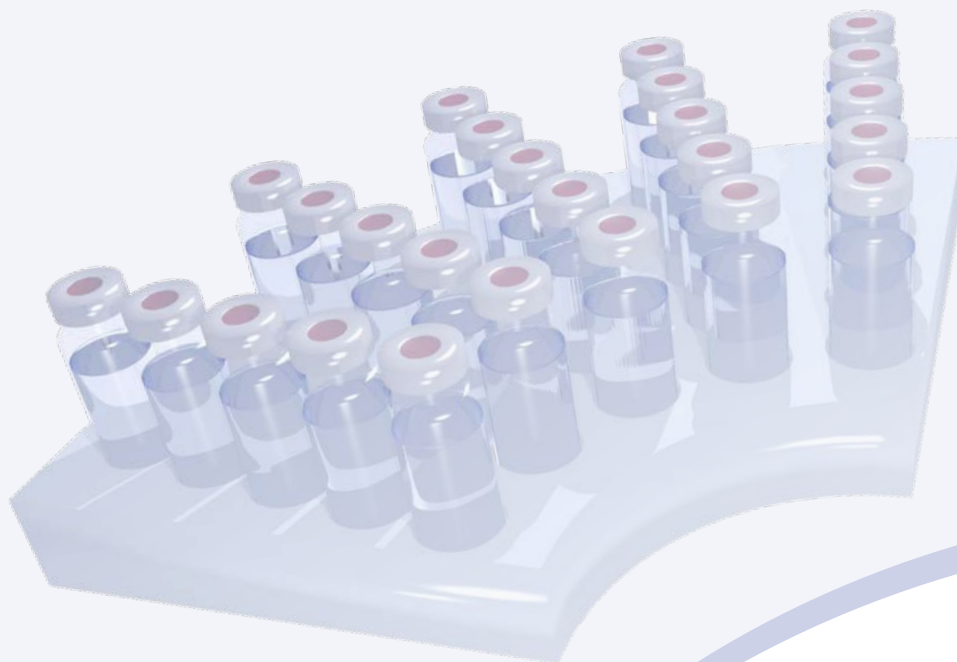


Chromatography

Vials and caps



Vials and inserts
Closures and septa
Accessories



Vials and caps from MACHEREY-NAGEL



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	General introduction of MACHEREY-NAGEL	3-5
	Suitable autosampler consumables by instrument manufacturer and application incl. cross-references where available (Agilent, CTC, Dionex, Knauer, PerkinElmer, Shimadzu, Thermo Scientific, Varian, VWR (Merck® / Hitachi), Waters®)	6-15
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- **The PDF data file of this brochure** can be downloaded from our website under www.mn-net.com
- **Prices** can be requested with your contact persons at MACHEREY-NAGEL
- **Technical support:** any technical questions can be forwarded to:
phone +49 24 21 969-334 e-mail: vials@mn-net.com
- **Samples** can be requested with your contact persons at MACHEREY-NAGEL
- **Product scope:** besides all products listed in this vial brochure, we additionally offer many more vials and caps. In case you cannot trace a product in here, please kindly ask your contact person at MACHEREY-NAGEL. Special production runs according to your specific requirements may be possible as well.



Germany and international

MACHEREY-NAGEL GmbH & Co. KG

Neumann-Neander-Str. 6-8
52355 Düren

phone +49 24 21 969-0
toll-free 0800 2616 000
fax +49 24 21 969-199 or -198
e-mail info@mn-net.com



USA

MACHEREY-NAGEL Inc.

2850 Emrick Blvd.
Bethlehem, PA 18020

phone +1 484 821 0984
toll-free 888-321-6224 (MACH)
fax +1 484 821 1272
e-mail sales-us@mn-net.com



France

MACHEREY-NAGEL EURL

1, rue Gutenberg · B.P. 135
67722 Hoerdt

phone +33 388 68 22 68
fax +33 388 51 76 88
e-mail sales-fr@mn-net.com



Switzerland

MACHEREY-NAGEL AG

Hirsackerstr. 7 · Postfach 255
4702 Oensingen

phone +41 62 388 55 00
fax +41 62 388 55 05
e-mail sales-ch@mn-net.com



Founding year

1911

Management board

Mrs. Carolin Wagner
(CEO in 4th generation of the German family enterprise)

Location

Düren (NRW, Germany) with two sites

- Factory space in Düren: 30,000 m²
- Production area 13,000 m²
- Storage space 11,000 m²
- Offices and laboratories 6,000 m² with a total of 40 labs



Company headquarters
with central warehouse,
commercial departments,
R&D Chromatography,
R&D Water analysis,
Production



Production facilities,
R&D Bioanalysis,
R&D Chromatography

Subsidiaries



Switzerland (1984)



France (1990)



USA (1998)

In addition, a globally operating network of distributors in more than 150 countries ensures worldwide availability of MN products.

Sales

> 100 Mio EUR

Employees

~ 500, with 10% Ph.D. scientists

Quality standard

EN ISO 9001:2008 (SY 60076689 0001; until 31.05.2017)

Delivery service

Dispatch of standard goods within 24 hours



MN product divisions



Chromatography



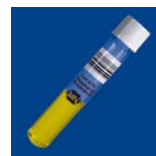
Bioanalysis



Filtration



Rapid tests



Water analysis

Chromatography product families



Vials and closures



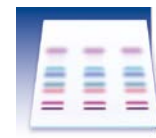
**HPLC columns
Adsorbents**



**GC columns
Reagents**



**SPE phases
Accessories**



TLC plates



Syringe filters

Summary of vials



GC and HPLC autosampler vials with screw neck N 8, N 9, N 10 and N 13, crimp neck N 8 and N 11 as well as snap ring vials N 11



Headspace screw neck vials N 18 and crimp neck vials N 20, TOC/VOC screw neck vials N 24



Storage vials for powdery samples (snap cap vials N 18 and N 22) as well as for liquid samples (screw neck vials from 2 mL up to 60 mL)



Other accessories (crimping tools, vial containers, GC injection port septa)

Specialties

Vials and closures can be supplied as:

- Individual components
- Vial Kits with 100 vials and closures, each (only available with 1.5 mL vials)
- Pre-sealed vial-closure combinations

Certificates of conformity

Can be requested for all vials and closures as needed

New products

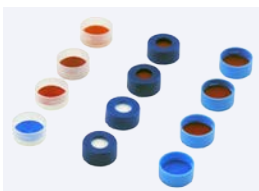


Polymagnetic screw closures

N 9 (for CTC GC PAL and corresponding autosamplers)

N 18 (for CTC Combi PAL and corresponding autosamplers)

- Safer and easier in handling than magnetic crimp caps N 11 and N 20
- No sharp-edged rims
- No corrosion
- N 9 as bonded polymagnetic closure for safe penetration (septum is firmly connected with the cap)



Hard and soft snap ring caps N 11 for HPLC

Hard snap ring caps (transparent or dark blue) for firm fit and very good sealing, however, somewhat stiffer in handling than the light blue soft snap ring caps. These are especially user-friendly when snapping or removing the caps.

Storage vials

for powdery samples (snap cap vials N 18 and N 22) as well as for liquid samples (screw neck vials with volumes from 2 mL up to 60 mL)



Novel screw closure N 24 with removable protection lid for environmental analysis









- Closed screw cap (storage) and open screw cap (for analysis) in one product
- Protection lid prevents any contamination of the septum in the penetration area
- Bonded septum for safe penetration
- Ideal for TOC and VOC analyses



Other new products

- Ergonomic crimping tools
- New range of premium HT injection port septa
- Crimp caps N 11 with Viton septa (not coated with PTFE)
- Crimp caps N 20 with septa silicone / FEP-/aluminium foil
- 20 mL amber crimp neck vials N 20 and 20 mL amber screw neck vials N 18 for CTC Combi PAL

Crimp neck vials N 8







70286	70282	70251	70212	70212.1	702002	702003	702880
							
0.2 mL	0.3 mL	0.8 mL	0.6 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	7 x 40 mm	8.2 x 40 mm
clear	clear	clear	clear	amber	clear	amber	clear
conical	round bottom	flat bottom	conical	conical	flat bottom	flat bottom	flat bottom
100 / PE bag	100 / PE bag	100 / carton	100 / PE bag	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 N 8 (small opening)

70213	70213.2	702004	702893	702860
				
1.5 mL	1.5 mL	1.5 mL	1.5 mL	1.1 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	amber	clear, label + scale	amber, label + scale	clear
flat bottom	flat bottom	flat bottom	flat bottom	conical
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PE bag

Inserts for screw neck vials N 8 (small opening)

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









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

Containers for screw neck vials N 8







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

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



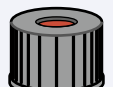




REF	Cap description	Septum description	Hardness	Thickness	Pack of
702067	 N 8 PP screw cap, black, center hole	Red Rubber / FEP colorless	45° shore A	1.3 mm	100 / PE bag
702068	 as above, but with closed top				
70245	 N 8 PP screw cap, black, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	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	 - (septas only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702070	 - (septas only)	Red Rubber / FEP colorless	45° shore A	1.3 mm	100 / PE bag
70248	 - (septas only)	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
702481	 - (septas only)	Silicone white / PTFE blue, slit	55° shore A	1.0 mm	100 / PE bag









Vial Kits screw neck N 8

Pack of 100 vials and 100 closures, each

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

Other Vial Kits on request

Screw neck vials (wide opening) and inserts N 9

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

702006	702007	702008	702088	702009
				
1.1 mL	0.2 mL	0.2 mL	1.1 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
clear	clear	amber	clear	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	conical with round pedestal glass plate	with inner cone
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PE bag












Polypropylene

Containers for screw neck vials N 9







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

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




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

N 9 septa for screw caps N 9

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


Bonded screw closures N 9

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

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

Bonded polymagnetic screw closure N 9








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

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702166	 N 9 polymagnetic bonded screw cap, gray, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag



Vial Kits screw neck N 9

Pack of 100 vials and 100 closures, each

Closure →				
	702287.1	702288.1	702732	702026 702027
Vial ↓				
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		








Other Vial Kits on request

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

Other pre-sealed vial-closure combinations on request

Screw neck vials (wide opening) and inserts N 10







702011	702012	702013	702813 silanized 702077	702716	702818 silanized 702818.1	702825
						
1.5 mL	1.5 mL	1.5 mL	0.2 mL	0.25 mL	0.1 mL	0.3 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
clear	clear, label + scale	amber, label + scale	clear	clear	clear	clear
flat bottom	flat bottom	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom
100 / PP box	100 / PP box	100 / PP box	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

Containers for screw neck vials N 10









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

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







Crimp neck vials N 11

70201CG	70214CG	70201HP	70201HP.2	702885 silanized 702075	702892 silanized 702076
Small opening vials		Wide opening vials			
					
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

702968	702968.1	702824	702005	702813 silanized 702077	702716	702818 silanized 702818.1	702825
Inserts for small opening vials				Inserts for wide opening vials			
							
0.1 mL	0.15 mL	0.1 mL	0.25 mL	0.2 mL	0.25 mL	0.1 mL	0.3 mL
5 x 31 mm	5 x 31 mm	5 x 29 mm	5 x 31 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm
clear	clear	clear	clear	clear	clear	clear	clear
conical, 15 mm tip	conical, 9 mm tip	with plastic spring	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

Crimp neck vials N 11 for small sample volumes

702888	702141	702015	702016	702891	702014
					
1.1 mL	1.1 mL	1.1 mL	1.1 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
clear	clear	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
100 / PP box	100 / PE bag	100 / PP box	100 / PP box	100 / PP box	100 / PP box

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
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 (aluminum, magnetic)	1 / box
735811	Decapping head for 11 mm crimp caps (aluminum, magnetic)	1 / box

Containers for crimp neck / snap ring vials N 11










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

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
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
702823		N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE blue, cross-slit	55° shore A	1.5 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
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

Vial Kits crimp neck N 11

Pack of 100 vials and 100 closures, each

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










Other Vial Kits on request

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


















Other pre-sealed vial-closure combinations on request

Snap ring vials (wide opening) and inserts N 11





702714	702713	702712	702813 silanized 702077	702716	702818 silanized 702818.1	702825	702709	702809
								
1.5 mL	1.5 mL	1.5 mL	0.2 mL	0.25 mL	0.1 mL	0.3 mL	0.2 mL	0.3 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear, label + scale	amber, label + scale	clear	clear	clear	clear	clear	transparent
flat bottom	flat bottom	flat bottom	conical, 15 mm tip	conical, 12 mm tip	with plastic spring	flat bottom	flat bottom, with integrated 0.2 mL insert	with inner cone
100 / PP box	100 / PP box	100 / PP box	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PP box	100 / PE bag

Polypropylene

Ready assembled snap ring closures N 11 (hard cap)

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









Ready assembled snap ring closures N 11 (soft cap)

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




Vial Kits snap ring N 11

Pack of 100 vials and 100 closures, each

Closure →				
	702710	702064	702731	702718
Vial ↓				
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


Other Vial Kits on request

Crimp neck vials N 13



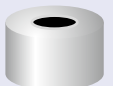

	70203
	2 mL
	13.75 x 35 mm
	clear, flat bottom
	100 / carton

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

Containers for crimp and screw neck vials N 13

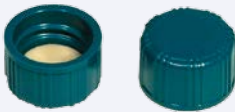











REF	Description	Pack of
702515	49 position container blue for crimp and screw neck vials N 13, 130 x 130 x 50 mm, with transparent lid (suitable for freezers)	1







Screw neck vials and insert N 13

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				
70260		- (septum only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702053		- (septum only)	Red Rubber / FEP colorless	40° shore A	1.5 mm	100 / PE bag
702292		- (septum only)	Silicone white / PTFE red	40° shore A	1.3 mm	100 / PE bag




Shell vials (fire-polished neck) N 8 + N 12 with PE plugs

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
N 8 clear, flat bottom	N 8 amber, flat bottom	N 12 clear, flat bottom
100 / PP box	100 / PP box	100 / PP box
To be used with N 8 PE plugs 702807	To be used with N 8 PE plugs 702807	To be used with N 12 PE plugs 702054
		
100 / PE bag	100 / PE bag	100 / PE bag

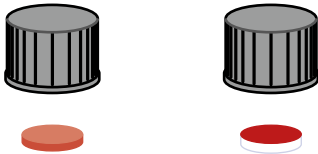
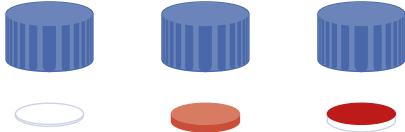
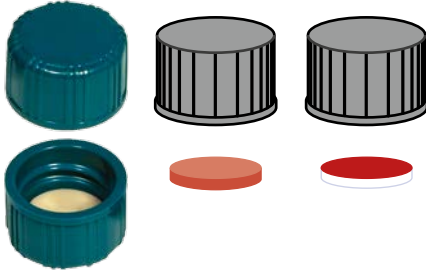
Snap cap vials (for storage of powdery samples) N 18 + N 22 with PE snap caps

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
N 18 clear, 3 rd hydrol. class, flat bottom	N 18 clear, 3 rd hydrol. class, flat bottom	N 22 clear, 3 rd hydrol. class, flat bottom	N 22 clear, 3 rd hydrol. class, flat bottom
100 / carton	100 / carton	100 / carton	100 / carton
To be used with N 18 PE snap cap 70274	To be used with N 18 PE snap cap 70274	To be used with N 22 PE snap cap 70275	To be used with N 22 PE snap cap 70275
			
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

Screw neck vials N 8, N 9 and N 13 for storage of liquid samples

70213	70213.2	702004	702893	702282	702293	702283	702284	702962	702973
				silanized 702078		silanized 702079			
N 8 small opening, 8-425 thread				N 9 wide opening, short thread				N 13 13-425 thread	
									
1.5 mL 11.6 x 32 mm				1.5 mL 11.6 x 32 mm				4 mL 14.75 x 45 mm	
clear, flat bottom		amber, flat bottom, label + scale		clear, flat bottom		amber, flat bottom, label + scale		clear, flat bottom amber, flat bottom	
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

Closed top screw closures N 8, N 9 and N 13



702068	702066	702032	702033	702034	702103	702051	702052
N 8		N 9			N 13		
							
N 8 PP screw cap, black, closed top	N 8 PP screw cap, black, closed top	N 9 PP screw cap blue, closed top	N 9 PP screw cap blue, closed top	N 9 PP screw cap blue, closed top	N 13 screw cap, green, closed top	N 13 PP screw cap, black, closed top	N 13 PP screw cap, black, closed top
Red Rubber / FEP colorless, 45° shore A, 1.3 mm	Silicone white / PTFE red, 45° shore A, 1.3 mm	PTFE virginal, white, 53° shore D, 0.25 mm	Red Rubber / FEP colorless, 45° shore A, 1.0 mm	Silicone white / PTFE red, 45° shore A, 1.0 mm	F217 white / PTFE beige (firmly fixed), 1.5 mm	Red Rubber / FEP colorless, 40° shore A, 1.5 mm	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

For screw neck vials with volumes larger than 24 mL please see page 40.

Screw neck vials N 15, N 18 and N 20 for storage of liquid samples

702096	702311	70285	702097	702098	702099
N 15 15-425 thread				N 18 18-400 thread	N 20 20-400 thread
					
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 / carton	100 / carton	100 / carton	100 / carton	100 / PP box	100 / PP box


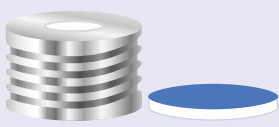
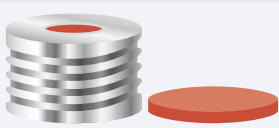


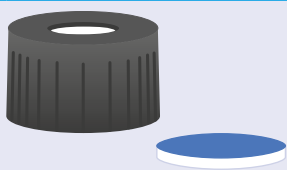
Closed top screw closures N 15, N 18 and N 20

702104	702104	702105	702106
N 15 15-425 thread		N 18 18-400 thread	N 20 20-400 thread
			
N 15 screw cap, green, closed top	N 15 screw cap, green, closed top	N 18 screw cap, green, closed top	N 20 screw cap, green, closed top
F217 white / PTFE beige (firmly fixed), 1.5 mm	F217 white / PTFE beige (firmly fixed), 1.5 mm	F217 white / PTFE beige (firmly fixed), 1.5 mm	F217 white / PTFE beige (firmly fixed), 1.5 mm
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag







Headspace screw neck vials N 18

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
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
702167 	N 18 polymagnetic screw cap, gray, center hole	Silicone white / PTFE blue	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 5 mL	PerkinElmer 6 mL	Metrohm 5 mL	Varian 10 mL	DANI, Agilent 10 mL	CTC, Varian 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, bev. HS crimp neck
100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box	100 / PP box

Crimp neck vials N 20: 20 mL

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

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

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

Crimping tools N 20

REF	Type of crimping tool	Pack of
735120	Manual crimper (standard), height adjustable, for 20 mm aluminium crimp caps	1 / 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
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 (aluminum, magnetic, bi-metal)	1 / box
735820	Decapping head for 20 mm crimp caps (aluminum, magnetic, bi-metal)	1 / box





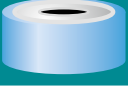




















Ready assembled crimp closures, plain crimp caps and single septa N 20

REF	Cap description	Septum description	Hardness	Thick-ness	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
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, un-assembled (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
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 *	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
 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, un-assembled (separate parts)	37° shore A		100 each / PE bags
70236.1	 N 20 aluminium center tear off cap, silver (no liner)	-	-	-	100 / PE bag



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

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










REF	Cap description	Septum description	Hardness	Thick-ness	Pack of
 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, un-assembled (separate parts)	37° shore A		100 each / PE bags
702805	 N 20 aluminium complete tear off cap, silver (no liner)	-	-	-	100 / PE bag
 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	45° shore A	3 mm	100 / PE bag
702837	 N 20 bi-metal crimp cap, blue/silver, center hole	Silicone white / PTFE beige	45° 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	45° shore A	3 mm	100 / PE bag
702808	 N 20 magnetic crimp cap, silver, 8 mm center hole (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	45° shore A	3 mm	100 / PE bag
70278	 - (septa only)	Silicone white / PTFE beige	45° shore A	3 mm	100 / PE bag
70279	 - (septa only)	Silicone white / Aluminium foil silver	50° shore A	3 mm	100 / PE bag

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

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

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


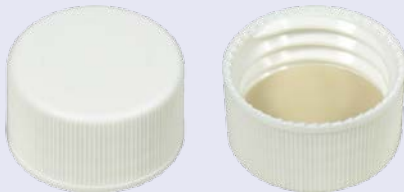


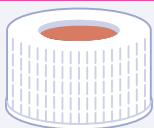
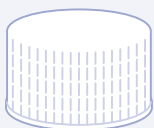
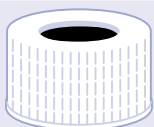
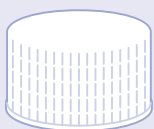
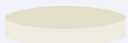
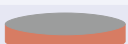


REF	Description	Pack of
702516	25 position container blue for 10 mL + 20 mL screw neck vials N 18 and crimp neck vials N 20, 130 x 130 x 80 mm, with transparent lid (suitable for freezers)	1

Screw neck vials N 24 (EPA)

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

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

REF	Cap description	Septum descript.	Hardness	Thickn.	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	 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 removable 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



Tips for correct crimping

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

Basically the following recommendations can be made:

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



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

Our program comprises the following types of crimping tools:

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

These products are listed in the chapter of the respective crimp neck diameter.



Real size drawings

Screw neck vials N 8

Screw neck vials N 9

70213	702004	702860	702282	702283	702006	702007	702088	702009
70213.2	702893		702293	702284		702008		
Page 17			Page 19					

Vials N 10

Crimp neck vials N 11

		small opening	wide opening	wide opening				
702011	702012	70201CG	70201HP	702885	702888	702141	702015	702891
	702013	70214CG	70201HP.2	702892			702016	702014
Page 22		Pages 23, 24						

Snap ring vials N 11

Crimp and screw neck vials N 13

702714	702713	702709	702809
	702712		
Page 27			

70203	702962
	702973
Pages 29, 30	



Crimp neck vials N 8

70286	70282	70251	70212 70212.1	702002 702003	702880

Page 16

Shell vials

70202.1 702017	702018

Page 31

Inserts for vials N 8, N 9, N 10, N 11 and N 13

for small opening vials				for wide opening vials				
702968	702968.1	702824	702005	702813 702077 ^s	702716	702818 702818.1 ^s	702825	702972

Pages 17, 23 Pages 19, 22, 23, 27 (s: silanized) Page 30

Snap cap vials N 18 and N 22

70271	70272	702019	70273

Page 31

Screw neck vials N 18

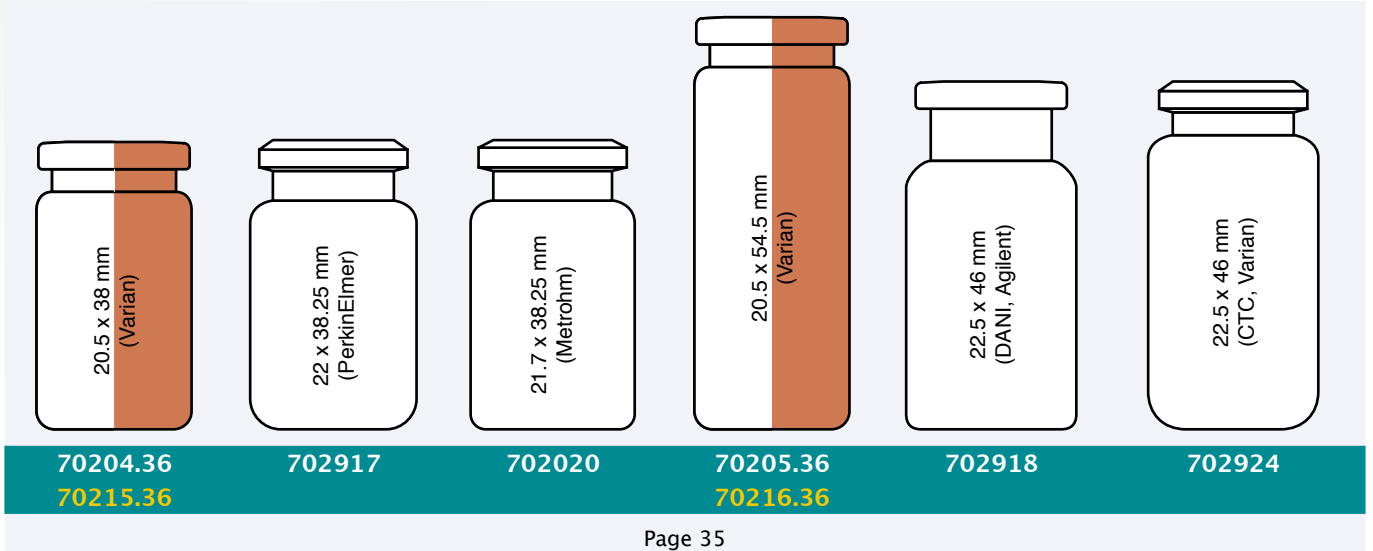
702866	702826 702826.2

Page 34

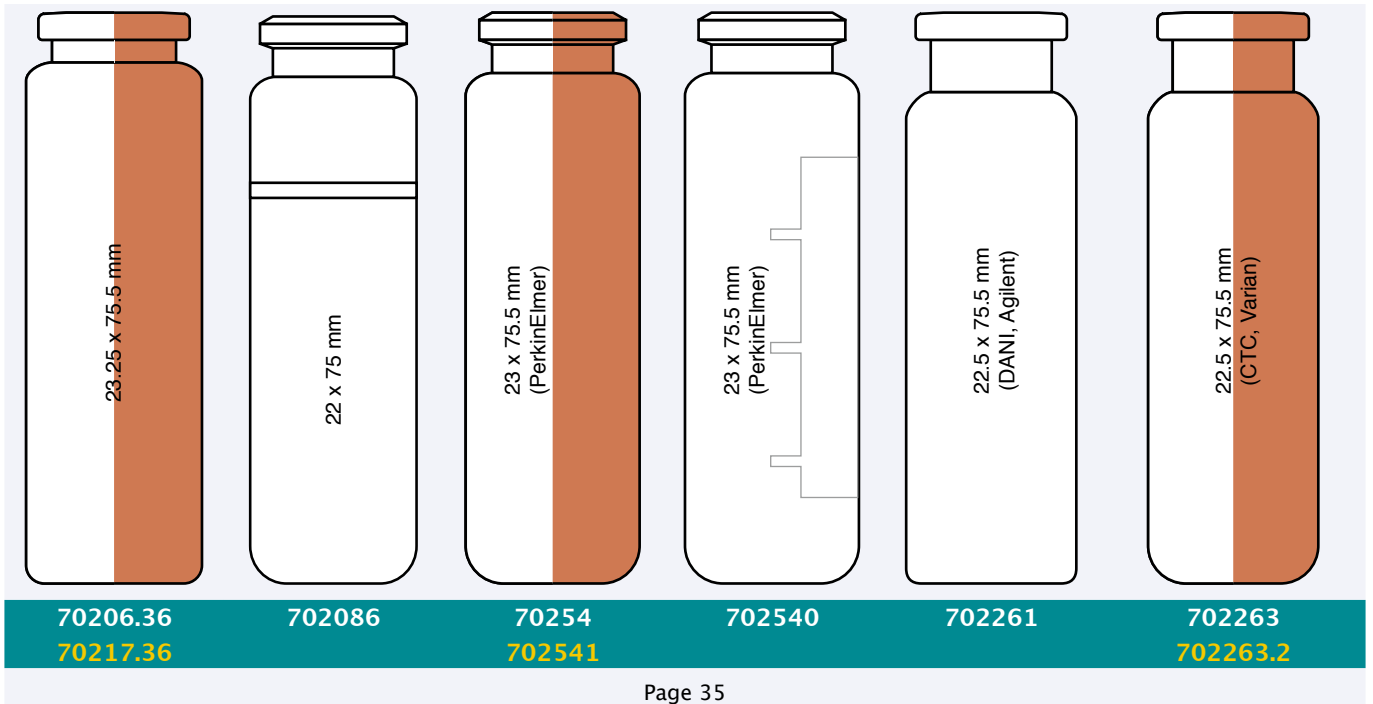


Real size drawings

Crimp neck vials N 20: 5-10 mL

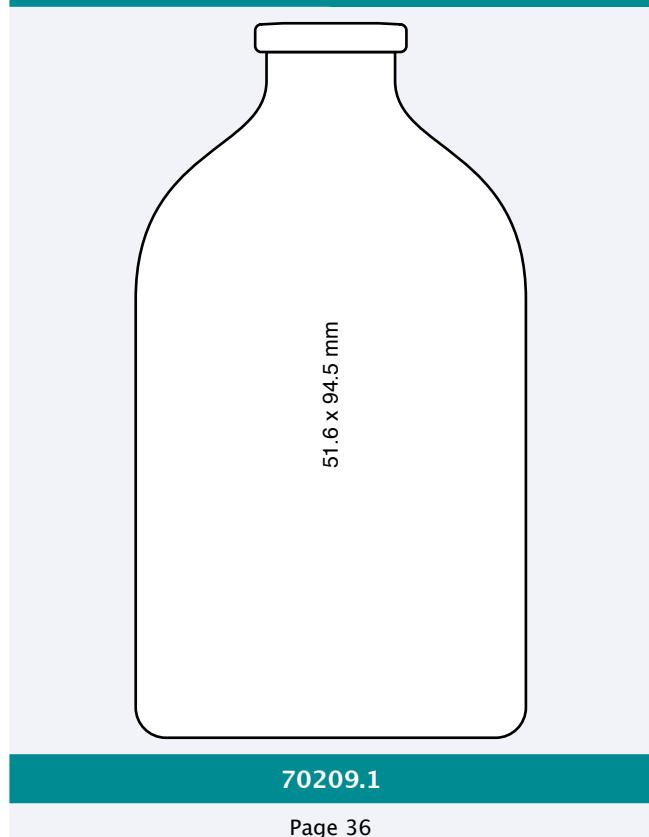
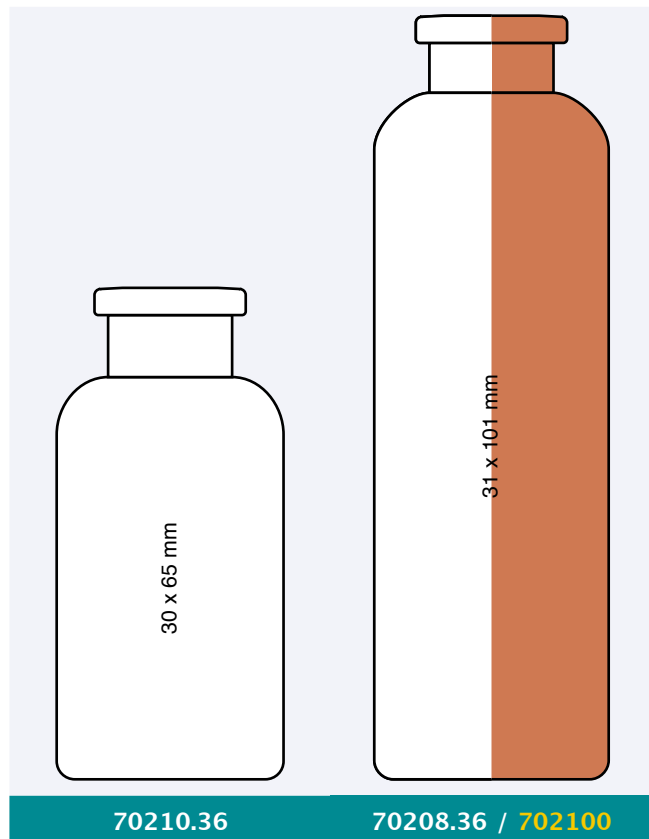


Crimp neck vials N 20: 20 mL





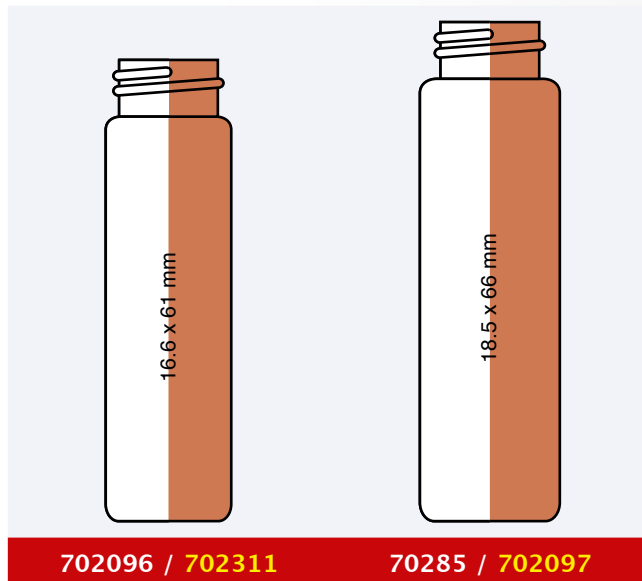
Crimp neck vials N 20: 25, 50, 100 mL



Page 36

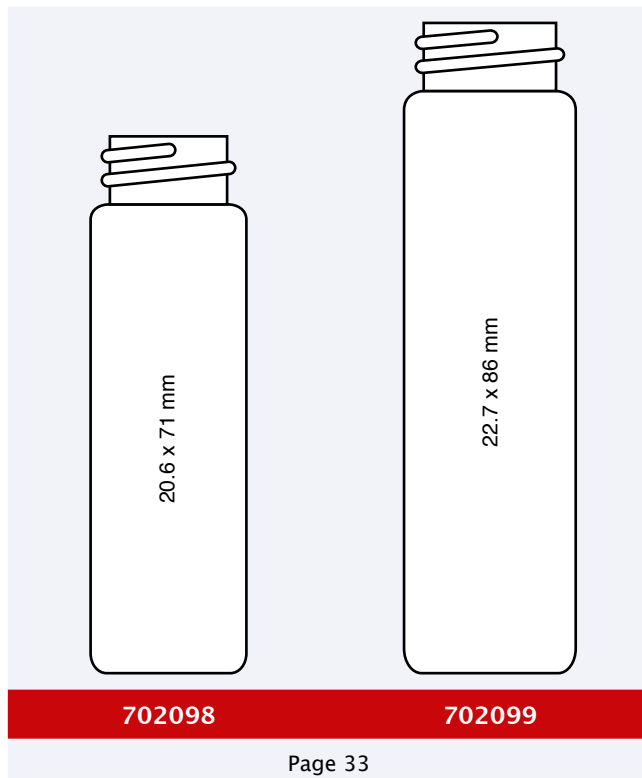
Screw neck vials for storage of liquid samples

N 15



N 18

N 20

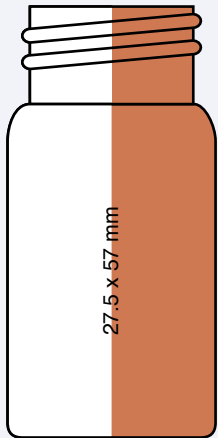


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Real size drawings

Screw neck vials N 24



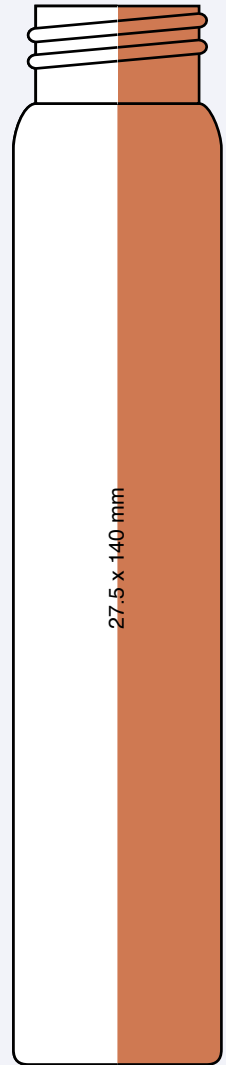
702021
702022



702132
702133



702023
702024



702074
702131

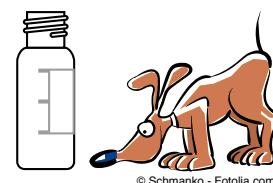


Interpretation of cross-references in the autosampler compatibility charts

Cross-references are intended for the translation of instrument manufacturers' article numbers to MACHEREY-NAGEL REF numbers. However, a 100% match is not always possible. The indication "‡" behind a cross-reference implies that the appropriate MACHEREY-NAGEL product is an alternative product which – in spite of technical differences to the indicated product – is suitable for the application. We will be more than happy to explain to you the exact differences to the instrument manufacturers' product, in case there is any need. It may be quite possible that for one instrument manufacturer's product several MACHEREY-NAGEL products are indicated. In this case the most equivalent product is the one that has no additional 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 of 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 world-wide. 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 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, realistic usable volume in the upper range (e.g., 1.8 mL instead of 1.5 mL).

Samples for evaluation

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

Website guide

Up-dated product range vials and caps:

VialFinder as translation tool for cross-references:

General literature on chromatography products (PDF download):

Instructions for manual crimping tools (PDF download):

Instructions for electronic crimping tools (PDF download):

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

www.mn-net.com/vials

www.mn-net.com/vialfinder

www.mn-net.com/chroma

→ Customer services → Catalog download

www.mn-net.com/manualcrimper
(left pane)

www.mn-net.com/electroniccrimper
(left pane)

www.mn-net.com/chroma (right pane)



General remarks

Product literature

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

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

Closure selection in GC / HPLC

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

Basically the following recommendations can be made:

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





Septa guide

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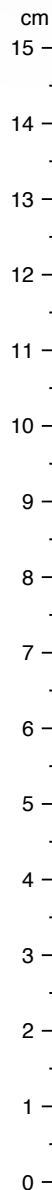
MACHEREY-NAGEL does not assume any responsibility for damages due to improper application of our products in other fields of application.

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

General remarks

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

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Vials and caps

Local distributor



as individual components
as Vial Kits
as pre-sealed vials

VialsCat EN2/S/0/06.14 PD
Printed in Germany
KATEN200010

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MACHEREY-NAGEL



MACHEREY-NAGEL GmbH & Co. KG · Neumann-Neander-Str. 6-8 · 52355 Düren · Germany

Germany

and international:

Tel.: +49 24 21 969-0

Fax: +49 24 21 969-199

E-mail: info@mn-net.com

Switzerland:

MACHEREY-NAGEL AG

Tel.: +41 62 388 55 00

Fax: +41 62 388 55 05

E-mail: sales-ch@mn-net.com

France:

MACHEREY-NAGEL EURL

Tel.: +33 388 68 22 68

Fax: +33 388 51 76 88

E-mail: sales-fr@mn-net.com

USA:

MACHEREY-NAGEL Inc.

Tel.: +1 484 821 0984

Fax: +1 484 821 1272

E-mail: sales-us@mn-net.com



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