702885: 1.5 mL, clear, flat bottom, label and scale	702216	702219	702223	702253
702892: 1.5 mL, amber, flat bottom, label and scale	702217	702221	702224	702254
Pack of 100 vials and 100 closures, each Other Vial Kits on request				

N 11 Crimp neck vials, inserts and caps N 11

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

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



! Optimal crimping

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

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

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

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

Incorrect crimping can be recognized by the following features:

Cap deformation

Pulled up edge of the center hole

Strong formation of wrinkles

Convex looking liner

Cap can be turned with only low expenditure of power

Snap ring vials and inserts N 11

Wide opening, vials can alternatively be crimped as well (see page 30)

						Polypropylene	
702714	**702713**	**702712**	**702813** silanized **702077**	**702716**	**702818** silanized **702818.1**	**702819**	**702825**
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 plastic spring	with integrated spring	flat bottom
100 / PP box	100 / PP box	100 / PP box	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

Micro-vials N 11 for small sample volumes

	PP / Glass insert	PP / Glass insert	Polypropylene	Polypropylene	Polypropylene
702709	**702134***	**702334***	**702809**	**702173**	**702174**
0.2 mL	0.2 mL	0.2 mL	0.3 mL	0.3 mL	0.7 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear	amber	transparent	amber	transparent
flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL 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

* 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			

N 11 Snap ring vials, inserts and caps N 11

Ready assembled snap ring closures N 11 (hard cap)

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

Ready assembled snap ring closures N 11 (soft cap)

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

Snap ring vials, inserts and caps N 11

Vial Kits snap ring N 11

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

Storage of samples in the fridge or in the freezer

Useful tips for sample handling

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

N 13 Crimp neck vials and caps N 13

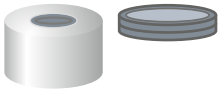
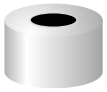
Crimp neck vial N 13

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

Crimping tools N 13

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

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

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

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 x 130 x 50 mm, with transparent lid (suitable for freezers)	1

Vial rack for crimp and screw neck vials N 13

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

Screw neck vials, insert and caps N 13

Screw neck vials and insert N 13

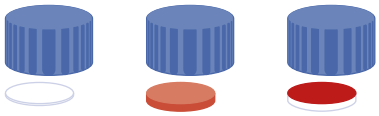
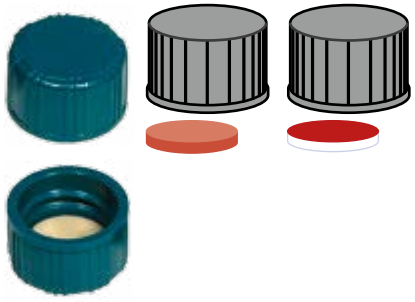
13-425 Thread			
702962	702973	702972	702974
4 mL	4 mL	0.3 mL	
14.75 x 45 mm	14.75 x 45 mm	6 x 40 mm	
clear	amber	clear	
flat bottom	flat bottom	conical, metal spring required	metal spring for **702972**
100 / PP box	100 / PP box	100 / PE bag	100 / PE bag

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

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

Diverse vials and caps

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

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

Container for screw neck vials N 15

REF	Description	Pack of
702518	36 position container blue with removeable 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

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

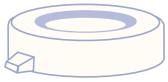
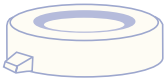
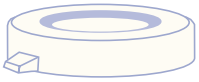
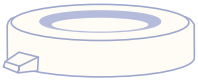
For screw neck vials with volumes larger than 24 mL please see page 47

Diverse vials and caps

Shell vials N 8 + N 12

Fire-polished neck N 8		Fire-polished neck N 12
70202.1	702017	702018
1 mL	1 mL	2 mL
8.2 x 40 mm	8.2 x 40 mm	11.6 x 31.5 mm
clear, flat bottom	amber, flat bottom	clear, flat bottom
100 / PP box	100 / PP box	100 / PP box
To be used with N 8 PE plugs	To be used with N 8 PE plugs	To be used with N 12 PE plugs
702807	702807	702054
100 / PE bag	100 / PE bag	100 / PE bag

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

N 18		N 22	
70271	70272	702019	70273
5 mL	10 mL	15 mL	25 mL
20 x 40 mm	22 x 50 mm	26 x 48 mm	26 x 65 mm
clear, 3rd hydrol. class, flat bottom	clear, 3rd hydrol. class, flat bottom	clear, 3rd hydrol. class, flat bottom	clear, 3rd 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

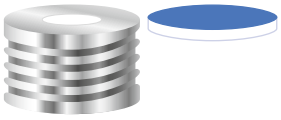
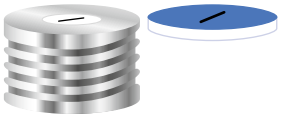
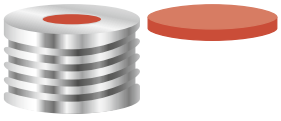
Headspace screw neck vials and magnetic screw caps N 18

Headspace screw neck vials N 18

Precision thread, not standardized

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

Ready assembled, magnetic screw closures N 18

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

Crimp neck vials N 20

5–10 mL

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

20 mL

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

Crimp neck vials and caps N 20

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, 3rd 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 aluminium 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 aluminium crimp caps	1 / Box
735911.20	Manual decapper (plier style, dual) for 11 mm and 20 mm aluminium crimp caps	1 / PE Cover
735220	Ergonomic crimper for 20 mm aluminium crimp caps	1 / Box
735320	Ergonomic decapper for 20 mm aluminium crimp caps	1 / Box
735520	Electronic crimper for 20 mm aluminium crimp caps (battery-powered)	1 / Box
735620	Electronic decapper for 20 mm aluminium 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 (aluminium, magnetic, bi-metal)	1 / Box
735820	Decapping head for 20 mm crimp caps (aluminium, magnetic, bi-metal)	1 / Box

N 20 Crimp neck vials and caps N 20

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

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

* only centrically laminated with PTFE, typically called Pharma-Fix

Crimp neck vials and caps N 20

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

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

* only centrically laminated with PTFE, typically called Pharma-Fix

N 20 Crimp neck vials and caps N 20

Stoppers N 20

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

PE caps N 20 and suitable single septa N 19

REF		Cap description	Septum description	Hardness	Thickness	Pack of
		Height: 8.4 mm → for vials with beveled HS crimp neck				
70266		N 20 PE cap, transparent, for beveled HS crimp neck N 20, 4.3 mm center hole	(no liner)	-	-	100 / PE bag
70242		cap as above	Butyl beige / PTFE gray **unassembled** (as separate parts)	55° shore A	1.3 mm	100 each / PE bags
702128		cap as above	Natural rubber red-orange / TEF colorless, ready assembled	45° shore A	1.3 mm	100 / PE bag
		Height: 9.1 mm → for vials with flat DIN crimp neck				
70267		N 20 PE cap, transparent, for flat DIN crimp neck N 20, 4.3 mm center hole	(no liner)	-	-	100 / PE bag
70240		cap as above	Butyl beige / PTFE gray **unassembled** (as separate parts)	55° shore A	1.3 mm	100 each / PE bags
702129		cap as above	Natural rubber red-orange / TEF colorless, ready assembled	45° shore A	1.3 mm	100 / PE bag
70269		- (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. and flat bottom Dimensions: 323 x 91 x 30 mm, stackable	5 / carton

Screw neck vials and caps N 24

Screw neck vials N 24 (EPA)

For TOC / VOC analysis and sample storage

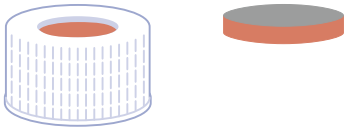
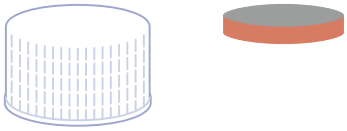
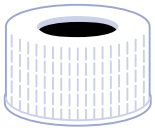
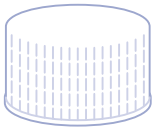
702021 / 702022	702132 / 702133	702023 / 702024	702074 / 702131
20 mL	30 mL	40 mL	60 mL
27.5 x 57 mm	27.5 x 72.5 mm	27.5 x 95 mm	27.5 x 140 mm
clear / amber, flat bottom	clear / amber, flat bottom	clear / amber, flat bottom	clear / amber, flat bottom
100 / PP box	100 / PP box	100 / PP box	100 / PP box

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

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

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

Vial accessories and other consumables for chromatography

GC injection port septa

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

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

Standard quality

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

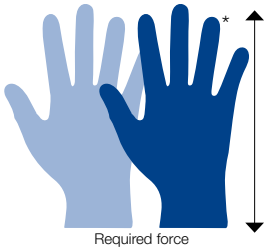
Capillary connectors for GC

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

Manual crimping tools – Standard

User profile

Manual crimping tool - Standard



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

- Number of crimp processes
- Reproducibility
- Durability
- Mobility
- Comfort adjust.
- Convenience

Aluminium | Bi-metal | Magnetic*

REF	Description	Pack of
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 decapper – Plier style, dual size

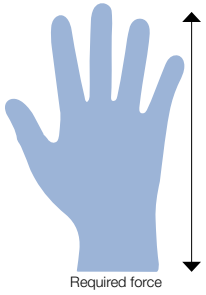
REF	Description	Pack of
735911.20	Manual decapper (plier style, dual size), for 11 mm and 20 mm aluminium crimp caps	1 / PE Cover

Vial accessories and other consumables for chromatography

Manual crimping tools – Ergonomic

User profile

Manual crimping tool - Ergonomic



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

- Number of crimp processes
- Reproducibility
- Durability
- Mobility
- Comfort adjustments
- Convenience

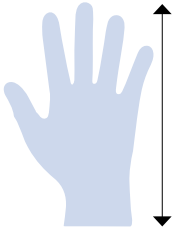
Aluminium | Bi-metal

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

Electronic crimping tools – Battery-powered

User profile

Battery-powered – electr. crimping tool



Cap sizes (N 11, N 20)

- Number of crimp processes
- Reproducibility
- Durability
- Mobility
- Comfort adjustments
- Convenience

Aluminium

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

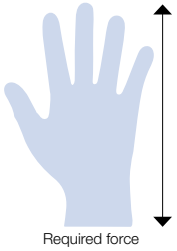
Electronic crimping tools – High Power crimping tool

User profile

Electronic high power crimping tool

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

$ $ $



- Number of crimp processes
- Reproducibility
- Durability
- Mobility*
- Comfort adjustments
- Convenience

Aluminium | Bi-metal | Magnetic

* normally stationary usage with a stand

REF	Description	Pack of
Basic high power crimping tool		
735700	Electronic high power crimping tool with fixed power supply	1 / Box
Crimping heads		
735711	Crimping head for **735700** for 11 mm crimp caps	1 / Box
735713	Crimping head for **735700** for 13 mm crimp caps	1 / Box
735720	Crimping head for **735700** for 20 mm crimp caps	1 / Box
Decapping heads		
735811	Decapping head for **735700** for 11 mm crimp caps	1 / Box
735820	Decapping head for **735700** for 20 mm crimp caps	1 / Box
Accessories for high power crimping tool		
735501	Stand for electronic crimping tools	1 / Box

Vial containers

REF	Description	Pack of
702514	81 position container blue, with firmly integrated devider, for all vials 11.6 x 32 mm, 130 x 130 x 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 x 130 x 50 mm, with transparent lid (suitable for freezers)	1
702516	25 position container blue, with removeable 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 removeable 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 removeable devider, or 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 accessories and other consumables for chromatography

Vial racks

REF	Description	Pack of
702502	50 position polypropylene vial rack blue, for all vials 11.6 x 32 mm with flat bottom Dimensions: 190 x 100 x 22 mm, stackable	1
702504	50 position polypropylene vial rack blue, for vials with a diameter of 15 mm max. and flat bottom Dimensions: 240 x 120 x 28 mm, stackable	1
702503	36 position polypropylene vial rack blue, for vials with a diameter of 23.1 mm max. and flat bottom Dimensions: 323 x 91 x 30 mm, stackable	5 / carton

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REF	Product	Page
702D20TB	septum N 20	45
702001	crimp closure N 11	30
702002	crimp neck vial N 8	20
702003	crimp neck vial N 8	20
702004	screw neck vial N 8	21
	screw neck vial N 8	38
702005	insert for vials N 8	21
	insert for vials N 11, small opening	28
702006	screw neck vial N 9	23
702007	screw neck vial N 9	23
702008	screw neck vial N 9	23
702009	screw neck vial N 9	23
70201CG	crimp neck vial N 11	28
70201HP	crimp neck vial N 11	28
70201HP.2	crimp neck vial N 11	28
702010	screw neck vial N 9	23
702011	screw neck vial N 10	27
702012	screw neck vial N 10	27
702013	screw neck vial N 10	27
702014	crimp neck vial N 11	29
702015	crimp neck vial N 11	29
702016	crimp neck vial N 11	29
702017	shell vial N 8	40
702018	shell vial N 12	40
702019	snap cap vial N 22	40
70202.1	shell vial N 8	40
702020	crimp neck vial N 20	42
702021	screw neck vial N 24	47
702022	screw neck vial N 24	47
702023	screw neck vial N 24	47
702024	screw neck vial N 24	47
702025	crimp closure N 8	20
702026	bonded screw closure N 9	25
702027	bonded screw closure N 9	25
702028	bonded screw closure N 9	25
702029	screw closure N 9	24
70203	crimp neck vial N 13	36
702030	screw closure N 9	24
702031	screw closure N 9	24
702032	screw closure N 9	24
	screw closure N 9	38
702033	screw closure N 9	24
	screw closure N 9	38
702034	screw closure N 9	24
	screw closure N 9	38
702035	screw closure N 9	24
702036	screw closure N 9	24
702037	screw closure N 9	24
702038	screw closure N 9	24
702039	screw closure N 9	24
70204.36	crimp neck vial N 20	42
702040	screw closure N 9	24
702041	septum N 9	25
702042	septum N 9	25
702043	septum N 9	25
702044	bonded screw closure N 10	27
702045	bonded screw closure N 10	27
702046	bonded screw closure N 10	27
702047	bonded screw closure N 10	27
702048	screw closure N 10	27
702049	screw cap N 10	27
70205.36	crimp neck vial N 20	42
702050	screw closure N 13	37
702051	screw closure N 13	37
	screw closure N 13	38
702052	screw closure N 13	37
	screw closure N 13	38
702053	septum N 12	37
702054	PE Plug N 12	40
702055	magnetic screw closure N 18	41
702056	crimp closure N 20	44
702057	septum N 20	45
702058	bonded screw closure N 24	48
702059	bonded screw closure N 24	48
70206.36	crimp neck vial N 20	42
702060	screw cap N 24	48
702061	screw cap N 24	48
702062	septum N 22	48
702063	snap ring closure N 11	34
702063.2080	snap ring closure N 11	34
702064	snap ring closure N 11	34
702065	septum N 11	31
702066	screw closure N 8	22
	screw closure N 8	38
702067	screw closure N 8	22
702068	screw closure N 8	22
	screw closure N 8	38
702069	screw closure N 8	22
702070	septum N 8	22
702071	crimp closure N 20	44
702072	magnetic screw closure N 18	41
702073	bonded screw closure N 24	48
702074	screw neck vial N 24	47
702075	crimp neck vial N 11	28
702076	crimp neck vial N 11	28
702077	insert for vials N 9	23
	insert for vials N 10	27
	insert for vials N 11, wide opening	28, 33
702078	screw neck vial N 9	23
	screw neck vial N 9	38
702079	screw neck vial N 9	23
	screw neck vial N 9	38
70208.36	crimp neck vial N 20	43
702080	screw closure N 9	24
702081	screw closure N 9	24
702082	screw closure N 9	24
702083	screw closure N 9	24
702084	screw closure N 9	24

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702085	screw closure N 9	24
702086	crimp neck vial N 20	42
702088	screw neck vial N 9	23
70209.1	crimp neck vial N 20	43
702091	crimp closure N 20	44
702093	crimp closure N 20	44
702094	crimp closure N 20	44
702095	snap ring closure N 11	34
702096	screw neck vial N 15	39
702097	screw neck vial N 15	39
702098	screw neck vial N 18	39
702099	screw neck vial N 20	39
70210.36	crimp neck vial N 20	43
702101	septum N 20	45
702101HP	pre-sealed vial-closure combination N 11	32
702102	screw closure N 24	48
702103	screw closure N 13	37
	screw closure N 13	38
702104	screw closure N 15	39
702105	screw closure N 18	39
702106	screw closure N 20	39
702107	screw closure N 9	24
702108	snap ring closure N 11	34
702109	screw closure N 9	24
702110	septum N 18	41
702112	crimp cap N 20	44
70212.1	crimp neck vial N 8	20
702128	PE cap N 20	46
702129	PE cap N 20	46
70213	screw neck vial N 8	21
	screw neck vial N 8	38
70213.2	screw neck vial N 8	21
	screw neck vial N 8	38
702130	screw closure N 24	48
702131	screw neck vial N 24	47
702132	screw neck vial N 24	47
702133	screw neck vial N 24	47
702134	crimp neck vial N 11	29
	snap ring vial N 11	33
702135	screw neck vial N 9	23
702136	magnetic screw closure N 18	41
70214CG	crimp neck vial N 11	28
702141	crimp neck vial N 11	29
702142	snap ring closure N 11	34
702143	snap ring closure N 11	34
702144	septum N 19	46
702145	crimp closure N 20	44
702146	crimp closure N 11	31
702147	screw closure N 9	24
702148	septum N 9	25
70215.36	crimp neck vial N 20	42
702155	magnetic screw closure N 9	24
702158	screw closure N 9	24
702159	screw closure N 9	24

REF	Product	Page
70216.36	crimp neck vial N 20	42
702160	screw cap N 9	24
702161	screw cap N 9	24
702162	screw cap N 9	24
702163	screw cap N 9	24
702164	screw cap N 9	24
702165	screw cap N 9	24
702168	bonded screw closure N 24	48
70217.36	crimp neck vial N 20	42
702170	vial-insert combination N 11	33
702172	screw neck vial N 9	23
702173	snap ring vial N 11	33
702174	snap ring vial N 11	33
702175	crimp closure N 11	31
702176	vial-insert combination N 11	33
702177	vial-insert combination N 9	23
702178	vial-insert combination N 9	23
702179	vial-insert combination N 9	23
702180	screw closure N 15	39
702181	screw closure N 20	39
702201	Vial Kit screw neck N 9	25
702202	Vial Kit screw neck N 9	25
702203	Vial Kit screw neck N 9	25
702204	Vial Kit screw neck N 9	25
702205	Vial Kit screw neck N 9	25
702206	Vial Kit screw neck N 9	25
702207	Vial Kit screw neck N 9	25
702208	Vial Kit screw neck N 9	25
702209	Vial Kit screw neck N 9	25
702211	Vial Kit screw neck N 9	25
702212	Vial Kit screw neck N 9	25
702213	Vial Kit screw neck N 9	25
702214	Vial Kit screw neck N 9	25
702215	Vial Kit crimp neck N 11	31
702216	Vial Kit crimp neck N 11	31
702217	Vial Kit crimp neck N 11	31
702218	Vial Kit crimp neck N 11	31
702219	Vial Kit crimp neck N 11	31
702221	Vial Kit crimp neck N 11	31
702222	Vial Kit crimp neck N 11	31
702223	Vial Kit crimp neck N 11	31
702224	Vial Kit crimp neck N 11	31
702225	Vial Kit snap ring N 11	35
702226	Vial Kit screw neck N 9	25
702227	Vial Kit snap ring N 11	35
702228	Vial Kit snap ring N 11	35
702229	Vial Kit snap ring N 11	35
702231	Vial Kit snap ring N 11	35
702232	Vial Kit snap ring N 11	35
702233	Vial Kit snap ring N 11	35
702234	Vial Kit snap ring N 11	35
702235	Vial Kit snap ring N 11	35
702236	Vial Kit snap ring N 11	35
702237	Vial Kit snap ring N 11	35

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REF	Product	Page
702238	Vial Kit screw neck N 8	22
702244	Vial Kit screw neck N 9	25
702246	Vial Kit screw neck N 8	22
702247	Vial Kit screw neck N 8	22
702248	Vial Kit screw neck N 8	22
702249	Vial Kit screw neck N 8	22
702251	Vial Kit screw neck N 8	22
702253	Vial Kit crimp neck N 11	31
702254	Vial Kit crimp neck N 11	31
702261	crimp neck vial N 20	42
702263	crimp neck vial N 20	42
702263.2	crimp neck vial N 20	42
702282	screw neck vial N 9	23
	screw neck vial N 9	38
702283	screw neck vial N 9	23
	screw neck vial N 9	38
702284	screw neck vial N 9	23
	screw neck vial N 9	38
702286	screw closure N 9	24
702287	screw closure N 9	24
702287.1	screw closure N 9	24
702288	screw closure N 9	24
702288.1	screw closure N 9	24
702292	septum N 12	37
702293	screw neck vial N 9	23
	screw neck vial N 9	38
70231	crimp closure N 11	30
70231.1	crimp closure N 11	30
70231.2	crimp closure N 11	30
70231.3	crimp closure N 11	30
70231.4	crimp closure N 11	30
702311	screw neck vial N 15	39
70232	crimp closure N 13	36
70233	crimp closure N 20	45
702334	crimp neck vial N 11	29
	snap ring vial N 11	33
702335	screw neck vial N 9	23
70234	crimp closure N 20	44
70234.8	crimp closure N 20	44
70234.9	crimp closure N 20	44
70234.10	crimp closure N 20 (high purity)	44
70235	crimp closure N 20	45
70236	crimp closure N 20	45
70236.1	crimp cap N 20	45
70237	crimp closure N 20	44
70238	crimp closure N 20	45
70239	crimp closure N 11	31
70240	PE cap N 20	46
702401	PE cap N 11	31
	PE cap N 11	34
70242	PE cap N 20	46
702437	screw closure N 8	22
70245	screw closure N 8	22
70248	septum N 8	22

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702481	septum N 8	22
70249	screw cap N 8	22
70250	screw cap N 8	22
702500	screw neck vial N 9	23
702502	vial rack for vials N 8	21
	vial rack for vials N 9	24
	vial rack for vials N 10	27
	vial rack for vials N 11	28
	vial rack for vials N 8, N 9, N 10, N 11	54
702503	vial rack for vials N 18, N 20	46
	vial rack for vials N 18, N 20	54
702504	vial rack for vials N 13	36
	vial rack for vials N 13	54
70251	crimp neck vial N 8	20
702514	container for vials N 8	21
	container for vials N 9	24
	container for vials N 10	27
	container for vials N 11	28
	container for vials N 8, N 9, N 10 and N 11	53
702515	container for vials N 13	36
	container for vials N 13	53
702516	container for vials N 20	46
	container for vials N 20	53
702517	container for vials N 24	47
	container for vials N 24	53
702518	container for vials N 15	38
	container for vials N 15	53
70252.1	crimp closure N 8	20
70254	crimp neck vial N 20	42
702540	crimp neck vial N 20	42
70256	crimp closure N 11	30
70257	crimp closure N 13	36
70260	septum N 12	37
702602	GC injection port septum	50
702604	GC injection port septum	50
702605	GC injection port septum	50
702606	GC injection port septum	50
702609	GC injection port septum	50
70261	septum N 8	22
702610	GC injection port septum	50
702611	GC injection port septum	50
702612	GC injection port septum	50
702613	GC injection port septum	50
702619	GC injection port septum	50
70262	septum N 11	31
702620	GC injection port septum	50
702621	GC injection port septum	50
702622	GC injection port septum	50
702623	GC injection port septum	50
702625	GC injection port septum	50
702626	GC injection port septum	50
702627	GC injection port septum	50
702628	GC injection port septum	50
702632	GC injection port septum	50

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REF	Product	Page
702646	GC injection port septum	50
702647	GC injection port septum	50
702648	GC injection port septum	50
702649	GC injection port septum	50
702656	GC injection port septum	50
702657	GC injection port septum	50
702658	GC injection port septum	50
702659	GC injection port septum	50
70266	PE cap N 20	46
702660	GC injection port septum	50
702661	GC injection port septum	50
702662	GC injection port septum	50
702663	GC injection port septum	50
70267	PE cap N 20	46
70269	septum N 19	46
702709	snap ring vial N 11	33
70271	snap cap vial N 18	40
702710	snap ring closure N 11	34
702710.1	snap ring closure N 11	34
702710.2080	snap ring closure N 11	34
702712	snap ring vial N 11	33
702713	snap ring vial N 11	33
702714	snap ring vial N 11	33
702716	insert for vials N 9	23
	insert for vials N 10	27
	insert for vials N 11, wide opening	28, 33
702717.2	snap ring closure N 11	34
702717.2080	snap ring closure N 11	34
702718	snap ring closure N 11	34
702718.1	snap ring closure N 11	34
702718.2080	snap ring closure N 11	34
702719	vial kit snap ring N 11	35
70272	snap cap vial N 18	40
70273	snap cap vial N 22	40
702730	crimp closure N 11	30
702730.1	crimp closure N 11	30
702730.2	crimp closure N 11	30
702730.3	crimp closure N 11	30
702731	snap ring closure N 11	34
702732	screw closure N 9	24
70274	PE snap cap N 18	40
70275	PE snap cap N 22	40
70277	septum N 20	45
702773	crimp closure N 20	44
702774	crimp closure N 20	45
702775	crimp closure N 20	44
70278	septum N 20	45
702780	septum N 20	45
70279	septum N 20	45
702791	septum N 22	48
702799	crimp cap N 20	44
702800	crimp cap N 8	20
702801	crimp cap N 11	31
702802	crimp cap N 13	36

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702803	crimp cap N 13	36
702804	crimp cap N 20	44
702805	crimp cap N 20	45
702807	PE plug N 8	40
702808	crimp cap N 20	45
702809	snap ring vial N 11	33
702813	insert for vials N 9	23
	insert for vials N 10	27
	insert for vials N 11, wide opening	28, 33
702818	insert for vials N 9	23
	insert for vials N 10	27
	insert for vials N 11, wide opening	28, 33
702818.1	insert for vials N 9	23
	insert for vials N 10	27
	insert for vials N 11, wide opening	28, 33
702819	insert for vials N 9	23
	screw neck vials and inserts N 10	27
	Insert for crimp neck vials N 11, wide opening	28, 33
70282	crimp neck vial N 8	20
702823	crimp closure N 11	30
702824	insert for vials N 8	21
	insert for vials N 11, small opening	28
702825	screw neck vial N 9	23
	insert for vials N 10	27
	insert for vials N 11, wide opening	28, 33
702826	headspace screw neck vial N 18	41
702826.2	headspace screw neck vial N 18	41
702827	magnetic screw closure N 18	41
702829	crimp closure N 20	44
70283	crimp closure N 8	20
702833	crimp cap N 20	45
702834	crimp closure N 20	45
702835	crimp closure N 20	44
702836	crimp closure N 20	44
702837	crimp closure N 20	45
702838	crimp closure N 20	45
70284	crimp closure N 11	30
70285	screw neck vial N 15	39
702857	pre-sealed vial-closure combination N 9	26
702858	pre-sealed vial-closure combination N 9	26
702859	pre-sealed vial-closure combination N 11	32
70286	crimp neck vial N 8	20
702860	screw neck vial N 8	21
702863	pre-sealed vial-closure combination N 9	26
702864	pre-sealed vial-closure combination N 9	26
702865	pre-sealed vial-closure combination N 24	49
702866	headspace screw neck vial N 18	41
702867	pre-sealed vial-closure combination N 11	32
702873	pre-sealed vial-closure combination N 9	26
702874	pre-sealed vial-closure combination N 9	26
702877	pre-sealed vial-closure combination N 24	49
702878	crimp closure N 8	20
702879	crimp closure N 11	31
70288	crimp closure N 11	30

Numerical index

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70288.1	crimp closure N 11	30
70288.2	crimp closure N 11	30
70288.3	crimp closure N 11	30
702880	crimp neck vial N 8	20
702881	pre-sealed vial-closure combination N 11	32
702885	crimp neck vial N 11	28
702888	crimp neck vial N 11	29
70289	crimp closure N 8	20
702891	crimp neck vial N 11	29
702892	crimp neck vial N 11	28
702893	screw neck vial N 8	21
	screw neck vial N 8	38
702904	septum N 19	46
702917	crimp neck vial N 20	42
702918	crimp neck vial N 20	42
702924	crimp neck vial N 20	42
702926	screw closure N 13	37
702927	crimp closure N 20	44
702928	crimp closure N 20	45
702928.9	crimp closure N 20	45
702929	crimp closure N 20	45
702931	stopper N 20	46
702931.1	stopper N 20	46
702962	screw neck vial N 13	37
	screw neck vial N 13	38
702963	screw cap N 13	37
702966	screw cap N 13	37
702968	insert for vials N 8	21
	insert for vials N 11, small opening	28
702968.1	insert for vials N 8	21
	insert for vials N 11, small opening	28
702972	insert for vials N 13	37
702973	screw neck vial N 13	37
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702974	metal spring for insert 702972	37
702974.1	metal spring for insert 702968	21
702981	septum N 18	41
702995	crimp closure N 11	31
702995.1	crimp closure N 11	31
702995.2	crimp closure N 11	31
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707971	linear capillary connector	50
707972	linear capillary connector	50
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735111	standard manual crimper N 11	29
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735120	standard manual crimper N 20	43
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735208	ergonomic manual crimper N 8	20
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735311	ergonomic manual decapper N 11	29
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735700	high power crimping tool (HP)	29
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735713	crimping head N 13 for HP crimping tool	53
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735811	decapping head N 11 for HP crimping tool	29
	decapping head N 11 for HP crimping tool	53
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735911	standard manual decapper N 11	29
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735911.20	manual decapper N 11, plier style	29
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735913	standard manual decapper N 13	36
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	standard manual decapper N 20	51

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 septum material is drawn away from the edges towards the middle of the vial due to the high pressure, leaving the edges insufficiently sealed. Besides that, the convex / concave surface of the septum along with its surface tension may lead to penetration problems (e.g., septum being pushed into the vial by the needle during penetration, coring, etc.).

Convex septum surface

Concave septum surface

Cap 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 aluminium below the crimp neck.
- In the case of 20 mm pressure release caps the bridges of the score lines may also suffer under too much pressure and thus may burst before reaching the specified level of vial pressure, causing problems in the autosampler.

- Generally beveled top crimp necks N 20 have a lower height than the flat DIN crimp neck. In order to seal beveled top Headspace vials tightly, crimping height and crimping pressure have to be adjusted to a firmer seal.

- Decappers do not need any adjustment.
- To check the 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 under-crimping which is, however, incorrect. The PTFE lamination of the septum has a very smooth surface, which may slip on the glass rim of the vial allowing to turn the cap already with a relatively low expenditure of energy and the right torque. This is even easier in the case of a beveled top Headspace crimp neck, since on the tapered edge of the rim the septum only has a small area of support.
- Re-usage of crimp neck vials is dangerous, as repeated washing along with the pressure of several crimping and decapping processes may result in neck breakage.

Our program comprises the following types of crimping tools:

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

These products are listed in the chapter of the respective crimp neck diameter as well as in the chapter "Vial accessories and other consumables for chromatography" starting on page 51. If you want to find out which type of crimping tool suits your personal needs best, please visit our website under *www.mn-net.com/vial* → Vial accessories and open the PDF datafile that is embedded in the yellow box on top of the section. Please check which of the different user profiles matches your individual requirements best to select an optimal crimping tool.

Real size drawings

Screw neck vials N 8 Screw neck vials N 9

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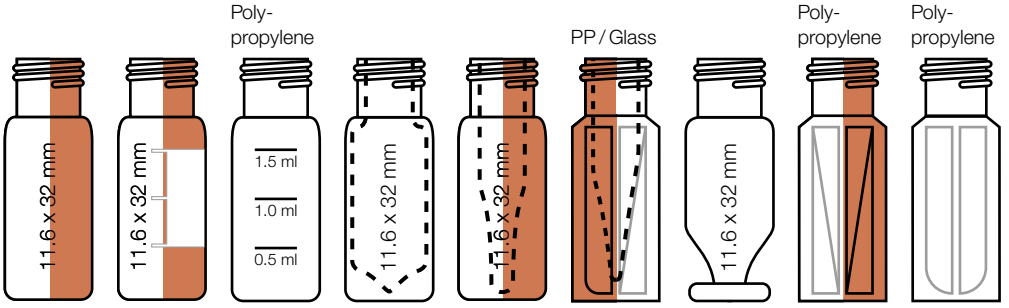								
70213 70213.2	702004 702893	702860	702282 702293	702283 702284	702500	702006	702007 702008	702135 702335	702088	702009 702172	702010

Vials N 10 Crimp neck vials N 11

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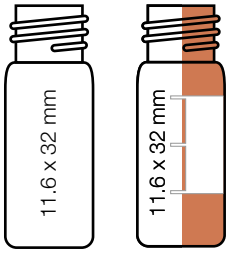		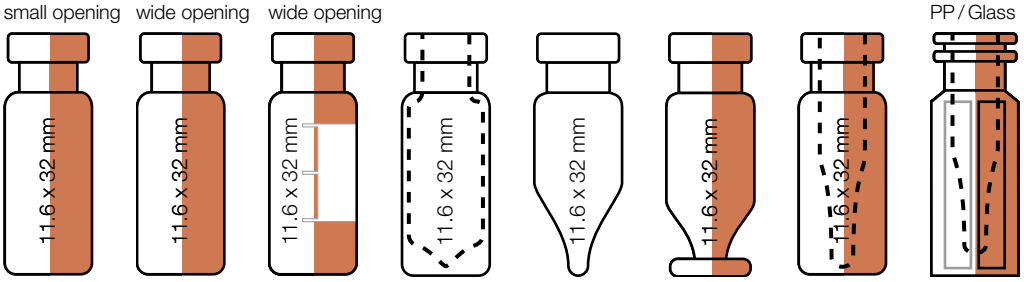							
702011	702012 702013	70201CG 70214CG	70201HP 70201HP.2	702885 702892	702888	702141	702015 702016	702891 702014	702134 702334

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

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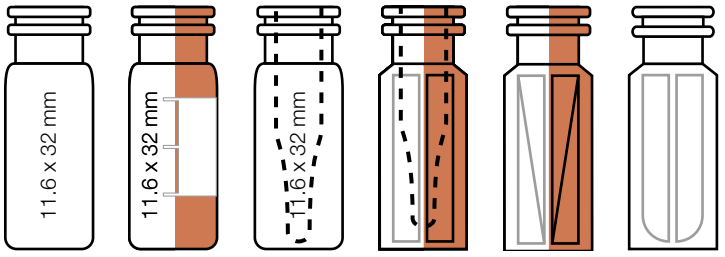						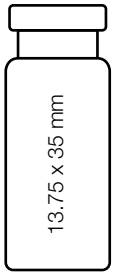	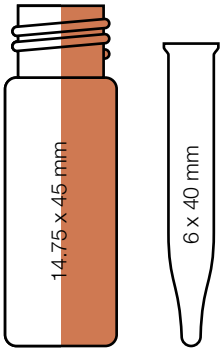	
702714	702713 702712	702709	702134 702334	702809 702173	702174	70203	702962 702973	702972

Real size drawings

Crimp neck vials N 8

Shell vials

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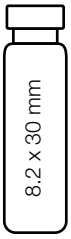
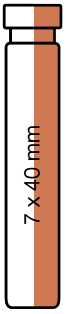
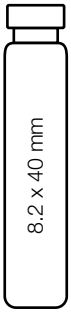
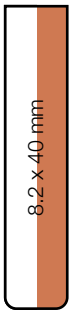
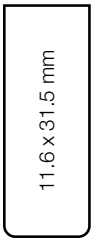
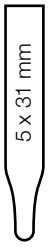
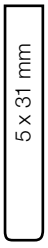
							
70286	70282	70251	70212.1	702002 702003	702880	70202.1 702017	702018

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

Pages 21, 28 for small opening vials				Pages 23, 27, 28, 33 for wide opening vials				
								
702968	702968.1	702824	702005	702813 702077 S	702716	702818 702818.1 S	702819	702825

Snap cap vials N 18 and N 22

Screw neck vials N 18

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	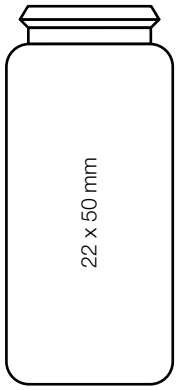	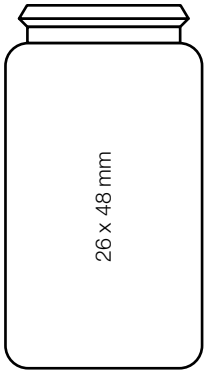	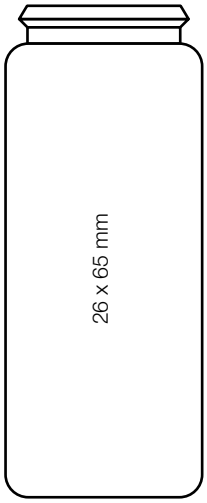	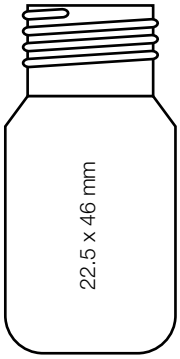	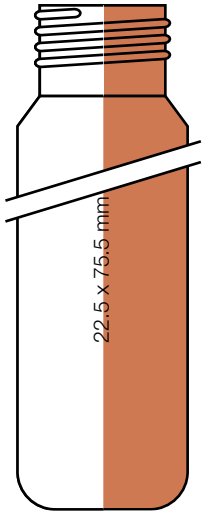
70271	70272	702019	70273	702866	702826 702826.2

Real size drawings

Crimp neck vials N 20: 5–10 mL

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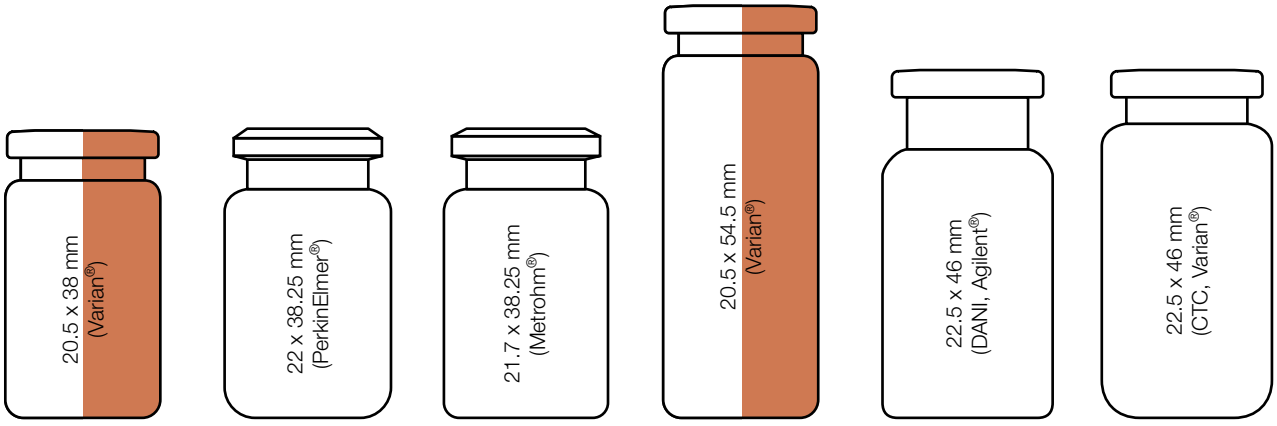

70204.36 70215.36	702917	702020	70205.36 70216.36	702918	702924

Crimp neck vials N 20: 20 mL

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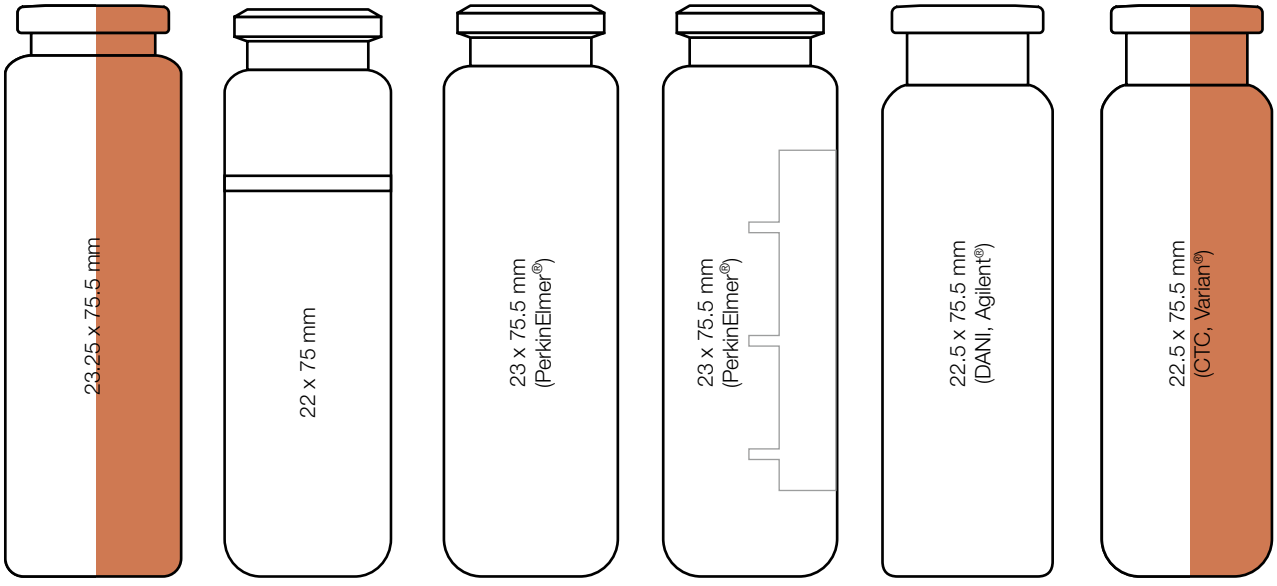

70206.36 70217.36	702086	70254	702540	702261	702263 702263.2

Real size drawings

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

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70210.36	70208.36	70209.1

Screw neck vials for storage of liquid samples

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N 15		N 18	N 20
16.6 x 61 mm	18.5 x 66 mm	20.6 x 71 mm	22.7 x 86 mm
702096 / 702311	70285 / 702097	702098	702099

Real size drawings

Screw neck vials N 24

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702021 / 702022	702132 / 702133	702023 / 702024	702074 / 702131

General remarks

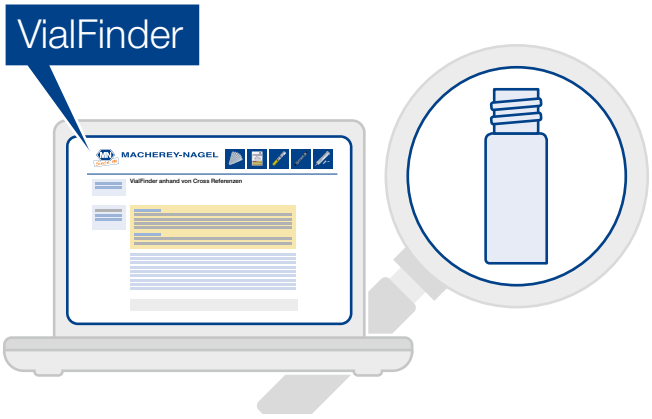
Interpretation of cross-references in the autosampler compatibility charts

Cross-references are intended for the translation of instrument manufacturers' article numbers into MACHEREY-NAGEL REF numbers. However, a 100 % match is not always possible. The indication "‡" behind a cross-reference implies that the appropriate MACHEREY-NAGEL product is an alternative product which – in spite of technical differences to the indicated product – is suitable for the application. We will be more than happy to explain to you the exact differences to the instrument manufacturer's product, in case there is any need. It may be quite possible that for one instrument manufacturer's product several MACHEREY-NAGEL products are indicated. In this case the most equivalent product is the one that has no additional remark "‡" . Should the instrument manufacturer's packaging unit diverge from ours, we indicate their packaging unit behind the article number after a "/". The same is valid, if the manufacturer has different article numbers for different packaging units of one and the same product. In case that you do not find a cross-reference, please kindly contact us under vials@mn-net.com. We will always try to find out, whether or not we can supply a similar product. We generally recommend to ask for cost-free samples for testing purposes, as even technically comparable products may differ in their optical appearance. We kindly ask for your understanding that we do not take over any guarantee for the correctness and completeness of the data indicated here.

Translation tool for cross-references: the VialFinder under *www.mn-net.com/vialfinder*

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

In case you cannot find your part number via the VialFinder, please send your inquiry by e-mail to vials@mn-net.com 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, which 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).

Website guide

Up-dated product range vials and caps:	*www.mn-net.com/vials*
VialFinder as translation tool for cross-references:	*www.mn-net.com/vialfinder*
General literature on chromatography products (PDF download):	*www.mn-net.com/chroma* → Customer services → Catalog download
Link to PDF download of decision tool for choosing the optimal crimping tool for your requirements	*www.mn-net.com/vials* → Vial accessories (yellow box on top of the chapter)
Link to PDF download of poster "Optimal crimping"	*www.mn-net.com/vials* → Vial accessories *(left pane)*
Instructions for manual crimping tools (PDF download):	*www.mn-net.com/manualcrimper (left pane)*
Instructions for electronic crimping tools (PDF download):	*www.mn-net.com/electroniccrimper (left pane)*
Current edition of the „Chroma-News" as well as their archive:	*www.mn-net.com/chroma (right pane)*

General remarks

Product literature

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

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

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.

Closure selection in GC / HPLC

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

Basically the following recommendations can be made:

- Due to the relatively thick and blunt HPLC needles, only Silicone / PTFE closures, either with or without slit, should be used in combination with them.
- Screw closures N 9 are universally suitable on most autosamplers, convenient in handling and available in a broad selection of different cap colors and septum materials. They fulfill all requirements with regard to tightness and analytical purity for GC as well as for HPLC. Due to the relatively thin septa penetration is safe and easy. Crimp closures N 11 are also universally suitable with regard to autosampler compatibility, however, they are not as safe and convenient in their closing technique as the screw closures N 9.
- Snap ring closures N 11 should only be used in HPLC, as the punctual compacting pressure of the septum against the vial rim by the four pins in the cap does not achieve the same level of tightness as the evenly applied pressure through a circular thread or by crimping.
- For sensitive analyses only high purity Silicone / PTFE closures can be used; if additionally there is a need for minimal coring during penetration, a PTFE / Silicone / PTFE septum (sandwich septum) is recommendable.
- Cap colors may be used for marking (sample marking / lab marking / shift marking). However, please consider that some autosamplers work with photocells which may not be able to recognize transparent caps.
- For sample storage closed top screw closures (without center hole) should be used. Generally, these also need an elastomeric liner for sealing vials with liquid samples tightly.
- The ability to penetrate a septum depends on the hardness and the total thickness of the septum. The hardness (durometer) is indicated in "° shore" . The higher the number, the harder the septum. For easily bending needles as well as for blunt needles with penetration problems soft and preferably thin septa should be chosen. This supports needle safety (clogging/bending of the needle) as well as reliability of the analysis (no contamination of the sample due to particles generated during penetration).
- Due to their artificially reduced cap height screw caps N 9 don't have a standardized thread design. Therefore, it is recommendable only to use vials and closures from one source of supply, in order to ensure a harmonious and tight matching of both components.
- Replacement septa are partially available, however, in case of manual assembly you have the risk of contamination with skin fat / sweat and of a possible wrong side orientation. Therefore we highly recommend only to use ready assembled closures, where the liner perfectly matches the cap and has been automatically inserted under strict hygienic conditions.
- Normally ready assembled closures should be suitable for all types of needles, provided the proper type of septum has been selected. Nevertheless, there might be cases where usage of bonded closures (cap and liner form an inseparable unit) can be recommendable. Example: blunt HPLC needle, however, due to the risk of sample loss / concentration changes no septa with slit can be used. In order to avoid that the unslit septum is pushed into the vial by the needle, you use a bonded closure with unslit septum.

General remarks

Septa guide

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

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General remarks

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

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- 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.

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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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