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Columns and supplies



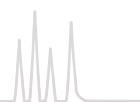
MACHEREY-NAGEL

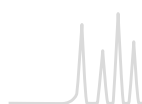
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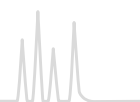
Vials and caps





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Technical data of vials

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). For suitability of certain vial types on instruments of the most important manufacturers please refer to the autosampler compatibility list at the end of this chapter.

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.

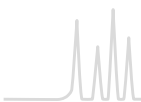
Basically the following recommendations can be made:

- 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.



- 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.
- The following table shows the different physical and chemical properties of the various elastomeric septa materials:



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

Certificates

Upon request we can issue (batch related) certificates of conformity for all vials, inserts and closures, if this is required for your own ISO documentation.

Samples

Sample packs of all vials and closures can be requested at any time. The sample packs contain 5 pieces of the respective product. These can be requested cost-free with the REF number of the respective product plus the addition ".MUSTER" (e.g., 1 x 70201HP.MUSTER = 1 sample pack with five vials of 70201HP).



Example for a sample pack with five vials



Example for a sample pack with five screw closures

Packaging



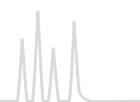
Vials: normally packed with 100 pieces in a PP box, bottom part being shrink-wrapped



Closures: normally packed with 100 pieces in a resealable PE zip lock bag



Vial Kits with 100 vials and closures each (for all vials 11.6 x 32 mm)



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

Link to the PDF download: www.mn-net.com/vials

Chromatography catalog (English): KATEN200001

Link to the PDF download: www.mn-net.com → Chromatography → Customer Services → Catalog download

Poster autosampler vials and caps (English): KATEN200086

Brochure crimping tools (English): KATEN200100

Link to the PDF download: www.mn-net.com/vials → Vial accessories

Poster "Optimal crimping" (German/English): KATDE/EN200153

Link to the PDF download: www.mn-net.com/vials → Vial accessories

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

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)

Decision tool for selecting the most optimal crimping tool for your own user profile (PDF download):

www.mn-net.com/vials → Vial accessories (containers, crimping tools) → blue marked link to PDF Download in the yellow box on top of the section

Translation tool for cross-references: the VialFinder at 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.



Miscellaneous

Should you need more information concerning this product range, you can ask for our separate brochure "Vials and caps" (KATEN200010), which – among others – features 1:1 drawings of all glass products.

Except where explicitly mentioned, septa are assembled ready to use. Septa beneath or beside a cap are shown for illustration purposes only, and they are pictured upside down.

All drawings in this chapter are scale 1:2.

General remarks

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

Contacts

Aside from your known contacts of our sales team you can also contact product management for technical questions at: vials@mn-net.com

Crimp neck vials and caps N 8



Crimp neck vials and caps N 8

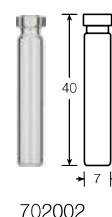
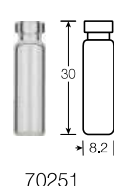
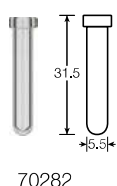
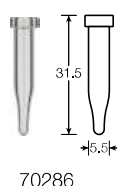


★ Key features

- 0.2–0.8 mL usable volume
- Adapter required for use in an autosampler
- Available with flat, round or conical bottom
- Economic closure versions: three-layer septum Natural rubber / Butyl / TEF or two-layer septum Red Rubber / FEP
- For more demanding analyses: high purity Silicone / PTFE septa

Ordering information

Crimp neck vials N 8



Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, conical	0.2 mL	5.5 x 31.5 mm	100	70286
Clear, round bottom	0.3 mL	5.5 x 31.5 mm	100	70282
Clear, flat bottom	0.8 mL	8.2 x 30 mm	100	70251
Clear, flat bottom	0.7 mL	7 x 40 mm	100	702002

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

Cap description	Septa description	Thickness	Pack of	REF
N 8 aluminium crimp cap, silver, center hole	PTFE virginal, white	0.25 mm	100	70283
N 8 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	1.0 mm	100	70252.1
N 8 aluminium crimp cap, silver, center hole	Red Rubber / FEP colorless	1.0 mm	100	702025
N 8 aluminium crimp cap, silver, center hole	Silicone white / PTFE red	1.0 mm	100	70289
N 8 aluminium crimp cap, silver, center hole	PTFE red / Silicone white / PTFE red	1.0 mm	100	702878
N 8 aluminium crimp cap, silver, center hole	no liner	–	100	702800

Crimping tools N 8

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



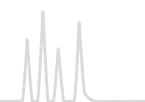
Manual crimper (standard)



Manual ergonomic crimper



Screw neck vials and caps N 8



Screw neck vials and caps N 8

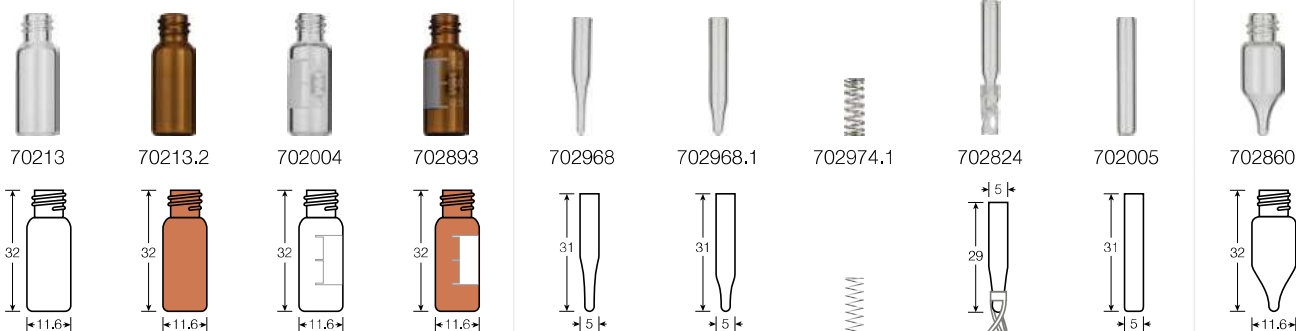


★ Key features

- Are among the oldest vial types for HPLC and GC (besides crimp neck vials N 11)
- More and more replaced by screw neck vials N 9, which are easier to fill due to the wide opening compared to screw neck vials N 8 with small opening
- Due to the cap design not universally usable on all autosamplers in GC and HPLC – however, often used on instruments of VWR (Merck®) / Hitachi, Varian®, Knauer, Gilson®, Shimadzu® and others
- In combination with closed top screw closures also used for sample storage (see page 120)
- Now also available as practical Vial Kits with 100 vials and closures each

Ordering information

Screw neck vials N 8, small opening (8-425 thread), and compatible inserts



Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	1.5 mL	11,6 x 32 mm	100	70213
Amber, flat bottom	1.5 mL	11,6 x 32 mm	100	70213.2
Clear, flat bottom, label and scale	1.5 mL	11,6 x 32 mm	100	702004
Amber, flat bottom, label and scale	1.5 mL	11,6 x 32 mm	100	702893
Insert for small opening vials, clear, conical, 15 mm tip	0.1 mL	5 x 31 mm	100	702968*
Insert for small opening vials, clear, conical, 9 mm tip	0.15 mL	5 x 31 mm	100	702968.1*
Metal spring for conical inserts 5 x 31 mm	–	–	100	702974.1
Insert for small opening vials, clear, with plastic spring	0.1 mL	5 x 29 mm	100	702824
Insert for small opening vials, clear, flat bottom	0.25 mL	5 x 31 mm	100	702005
Micro-vial, clear, conical	1.1 mL	11,6 x 32 mm	100	702860

* Optionally you may use metal springs 702974.1 in combination with these products to push them up in the vial.

Screw neck vials and caps N 8



Ordering information

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

							
702067	702068	70245	702066	702437	702069	70249	70250
Cap description	Septa description			Thickness	Pack of	REF	
N 8 PP screw cap, black, center hole	Red Rubber / FEP colorless			1.3 mm	100	702067	
as above, but with closed top	Red Rubber / FEP colorless			1.3 mm	100	702068	
N 8 PP screw cap, black, center hole	Silicone white / PTFE red			1.3 mm	100	70245	
as above, but with closed top	Silicone white / PTFE red			1.3 mm	100	702066	
N 8 PP screw cap, black, center hole	Silicone white / PTFE blue, slit			1.0 mm	100	702437	
N 8 PP screw cap, black, center hole	PTFE red / Silicone white / PTFE red			1.0 mm	100	702069	
N 8 PP screw cap, black, center hole	no liner			—	100	70249	
as above, but with closed top	no liner			—	100	70250	

N 8 Septa for screw caps N 8

Material	Illustration	Thickness	Pack of	REF
Septum N 8, PTFE virginal, white		0.25 mm	100	70261
Septum N 8, Red Rubber / FEP colorless		1.3 mm	100	702070
Septum N 8, Silicone white / PTFE red		1.3 mm	100	70248
Septum N 8, Silicone white / PTFE blue, slit		1.0 mm	100	702481

Vial Kits screw neck N 8

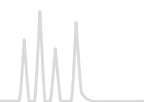
Packs of 100 vials and 100 closures, each

Closure →				
		70245	702437	702067
				
Vial ↓				
70213:	702238	702247	702246	
1.5 mL, clear, flat bottom				
70213,2:	702249	702251	702248	
1.5 mL, amber, flat bottom				
Other Vial Kits on request.				





Screw neck vials and caps N 9



Screw neck vials and caps N 9

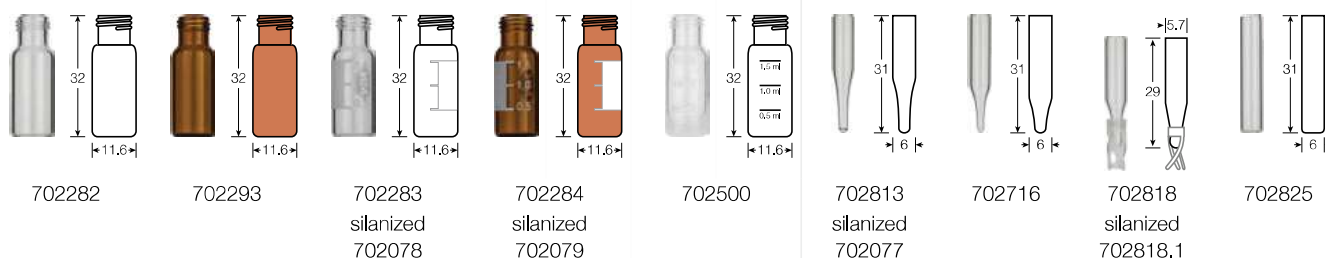


★ Key features

- Can be used on almost all HPLC and GC autosamplers
- Large range of vials and closures
- Also available as bonded closures (advantage: thick (blunt) HPLC needles cannot push the septum into the vial)
- Also available as convenient Vial Kits with 100 vials and 100 caps and as presealed vial-closure combinations
- Now also 1.5 mL polypropylene vials N 9 for special applications (e.g., IC, CE, etc.)

Ordering information

Screw neck vials N 9, wide opening (short thread), and compatible inserts



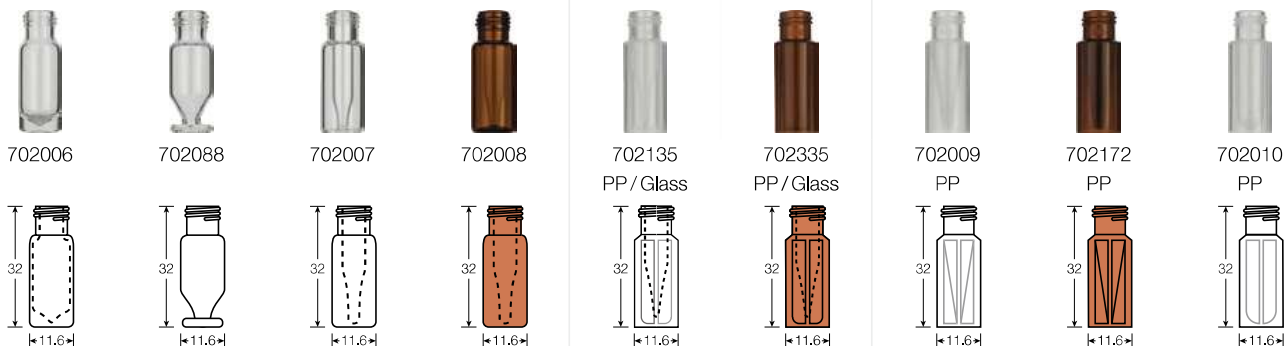
Type of vial	Usable volume	(Illustrations scale 1:2)		Pack of	REF
		OD x height			
Clear, flat bottom	1.5 mL	11.6 x 32 mm		100	702282
Amber, flat bottom	1.5 mL	11.6 x 32 mm		100	702293
Clear, flat bottom, label and scale	1.5 mL	11.6 x 32 mm		100	702283
as above, silanized	1.5 mL	11.6 x 32 mm		100	702078
Amber, flat bottom, label and scale	1.5 mL	11.6 x 32 mm		100	702284
as above, silanized	1.5 mL	11.6 x 32 mm		100	702079
Polypropylene, transparent, with filling lines	1.5 mL	11.6 x 32 mm		100	702500
Insert for wide opening vials, clear, conical, 15 mm tip	0.2 mL	6 x 31 mm		100	702813
as above, silanized	0.2 mL	6 x 31 mm		100	702077
Insert for wide opening vials, clear, conical, 12 mm tip	0.25 mL	6 x 31 mm		100	702716
Insert for wide opening vials, clear, with plastic spring	0.1 mL	5.7 x 29 mm		100	702818
as above, silanized	0.1 mL	5.7 x 29 mm		100	702818.1
Insert for wide opening vials, clear, flat bottom	0.3 mL	6 x 31 mm		100	702825

Screw neck vials and caps N 9



Ordering information

Screw neck micro-vials N 9, wide opening (short thread)



Type of vial	Usable volume	OD x height (Illustrations scale 1:2)	Pack of	REF
Micro-vial, clear, 15 µL funnel in solid glass bottom	1.1 mL	11.6 x 32 mm	100	702006
Micro-vial, clear, conical, with round pedestal glass plate	1.1 mL	11.6 x 32 mm	100	702088
Micro-vial, clear, with integrated 0.2 mL insert	0.2 mL	11.6 x 32 mm	100	702007
Micro-vial, amber, with integrated 0.2 mL insert	0.2 mL	11.6 x 32 mm	100	702008
Micro-vial, polypropylene, transparent, with integrated 0.2 mL glass insert, conical	0.2 mL	11.6 x 32 mm	100	702135*
Micro-vial, polypropylene, amber, with integrated 0.2 mL glass insert, conical	0.2 mL	11.6 x 32 mm	100	702335*
Micro-vial, polypropylene, transparent, with inner cone	0.3 mL	11.6 x 32 mm	100	702009
Micro-vial, polypropylene, amber, with inner cone	0.3 mL	11.6 x 32 mm	100	702172
Micro-vial, polypropylene, transparent, with round bottom insert	0.7 mL	11.6 x 32 mm	100	702010

* upon request also available with an integrated silanized glass insert

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

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

Further pre-assembled vial-insert combinations on request

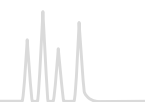
Bonded screw closures N 9 (septum firmly connected with the cap; cannot be removed)



Cap description	Septa description	Thickness	Pack of	REF
N 9 PP bonded screw cap, blue, center hole	Red Rubber / TEF colorless	1.0 mm	100	702028
N 9 PP bonded screw cap, blue, center hole	Silicone beige / PTFE white	1.3 mm	100	702026
N 9 PP bonded screw cap, blue, center hole	Silicone beige / PTFE white, slit	1.3 mm	100	702027



Screw neck vials and caps N 9



Ordering information

Ready assembled screw closures N 9

		702029			702031			702032
Cap description			Septa description			Thickness	Pack of	REF
N 9 PP screw cap, transparent, center hole			PTFE virginal, white			0.25 mm	100	702029
N 9 PP screw cap, blue, center hole			PTFE virginal, white			0.25 mm	100	702031
N 9 PP screw cap blue, closed top			PTFE virginal, white			0.25 mm	100	702032
		702030			702732			702080
		702033			702081			702082
		702147			702083			702107
Cap description			Septa description			Thickness	Pack of	REF
N 9 PP screw cap, transparent, center hole			Red Rubber / FEP colorless			1.0 mm	100	702030
N 9 PP screw cap, blue, center hole			Red Rubber / FEP colorless			1.0 mm	100	702732
N 9 PP screw cap, black, center hole			Red Rubber / FEP colorless			1.0 mm	100	702080
N 9 PP screw cap, red, center hole			Red Rubber / FEP colorless			1.0 mm	100	702081
N 9 PP screw cap, green, center hole			Red Rubber / FEP colorless			1.0 mm	100	702082
N 9 PP screw cap, yellow, center hole			Red Rubber / FEP colorless			1.0 mm	100	702147
N 9 PP screw cap blue, closed top			Red Rubber / FEP colorless			1.0 mm	100	702033
		702287			702287.1			702036
		702155			702034			702037
		702288			702288.1			702039
		702286			702035			702084
		702158			702085			702159
Cap description			Septa description			Thickness	Pack of	REF
N 9 PP screw cap, transparent, center hole			Silicone white / PTFE red			1.0 mm	100	702287
N 9 PP screw cap, blue, center hole			Silicone white / PTFE red			1.0 mm	100	702287.1
N 9 PP screw cap, black, center hole			Silicone white / PTFE red			1.0 mm	100	702036
N 9 PP screw cap, red, center hole			Silicone white / PTFE red			1.0 mm	100	702037
N 9 PP screw cap, green, center hole			Silicone white / PTFE red			1.0 mm	100	702038
N 9 PP screw cap, yellow, center hole			Silicone white / PTFE red			1.0 mm	100	702107
N 9 magnetic screw cap, silver, center hole			Silicone white / PTFE red			1.0 mm	100	702155
N 9 PP screw cap blue, closed top			Silicone white / PTFE red			1.0 mm	100	702034
		702288			702288.1			702040
		702286			702035			702084
		702158			702085			702159
Cap description			Septa description			Thickness	Pack of	REF
N 9 PP screw cap, transparent, center hole			PTFE red / Silicone white / PTFE red			1.0 mm	100	702286
N 9 PP screw cap, blue, center hole			PTFE red / Silicone white / PTFE red			1.0 mm	100	702035
N 9 PP screw cap, black, center hole			PTFE red / Silicone white / PTFE red			1.0 mm	100	702158
N 9 PP screw cap, red, center hole			PTFE red / Silicone white / PTFE red			1.0 mm	100	702084
N 9 PP screw cap, green, center hole			PTFE red / Silicone white / PTFE red			1.0 mm	100	702085
N 9 PP screw cap, yellow, center hole			PTFE red / Silicone white / PTFE red			1.0 mm	100	702159
		702160			702161			702162
		702160			702161			702163
		702160			702161			702164
		702160			702161			702165
Cap description			Septa description			Thickness	Pack of	REF
N 9 PP screw cap, transparent, center hole			no liner			—	100	702160
N 9 PP screw cap, blue, center hole			no liner			—	100	702161
N 9 PP screw cap, black, center hole			no liner			—	100	702162
N 9 PP screw cap, red, center hole			no liner			—	100	702163
N 9 PP screw cap, green, center hole			no liner			—	100	702164
N 9 PP screw cap, yellow, center hole			no liner			—	100	702165

Screw neck vials and caps N 9



Ordering information

N 9 septa for screw caps N 9

Material	Illustration	Thickness	Pack of	REF
PTFE virginal, white		0.25 mm	100	702043
Red Rubber / FEP colorless		1.0 mm	100	702041
Silicone white / PTFE red		1.0 mm	100	702042
Silicone white / PTFE blue, slit		1.0 mm	100	702148

Vial Kits screw neck N 9

Packs of 100 vials and 100 closures, each

	Closure →				
Vial ↓	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			

Other Vial Kits on request.



Vial Kit with screw neck vials and closures N 9



Pre-sealed vial-closure combination

Ordering information

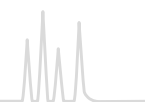
Pre-sealed vial-closure combinations with screw neck N 9

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, 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 and scale	pre-screwed with 702732: N 9 PP screw cap, blue, center hole, Red Rubber/FEP colorless, 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, 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 and scale	pre-screwed with 702288.1: N 9 PP screw cap, blue, center hole, Silicone white/PTFE blue, slit, 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 and scale	pre-screwed with 702288.1: N 9 PP screw cap, blue, center hole, Silicone white/PTFE blue, slit, 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 and scale	pre-screwed with 702026: N 9 PP bonded screw cap, blue, center hole, Silicone beige / PTFE white, 1.3 mm	100	702864

Other pre-sealed vial-closure combinations on request.



Screw neck vials and caps N 10



Screw neck vials and caps N 10

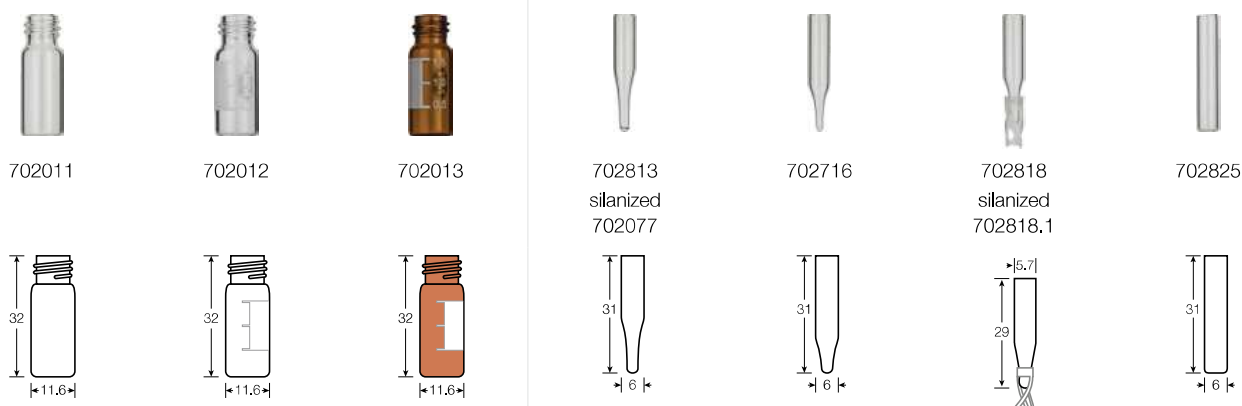


★ Key features

- Wide opening for easy filling
- Due to the cap height not universally suitable for all instruments
- Large range of bonded screw closures for a safe penetration (septa firmly connected with the cap; cannot be removed)
- Often used on Jasco, Shimadzu® and PerkinElmer® instruments
- On request also available as convenient Vial Kits with 100 vials and 100 caps

Ordering information

Screw neck vials N 10, wide opening (10-425 thread), and compatible inserts



Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	1.5 mL	11.6 x 32 mm	100	702011
Clear, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702012
Amber, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702013
Insert for wide opening vials, clear, conical, 15 mm tip	0.2 mL	6 x 31 mm	100	702813
as above, silanized	0.2 mL	6 x 31 mm	100	702077
Insert for wide opening vials, clear, conical, 12 mm tip	0.25 mL	6 x 31 mm	100	702716
Insert for wide opening vials, clear, with plastic spring	0.1 mL	5.7 x 29 mm	100	702818
as above, silanized	0.1 mL	5.7 x 29 mm	100	702818.1
Insert for wide opening vials, clear, flat bottom	0.3 mL	6 x 31 mm	100	702825

Screw closures N 10 and plain screw caps N 10



Cap description	Septa description	Thickness	Pack of	REF
N 10 PP bonded screw cap*, black, center hole	Red Rubber / TEF colorless	1.0 mm	100	702044
N 10 PP bonded screw cap*, black, center hole	Silicone white / PTFE beige	1.5 mm	100	702045
N 10 PP bonded screw cap*, black, center hole	Silicone white / PTFE red	1.0 mm	100	702046
N 10 PP bonded screw cap*, black, center hole	Silicone white / PTFE blue, slit	1.5 mm	100	702047
N 10 PP screw cap, black, center hole	PTFE red / Silicone white / PTFE red	1.0 mm	100	702048
N 10 PP screw cap, black, center hole	no liner	—	100	702049

* Septum firmly connected with the cap, cannot be removed.



Crimp neck vials and caps N 11



★ Key features

- Broad variety of standard crimp neck vials (with small or wide opening), as well as crimp neck micro-vials for smaller sample volumes
- Economic closures: Natural rubber / TEF (2 layers), Natural rubber / Butyl / TEF (3 layers) and Red Rubber / FEP (2 layers)
- For more demanding analyses: analytically pure Silicone / PTFE septa with lower fragmentation
- Magnetic closure: REF 702879 for use on CTC GC PAL
- Manual and electronic crimping tools for vials N 11 can be found on pages 113 and 134–135

Ordering information

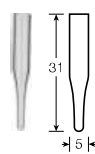
Crimp neck vials N 11, small opening, and compatible inserts



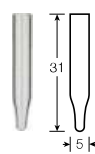
70201CG



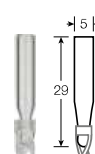
70214CG



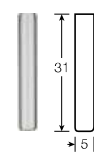
702968



702968.1



702824



702005

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom, small opening	1.5 mL	11,6 x 32 mm	100	70201CG
Amber, flat bottom, small opening	1.5 mL	11,6 x 32 mm	100	70214CG
Insert for small opening vials, clear, conical, 15 mm tip	0.1 mL	5 x 31 mm	100	702968*
Insert for small opening vials, clear, conical, 9 mm tip	0.15 mL	5 x 31 mm	100	702968.1*
Insert for small opening vials, clear, with plastic spring	0.1 mL	5 x 29 mm	100	702824
Insert for small opening vials, clear, flat bottom	0.25 mL	5 x 31 mm	100	702005

* Optionally you may use metal springs 702974.1 in combination with these products to push them up in the vial.



MACHEREY-NAGEL CHROMABOND® QuEChERS

The “Quick Easy Cheap Effective Rugged Safe” method

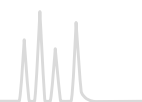
- High throughput, because of an easy handling and time-saving procedure
- Useful for sample preparation of many pesticides (“multi method”)
- Broad range of applications for different food
- Low solvent amounts
- High reproducibility and recovery rates
- No need for chlorinated solvents



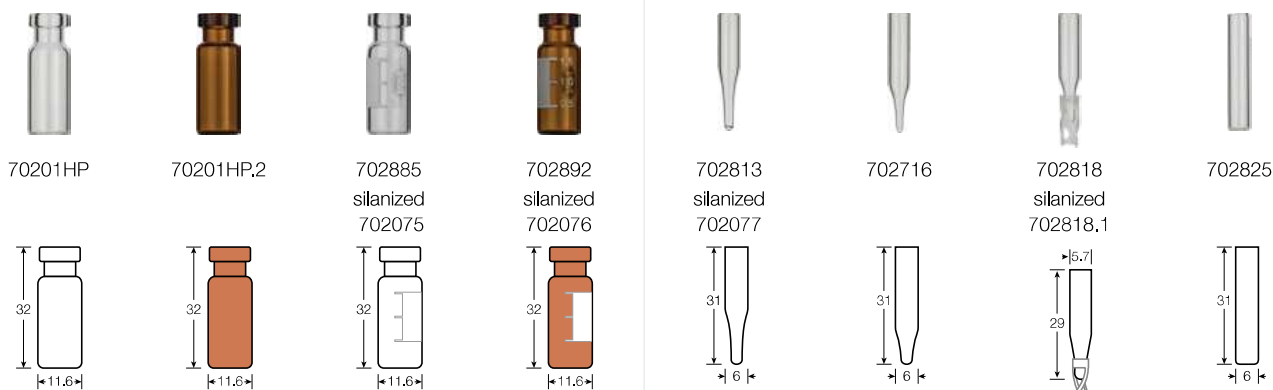
More information from page 57 onwards as well as online at www.mn-net.com/quechers



Crimp neck vials and caps N 11



Crimp neck vials N 11, wide opening, and compatible inserts



Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom, wide opening	1,5 mL	11,6 x 32 mm	100	70201HP
Amber, flat bottom, wide opening	1,5 mL	11,6 x 32 mm	100	70201HP.2
Clear, flat bottom, wide opening, label and scale	1,5 mL	11,6 x 32 mm	100	702885
as above, silanized	1,5 mL	11,6 x 32 mm	100	702075
Amber, flat bottom, wide opening, label and scale	1,5 mL	11,6 x 32 mm	100	702892
as above, silanized	1,5 mL	11,6 x 32 mm	100	702076
Insert for wide opening vials, clear, conical, 15 mm tip	0,2 mL	6 x 31 mm	100	702813
as above, silanized	0,2 mL	6 x 31 mm	100	702077
Insert for wide opening vials, clear, conical, 12 mm tip	0,25 mL	6 x 31 mm	100	702716
Insert for wide opening vials, clear, with plastic spring	0,1 mL	5,7 x 29 mm	100	702818
as above, silanized	0,1 mL	5,7 x 29 mm	100	702818.1
Insert for wide opening vials, clear, flat bottom	0,3 mL	6 x 31 mm	100	702825



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

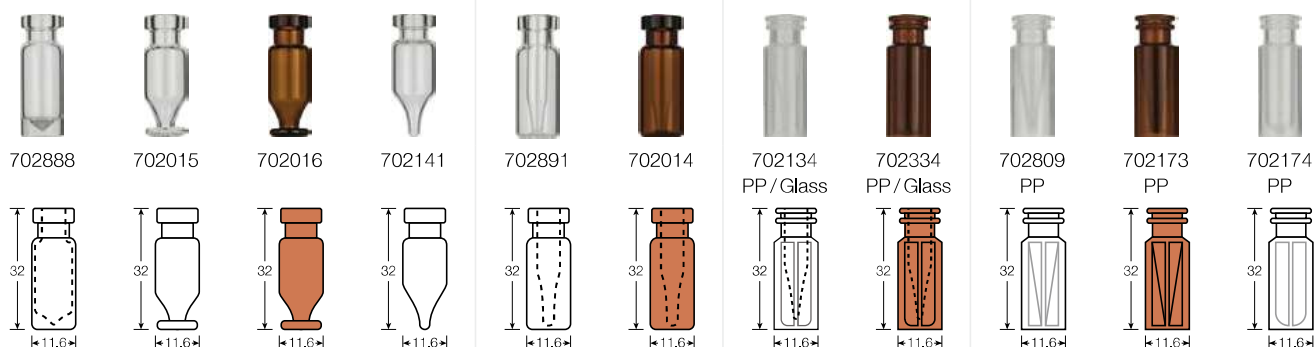
Cap can be turned with only low expenditure of power

Crimp neck vials and caps N 11



Ordering information

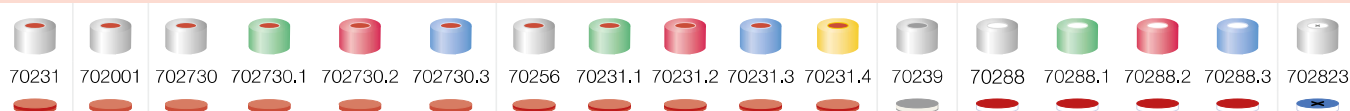
Crimp neck micro-vials N 11



Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Micro-vial, clear, flat bottom 15 µL funnel in solid glass bottom	1.1 mL	11.6 x 32 mm	100	702888
Micro-vial, clear, conical, with round pedestal glass plate	1.1 mL	11.6 x 32 mm	100	702015
Micro-vial, amber, conical, with round pedestal glass plate	1.1 mL	11.6 x 32 mm	100	702016
Micro-vial, clear, conical	1.1 mL	11.6 x 32 mm	100	702141
Micro-vial, clear, with integrated 0.2 mL insert	0.2 mL	11.6 x 32 mm	100	702891
Micro-vial, amber, with integrated 0.2 mL insert	0.2 mL	11.6 x 32 mm	100	702014
Micro-vial, polypropylene, transparent, with integrated 0.2 mL glass insert, conical	0.2 mL	11.6 x 32 mm	100	702134*
Micro-vial, polypropylene, amber, with integrated 0.2 mL glass insert, conical	0.2 mL	11.6 x 32 mm	100	702334*
Micro-vial, polypropylene, transparent, with inner cone	0.3 mL	11.6 x 32 mm	100	702809
Micro-vial, polypropylene, amber, with inner cone	0.3 mL	11.6 x 32 mm	100	702173
Micro-vial, polypropylene, transparent, with round bottom insert	0.7 mL	11.6 x 32 mm	100	702174

* upon request also available with an integrated silanized glass insert

Ready assembled aluminium crimp closures N 11



Cap description	Septa description	Thickness	Pack of	REF
N 11 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	1,3 mm	100	70231
N 11 aluminium crimp cap, silver, center hole	Natural rubber red-orange / TEF colorless	1.0 mm	100	702001
N 11 aluminium crimp cap, silver, center hole	Red Rubber / FEP colorless	1.0 mm	100	702730
N 11 aluminium crimp cap, green, center hole	as above	1.0 mm	100	702730.1
N 11 aluminium crimp cap, red, center hole	as above	1.0 mm	100	702730.2
N 11 aluminium crimp cap, blue, center hole	as above	1.0 mm	100	702730.3
N 11 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	1.0 mm	100	70256
N 11 aluminium crimp cap, green, center hole	as above	1.0 mm	100	70231.1
N 11 aluminium crimp cap, red, center hole	as above	1.0 mm	100	70231.2
N 11 aluminium crimp cap, blue, center hole	as above	1.0 mm	100	70231.3
N 11 aluminium crimp cap, gold, center hole	as above	1.0 mm	100	70231.4
N 11 aluminium crimp cap, silver, center hole	PTFE gray / Butyl beige / PTFE gray	1,3 mm	100	70239
N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE red	1.3 mm	100	70288
N 11 aluminium crimp cap, green, center hole	as above	1.3 mm	100	70288.1
N 11 aluminium crimp cap, red, center hole	as above	1.3 mm	100	70288.2
N 11 aluminium crimp cap, blue, center hole	as above	1.3 mm	100	70288.3
N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE blue, cross-slit	1.5 mm	100	702823*

N 11 PE cap, transparent, closed top, with thin piercing area



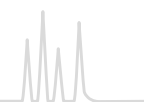
100

702401

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



Crimp neck vials and caps N 11



Ordering information

Ready assembled crimp closures N 11

								
702995	702995.1	702995.2	702995.3	702146	702879	70284	702175	702801
								
Cap description	Septa description			Thickness	Pack of	REF		
N 11 aluminium crimp cap, silver, center hole	PTFE red / Silicone white / PTFE red			1.0 mm	100	702995		
N 11 aluminium crimp cap, green, center hole	as above			1.0 mm	100	702995.1		
N 11 aluminium crimp cap, red, center hole	as above			1.0 mm	100	702995.2		
N 11 aluminium crimp cap, blue, center hole	as above			1.0 mm	100	702995.3		
N 11 aluminium crimp cap, silver, center hole	Viton black			1.0 mm	100	702146		
N 11 magnetic crimp cap, gold, center hole	Silicone white / PTFE red			1.0 mm	100	702879		
N 11 aluminium crimp cap, silver, center hole	PTFE virginial, white			0.25 mm	100	70284		
N 11 aluminium crimp cap, silver, roll groove, center hole	O-ring + aluminium septa, TPF (Total Phthalate Free)			0.1 mm	100	702175		
N 11 aluminium crimp cap, silver, center hole	no liner			—	100	702801		

N 11 Septa for crimp caps N 11

Material	Illustration	Thickness	Pack of	REF
PTFE virginial, white		0.25 mm	100	70262
Red Rubber / FEP colorless		1.0 mm	100	702065

Vial Kits crimp neck N 11

Packs of 100 vials and 100 closures, each

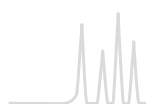
	Closure →			
				
Vial ↓	70288	702995	70256	702001
70201HP: 1.5 mL, clear, flat bottom	702215	702218	702222	
702885: 1.5 mL, clear, flat bottom, label and scale	702216	702219	702223	702253
702892: 1.5 mL, amber, flat bottom, label and scale	702217	702221	702224	702254
Other Vial Kits on request.				



Vial Kit with crimp neck vials and closures N 11



Pre-sealed vial-closure combination



Crimp neck vials and caps N 11



Ordering information

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, 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, 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, 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, 1.0 mm	100	702867

Other pre-sealed vial-closure combinations on request.

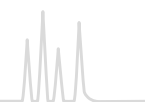
Ordering information

Crimping tools N 11

Description		Pack of	REF
Manual crimper (standard), height adjustable, for 11 mm aluminium crimp caps		1	735111
Manual decapper (standard) for 11 mm aluminium crimp caps		1	735911
Manual decapper (plier style) for 11 mm and 20 mm aluminium crimp caps		1	735911.20
Manual ergonomic crimper for 11 mm aluminium crimp caps		1	735211
Manual ergonomic decapper for 11 mm aluminium crimp caps		1	735311
Electronic crimper for 11 mm aluminium crimp caps (battery-powered)		1	735511
Electronic decapper for 11 mm aluminium crimp caps (battery-powered)		1	735611
Electronic high power crimping tool with power supply		1	735700
Crimping head for 11 mm crimp caps (aluminium, magnetic)		1	735711
Decapping head for 11 mm crimp caps (aluminium, magnetic)		1	735811
Stand for electronic crimping tools		1	735501
Replacement battery 6.6 V, 8.6 Wh for 735511, 735611		1	735500



Snap ring vials and caps N 11



Snap ring vials and caps N 11

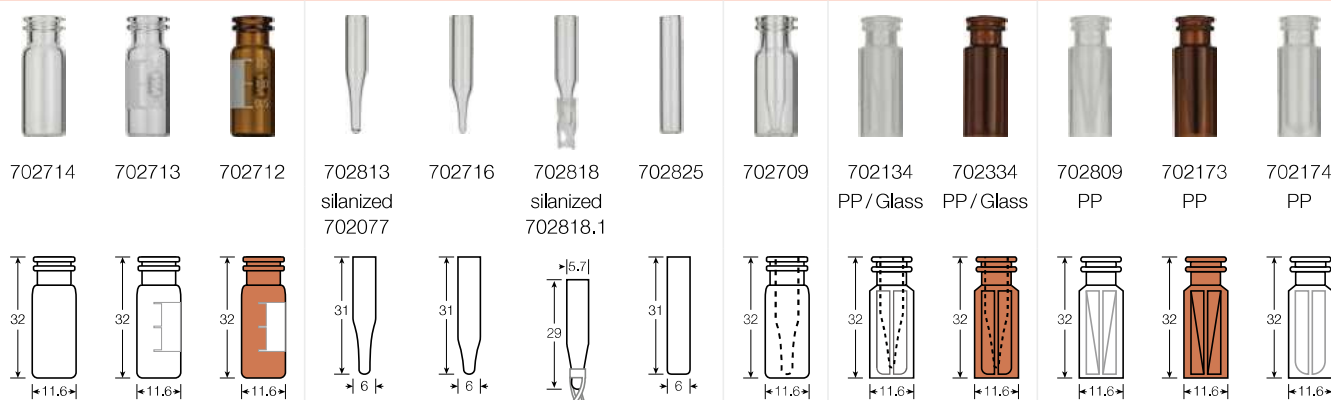
★ Key features

- Quick, convenient sealing method which, however, should only be used in HPLC
- Can be used on all common HPLC autosamplers
- Alternatively crimp closures N 11 can be used (see preceding pages).
- 0.3 and 0.7 mL PP snap ring vials for special applications, e.g., for ion chromatography
- Most common closure: with cross-slit Silicone / PTFE septum, which supports easy penetration with the relatively thick, blunt HPLC needle
- Besides hard caps in transparent and blue also more easy to handle soft caps in light blue are available



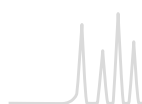
Ordering information

Snap ring vials N 11, wide opening, and compatible inserts



Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	1.5 mL	11.6 x 32 mm	100	702714
Clear, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702713
Amber, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702712
Insert for wide opening vials, clear, conical, 15 mm tip	0.2 mL	6 x 31 mm	100	702813
as above, silanized	0.2 mL	6 x 31 mm	100	702077
Insert for wide opening vials, clear, conical, 12 mm tip	0.25 mL	6 x 31 mm	100	702716
Insert for wide opening vials, clear, with plastic spring	0.1 mL	5.7 x 29 mm	100	702818
as above, silanized	0.1 mL	5.7 x 29 mm	100	702818.1
Insert for wide opening vials, clear, flat bottom	0.3 mL	6 x 31 mm	100	702825
Micro-vial, clear, with integrated 0.2 mL insert	0.2 mL	11.6 x 32 mm	100	702709
Micro-vial, polypropylene, transparent, with integrated 0.2 mL glass-insert, conical	0.2 mL	11.6 x 32 mm	100	702134*
Micro-vial, polypropylene, amber, with integrated 0.2 mL glass-insert, conical	0.2 mL	11.6 x 32 mm	100	702334*
Micro-vial, polypropylene, transparent, with inner cone	0.3 mL	11.6 x 32 mm	100	702809
Micro-vial, polypropylene, amber, with inner cone	0.3 mL	11.6 x 32 mm	100	702173
Micro-vial, polypropylene, transparent, with round bottom insert	0.7 mL	11.6 x 32 mm	100	702174

* upon request also available with an integrated silanized glass insert



Snap ring vials and caps N 11



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

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

Further pre-assembled vial-insert combinations on request.

Ordering information

Ready assembled snap ring closures N 11

												
702731	702063	702710	702710.1	702064	702717.2	702718	702718.1	702063.2080	702710.2080	702717.2080	702718.2080	702401
												
Cap description					Septa description				Thickness	Pack of	REF	
Hard caps, blue or transparent												
N 11 PE snap ring cap, transparent, center hole					Red Rubber / FEP colorless				1.0 mm	100	702731	
N 11 PE snap ring cap, blue, center hole					Red Rubber / FEP colorless				1.0 mm	100	702063	
N 11 PE snap ring cap, transparent, center hole					Silicone white / PTFE red				1.0 mm	100	702710	
N 11 PE snap ring cap, blue, center hole					Silicone white / PTFE red				1.0 mm	100	702710.1	
N 11 PE snap ring cap, transparent, center hole					Silicone white / PTFE blue, cross-slit				1.0 mm	100	702064	
N 11 PE snap ring cap, blue, center hole					Silicone white / PTFE blue, cross-slit				1.0 mm	100	702717.2	
N 11 PE snap ring cap, transparent, center hole					PTFE red / Silicone white / PTFE red				1.0 mm	100	702718	
N 11 PE snap ring cap, blue, center hole					PTFE red / Silicone white / PTFE red				1.0 mm	100	702718.1	
Soft caps, light blue												
N 11 PE snap ring cap, soft, light blue, center hole					Red Rubber / FEP colorless				1.0 mm	100	702063.2080	
N 11 PE snap ring cap, soft, light blue, center hole					Silicone white / PTFE red				1.0 mm	100	702710.2080	
N 11 PE snap ring cap, soft, light blue, center hole					Silicone white / PTFE blue, cross-slit				1.0 mm	100	702717.2080	
N 11 PE snap ring cap, soft, light blue, center hole					PTFE red / Silicone white / PTFE red				1.0 mm	100	702718.2080	
N 11 PE cap, transparent, closed top, with thin piercing area										100	702401	

Vial Kits snap ring N 11

Packs 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.





Snap ring vials and caps N 11



Ordering information

Vial rack for screw neck vials N 8, N 9, N 10 and crimp neck as well as snap ring vials N 11

Description	Pack of	REF
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	702502



Ordering information

Container for screw neck vials N 8, N 9, N 10 and crimp neck as well as snap ring vials N 11

Description	Pack of	REF
81 position container blue, with firmly integrated divider for vials 11.6 x 32 mm, outer length 130 mm, outer width 130 mm, outer height 45 mm, coded, with transparent lid (suitable for freezers)	1	702514



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.





Special vials for special applications

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

- Silanized glass vials

Silanized glass vials have a deactivated inner glass surface, in order to reduce adsorption of polar substances. Therefore they are often used for the analysis of proteins, phenols and amino acids, which would – without any silanization of the glass surface – react with the OH-groups of the glass and thus would stick to the normally polar glass surface. It is also recommendable to use silanized vials respectively inserts for pH-sensitive and aqueous samples.

- Plastic vials

For some applications glass vials are not suitable due to their composition and their chemical properties. Amongst these are heavy metal analysis, water and protein analysis, atomic absorption, capillary electrophoresis (CE) and ion chromatography (IC). For all these cases high purity polypropylene vials with 0.3 mL, 0.7 mL and 1.5 mL in transparent and amber are available.

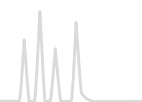
- Plastic vials with glass insert

In comparison to the glass-in-glass products, glass-in-plastic systems are very robust, as the glass insert is well protected by the polypropylene outer shell. The tip of the micro-insert is centered by 100 per cent in an outlet at the bottom. The inserts sit firmly in the protective PP round bottom shell and thus can easily be filled. Another advantage of these systems is their excellent tightness, as the glass insert always constantly exceeds the rim of the plastic outer vial by 0.1 mm granting a firm sealing of the sample in the insert. Upon request also a silanized insert can be integrated into the plastic shell. The high transparent polypropylene enables a good view on the filling level.





Crimp neck vials and caps N 13



Crimp neck vials and caps N 13



★ Key features

- Usage of these vials and closures is more in the packaging area
- Height adjustable crimpers for aluminium crimp caps as well as for Flip Top / Flip Off crimp caps
- Butyl / PTFE septa with only central PTFE lamination, typically called Pharma-Fix septa, stand out due to their excellent sealing on the glass rims.

Ordering information

Crimp neck vials N 13



70203

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	2 mL	13.75 x 35 mm	100	70203

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



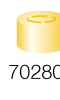
70257



70232



702802



702803

Cap description	Septa description	Thickness	Pack of	REF
N 13 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray*	2 mm	100	70257
N 13 aluminium center tear off cap, gold	Butyl dark gray / PTFE gray*	2 mm	100	70232
N 13 aluminium crimp cap, silver, center hole	no liner	–	100	702802
N 13 aluminium center tear off cap, gold	no liner	–	100	702803

* only centrically laminated, typically called Pharma-Fix

Crimping tools N 13

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

Container for crimp and screw neck vials N 13

Description	Pack of	REF
49 position container blue, with firmly integrated divider, for crimp and screw neck vials N 13, outer length 130 mm, outer width 130 mm, outer height 50 mm, with transparent lid (suitable for freezers)	1	702515

Vial rack for crimp and screw neck vials N 13

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



Container for crimp and screw neck vials N 13



Vial rack for crimp and screw neck vials N 13

Screw neck vials and caps N 13



Screw neck vials and caps N 13



★ Key features

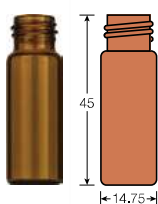
- Generally used for large sample volumes in HPLC
- In combination with closed top screw closures suitable for sample storage (see pages 120–122)
- Compatible insert requires metal spring for central alignment
- Range of ready assembled closures and plain caps with center hole or with closed top as well as separate septa (PTFE virginal, Red Rubber / FEP and Silicone / PTFE) are available.

Ordering information

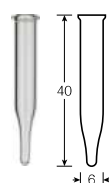
Screw neck vials N 13 (13-425 thread) and compatible insert



702962



702973



702972



702974

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	4 mL	14.75 x 45 mm	100	702962
Amber, flat bottom	4 mL	14.75 x 45 mm	100	702973
Insert, clear, conical, metal spring required	0.3 mL	6 x 40 mm	100	702972
Metal spring for 702972	–	–	100	702974

Ready assembled screw closures and plain screw caps N 13



702103



702050



702051



702926



702052



702963



702966

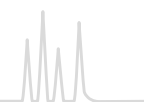
Cap description	Septa description	Thickness	Pack of	REF
N 13 screw cap (13-425), green, closed top	F217 white / PTFE beige (firmly fixed)	1.5 mm	100	702103
N 13 PP screw cap, black, center hole	Red Rubber / FEP colorless	1.5 mm	100	702050
as above, but with closed top	Red Rubber / FEP colorless	1.5 mm	100	702051
N 13 PP screw cap, black, center hole	Silicone white / PTFE red	1.3 mm	100	702926
as above, but with closed top	Silicone white / PTFE red	1.3 mm	100	702052
N 13 PP screw cap, black, center hole	no liner	–	100	702963
as above, but with closed top	no liner	–	100	702966

N 12 septa for screw caps N 13

Material	Illustration	Thickness	Pack of	REF
PTFE virginal, white		0.25 mm	100	70260
Red Rubber / FEP colorless		1.5 mm	100	702053
Silicone white / PTFE red		1.3 mm	100	702292



Special vials and caps



Screw neck vials for storage of liquid samples



★ Key features

- Usable volumes of 1.5 up to 24 mL
- Available neck sizes N 8, N 9, N 13, N 15, N 18 and N 20
- Corresponding closed top screw closures with different septa materials

Ordering information



70213



70213.2



702004



702893



702068



702066

Screw neck vials N 8, small opening (8-425 thread)

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	1.5 mL	11.6 x 32 mm	100	70213
Amber, flat bottom	1.5 mL	11.6 x 32 mm	100	70213.2
Clear, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702004
Amber, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702893

Closed top screw closures N 8

Cap description	Septa description	Thickness	Pack of	REF
N 8 PP screw cap, black, closed top	Red Rubber / FEP colorless	1.3 mm	100	702068
N 8 PP screw cap, black, closed top	Silicone white / PTFE red	1.3 mm	100	702066

Ordering information



702282



702293



702283



702284



702032



702033



702034

Screw neck vials N 9, wide opening (short thread)

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	1.5 mL	11.6 x 32 mm	100	702282
Amber, flat bottom	1.5 mL	11.6 x 32 mm	100	702293
Clear, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702283
as above, silanized	1.5 mL	11.6 x 32 mm	100	702078
Amber, flat bottom, label and scale	1.5 mL	11.6 x 32 mm	100	702284
as above, silanized	1.5 mL	11.6 x 32 mm	100	702079

Closed top screw closures N 9

Cap description	Septa description	Thickness	Pack of	REF
N 9 PP screw cap blue, closed top	PTFE virginal, white	0.25 mm	100	702032
N 9 PP screw cap blue, closed top	Red Rubber / FEP colorless	1.0 mm	100	702033
N 9 PP screw cap blue, closed top	Silicone white / PTFE red	1.0 mm	100	702034



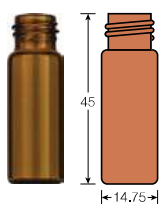
Special vials and caps



Ordering information



702962



702973



702103



702051



702052

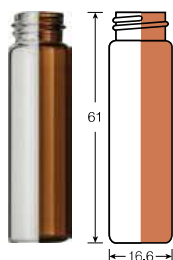
Screw neck vials N 13 (13-425 thread)

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, flat bottom	4 mL	14,75 x 45 mm	100	702962
Amber, flat bottom	4 mL	14,75 x 45 mm	100	702973

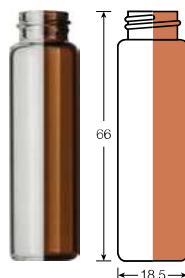
Closed top screw closures N 13

Cap description	Septa description	Thickness	Pack of	REF
N 13 screw cap (13-425), green, closed top	F217 white / PTFE beige (firmly fixed)	1.5 mm	100	702103
N 13 PP screw cap, black, closed top	Red Rubber / FEP colorless	1.5 mm	100	702051
N 13 PP screw cap, black, closed top	Silicone white / PTFE red	1.3 mm	100	702052

Ordering information



702096 / 702311



70285 / 702097



702104



702180

Screw neck vials N 15 (15-425 thread)

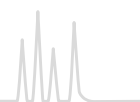
Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Screw neck vial N 15 (15-425 thread), clear, flat bottom	8 mL	16,6 x 61 mm	100	702096
Screw neck vial N 15 (15-425 thread), amber, flat bottom	8 mL	16,6 x 61 mm	100	702311
Screw neck vial N 15 (15-425 thread), clear, flat bottom	12 mL	18,5 x 66 mm	100	70285
Screw neck vial N 15 (15-425 thread), amber, flat bottom	12 mL	18,5 x 66 mm	100	702097

Screw closures N 15

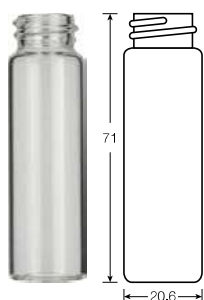
Cap description	Septa description	Thickness	Pack of	REF
N 15 screw cap (15-425), green, closed top	F217 white / PTFE beige (firmly fixed)	1.5 mm	100	702104
N 15 PP bonded screw cap (15-425), black, center hole	Silicone white / PTFE beige	1.5 mm	100	702180



Special vials and caps



Ordering information



702098



702105

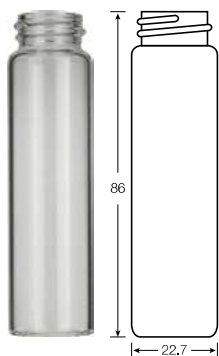
Screw neck vial N 18 (18-400 thread)

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Screw neck vial N 18 (18-400 thread), clear, flat bottom	16 mL	20.6 x 71 mm	100	702098

Screw closures N 18

Cap description	Septa description	Thickness	Pack of	REF
N 18 screw cap (18-400), green, closed top	F217 white/PTFE beige (firmly fixed)	1.5 mm	100	702105

Ordering information



702099



702106



702181

Screw neck vials N 20 (20-400 thread)

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Screw neck vial N 20 (20-400 thread), clear, flat bottom	24 mL	22.7 x 86 mm	100	702099

Screw closures N 20

Cap description	Septa description	Thickness	Pack of	REF
N 20 screw cap (20-400), green, closed top	F217 white/PTFE beige (firmly fixed)	1.5 mm	100	702106
N 20 PP bonded screw cap (20-400), white, center hole	Silicone white/PTFE beige	1.5 mm	100	702181

For screw neck vials with even larger volumes please see page 131.



Snap cap vials for storage of powdery samples



★ Key features

- Available sizes N 18 and N 22
- Usable volumes from 5 up to 25 mL
- Glass of 3rd hydrolytic class

Ordering information



70271



70272



70274

Snap cap vials N 18

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
N 18, clear, flat bottom	5 mL	20 x 40 mm	100	70271
N 18, clear, flat bottom	10 mL	22 x 50 mm	100	70272

PE snap caps N 18

Description	Pack of	REF
N 18 PE snap cap, transparent, for 70271 and 70272	100	70274

Ordering information



702019



70273



70275

Snap cap vials N 22

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
N 22, clear, flat bottom	15 mL	26 x 48 mm	100	702019
N 22, clear, flat bottom	25 mL	26 x 65 mm	100	70273

PE snap caps N 22

Description	Pack of	REF
N 22 PE snap cap, transparent, for 702019 and 70273	100	70275



Special vials and caps



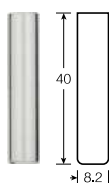
Shell vials N 8 and N 12



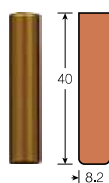
★ Key features

- Economic combination of vials and closures for uncritical HPLC applications
- PE stoppers with a diaphragm for safe penetration of the needle
- Often used on Waters® and Shimadzu® instruments

Ordering information



70202.1



702017



702807

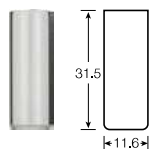
Shell vials N 8 with PE plug

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
N 8, clear, flat bottom	1 mL	8.2 x 40 mm	100	70202.1
N 8, amber, flat bottom	1 mL	8.2 x 40 mm	100	702017

PE plug N 8

Description	Pack of	REF
N 8 PE plug, transparent, for 70202.1 and 702017	100	702807

Ordering information



702018



702054

Shell vials N 12 with PE plug

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
N 12, clear, flat bottom	2 mL	11.6 x 31.5 mm	100	702018

PE plug N 12

Description	Pack of	REF
N 12 PE plug, transparent, for 702018	100	702054

Screw neck vials / magnetic screw caps N 18



Screw neck vials and magnetic screw caps N 18



★ Key features

- Headspace vials for convenient, safe and consistent handling
- High tightness and better reproducibility of the sealing process (as compared to crimping)
- Thinner septum (1.5 mm instead of 3 mm septum thickness in crimp caps), thus safe penetration of the needle and less fragmentation (especially important for SPME applications)
- Improved run in autosamplers with magnets (CTC Combi PAL and equivalent instruments), since a flat surface for the magnet is ensured, thus avoiding that the filled vial can drop from the magnet

Ordering information



Headspace screw neck vials N 18

Type of vial	Usable volume	(Illustrations scale 1:2) OD x height	Pack of	REF
Clear, rounded bottom	10 mL	22,5 x 46,0 mm	100	702866
Clear, rounded bottom	20 mL	22,5 x 75,5 mm	100	702826
Amber, rounded bottom	20 mL	22,5 x 75,5 mm	100	702826.2

Ready assembled, magnetic screw closures N 18

Cap description	Septa description	Thickness	Pack of	REF
N 18 magnetic screw cap, silver, center hole	Silicone blue transparent / PTFE white	1.5 mm	100	702827
N 18 magnetic screw cap, silver, center hole	Silicone white / PTFE blue	1.5 mm	100	702055
N 18 magnetic screw cap, silver, center hole	Silicone white / PTFE blue, slit	1.5 mm	100	702136
N 18 magnetic screw cap, silver, center hole	Red Rubber / TEF colorless	1.5 mm	100	702072

N 17 septa for magnetic screw caps N 18

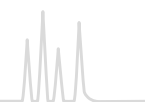
Material	Illustration	Thickness	Pack of	REF
Silicone blue transparent / PTFE white		1.5 mm	100	702981
Silicone white / PTFE blue		1.5 mm	100	702110

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

Description	Pack of	REF
25 position container blue, with removable divider, for headspace screw neck vials N 18 and crimp neck vials N 20; outer length 130 mm, outer width 130 mm, outer height 80 mm, with transparent lid (suitable for freezers)	1	702516



Crimp neck vials and caps N 20



Crimp neck vials and caps N 20



★ Key features

- Large range of Headspace crimp neck vials with different volumes and diameters
- Flat DIN crimp neck with stable bearing surface for the septum (especially suited for high vial pressures) as well as beveled HS crimp neck for instruments of certain manufacturers (PerkinElmer®).
- Assignment to respective instrument manufacturers in parentheses
- Different types of crimp closures depending on instrument and application
- Please consider our various crimping tools on pages 134-135.

Ordering information

Crimp neck vials N 20 (volume 5–10 mL)



70204.36



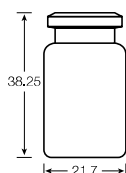
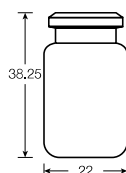
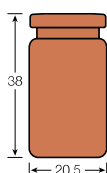
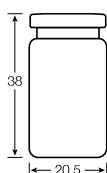
70215.36



702917



702020



70205.36



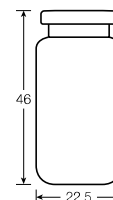
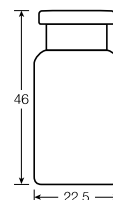
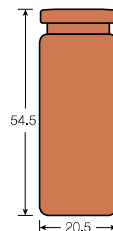
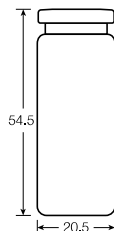
70216.36



702918



702924



Type of vial	Usable volume	(Illustrations scale 1:2)		Pack of	REF
		OD x height			
Clear, flat bottom, flat DIN crimp neck (Varian®)	5 mL	20.5 x 38.0 mm		100	70204.36
Amber, flat bottom, flat DIN crimp neck (Varian®)	5 mL	20.5 x 38.0 mm		100	70215.36
Clear, rounded bottom, beveled HS crimp neck (PerkinElmer®)	6 mL	22.0 x 38.25 mm		100	702917
Clear, flat bottom, beveled HS crimp neck (Metrohm®, Karl-Fischer titration)	5 mL	21.7 x 38.25 mm		100	702020
Clear, flat bottom, flat DIN crimp neck (Varian®)	10 mL	20.5 x 54.5 mm		100	70205.36
Amber, flat bottom, flat DIN crimp neck (Varian®)	10 mL	20.5 x 54.5 mm		100	70216.36
Clear, flat bottom, flat DIN crimp neck (Dani, Agilent®)	10 mL	22.5 x 46.0 mm		100	702918
Clear, rounded bottom, flat DIN crimp neck (CTC)	10 mL	22.5 x 46.0 mm		100	702924

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

Description	Pack of	REF
25 position container blue, with removable divider, for headspace screw neck vials N 18 and crimp neck vials N 20; outer length 130 mm, outer width 130 mm, outer height 80 mm, with transparent lid (suitable for freezers)	1	702516





Crimp neck vials and caps N 20



Ordering information

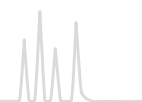
Crimp neck vials N 20 (volume 20 mL)



(Illustrations scale 1:2)				
Type of vial	Usable volume	OD x height	Pack of	REF
Clear, flat bottom, flat DIN crimp neck	20 mL	23.25 x 75.5 mm	100	70206.36
Amber, flat bottom, flat DIN crimp neck	20 mL	23.25 x 75.5 mm	100	70217.36
Clear, rounded bottom, beveled HS crimp neck (PerkinElmer®)	20 mL	23.0 x 75.5 mm	100	70254
Amber, rounded bottom, beveled HS crimp neck (PerkinElmer®)	20 mL	23.0 x 75.5 mm	100	702541
Clear, rounded bottom, beveled HS crimp neck, label (PerkinElmer®)	20 mL	23.0 x 75.5 mm	100	702540
Clear, flat bottom, flat DIN crimp neck (Dani, Agilent®)	20 mL	22.5 x 75.5 mm	100	702261
Clear, rounded bottom, flat DIN crimp neck (CTC)	20 mL	22.5 x 75.5 mm	100	702263
Amber, rounded bottom, flat DIN crimp neck (CTC)	20 mL	22.5 x 75.5 mm	100	702263.2
Clear, rounded bottom, beveled HS crimp neck, graduation at 15 mL	20 mL	22.0 x 75.0 mm	100	702086

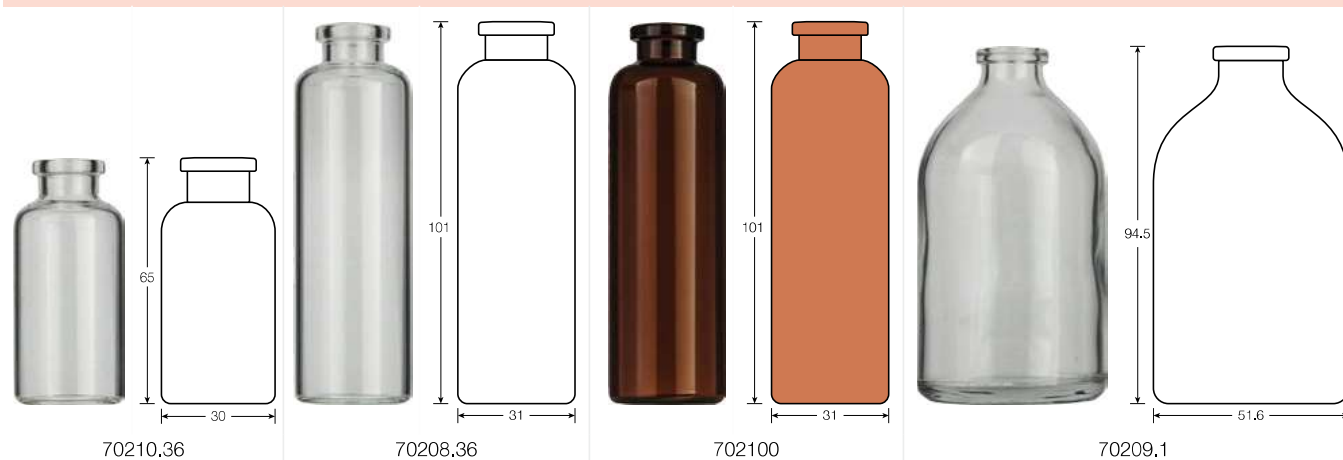


Crimp neck vials and caps N 20



Ordering information

Crimp neck vials N 20 (volume > 20 mL)



(Illustrations scale 1:2)				
Type of vial	Usable volume	OD x height	Pack of	REF
Clear, flat bottom, flat DIN crimp neck	25 mL	30 x 65 mm	100	70210,36
Clear, flat bottom, flat DIN crimp neck	50 mL	31 x 101 mm	100	70208,36
Amber, flat bottom, flat DIN crimp neck	50 mL	31 x 101 mm	100	702100
Clear, flat bottom, flat DIN crimp neck (3 rd hydrolytic class)	100 mL	51,6 x 94,5 mm	60	70209,1

Ordering information

Crimping tools N 20

Description		Pack of	REF
Manual crimper (standard), height adjustable, for 20 mm aluminium crimp caps		1	735120
Manual crimper (standard), height adjustable, for 20 mm Flip Top / Flip Off caps		1	735132
Manual decapper (standard) for 20 mm aluminium crimp caps		1	735920
Manual decapper (plier style, dual) for 11 mm and 20 mm aluminium crimp caps		1	735911,20
Manual ergonomic crimper for 20 mm aluminium crimp caps		1	735220
Manual ergonomic decapper for 20 mm aluminium crimp caps		1	735320
Electronic crimper for 20 mm aluminium crimp caps (battery-powered)		1	735520
Electronic decapper for 20 mm aluminium crimp caps (battery-powered)		1	735620
Electronic high power crimping tool with power supply		1	735700
Crimping head for 20 mm crimp caps (aluminium, magnetic, bi-metal)		1	735720
Decapping head for 20 mm crimp caps (aluminium, magnetic, bi-metal)		1	735820
Stand for electronic crimping tools		1	735501
Replacement battery 6,6 V, 8,6 Wh for 735520, 735620		1	735500

Crimp neck vials and caps N 20



Ordering information

Ready assembled crimp closures N 20

Center hole caps



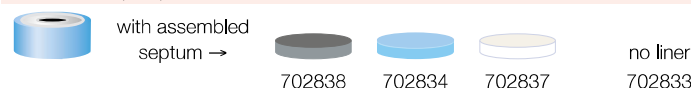
Cap description	Septa description	Thickness	Pack of	REF
N 20 aluminium crimp cap, silver, center hole	Butyl red / PTFE gray	3 mm	100	702773
N 20 aluminium crimp cap, silver, center hole	Butyl light gray / PTFE dark gray	3 mm	100	702775
N 20 aluminium crimp cap, silver, center hole	Molded septum Butyl / PTFE gray	3 mm	100	70234.9
N 20 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray*	3 mm	100	70234
N 20 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray*, high purity	3 mm	100	70234.10
N 20 aluminium crimp cap, gold, center hole	Butyl dark gray / PTFE gray*	3 mm	100	702056
N 20 aluminium crimp cap, silver, center hole	Butyl stopper gray, unassembled (separate parts)	–	100 each	70237
N 20 aluminium crimp cap, silver, center hole	Silicone blue transp. / PTFE colorless	3 mm	100	702093
N 20 aluminium crimp cap, silver, center hole	Silicone white / PTFE beige	3 mm	100	702094
N 20 aluminium crimp cap, silver, center hole	Silicone white / PTFE red (economy line)	3 mm	100	702091
N 20 aluminium crimp cap, silver, center hole	Silicone white / FEP / Aluminium foil silver	3.2 mm	100	702145
N 20 aluminium crimp cap, silver, center hole	no liner	–	100	702804
N 20 aluminium crimp cap, gold, center hole	no liner	–	100	702112

Pressure release caps



Cap description	Septa description	Thickness	Pack of	REF
N 20 aluminium pressure release cap, silver, center hole	Butyl red / PTFE gray	3 mm	100	702836
N 20 aluminium pressure release cap, silver, center hole	Butyl light gray / PTFE dark gray	3 mm	100	702829
N 20 aluminium pressure release cap, silver, center hole	Molded septum Butyl / PTFE gray	3 mm	100	70234.8
N 20 aluminium pressure release cap, silver, center hole	Butyl dark gray / PTFE gray*	3 mm	100	702071
N 20 aluminium pressure release cap, silver, center hole	Silicone blue transp. / PTFE colorless	3 mm	100	702927
N 20 aluminium pressure release cap, silver, center hole	Silicone white / PTFE beige	3 mm	100	702835
N 20 aluminium pressure release cap, silver, center hole	no liner	–	100	702799

Bi-metal crimp caps



Cap description	Septa description	Thickness	Pack of	REF
N 20 Bi-metal crimp cap, blue / silver, center hole	Butyl light gray / PTFE dark gray	3 mm	100	702838
N 20 Bi-metal crimp cap, blue / silver, center hole	Silicone blue transp. / PTFE colorless	3 mm	100	702834
N 20 Bi-metal crimp cap, blue / silver, center hole	Silicone white / PTFE beige	3 mm	100	702837
N 20 Bi-metal crimp cap, blue / silver, center hole	no liner	–	100	702833

Magnetic crimp caps

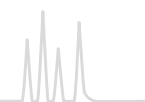


Cap description	Septa description	Thickness	Pack of	REF
N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl red / PTFE gray	3 mm	100	702774
N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl light gray / PTFE dark gray	3 mm	100	702928
N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl dark gray / PTFE gray*	3 mm	100	702928.9
N 20 magnetic crimp cap, silver, 8 mm center hole	Silicone blue transp. / PTFE colorless	3 mm	100	702929
N 20 magnetic crimp cap, silver, 8 mm center hole	no liner	–	100	702808

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



Crimp neck vials and caps N 20



Ordering information

Ready assembled crimp closures N 20

Center tear off caps

		70233			70236		no liner	70236.1
Cap description			Septa description		Thickness	Pack of	REF	
N 20 aluminium center tear off cap, gold			Butyl dark gray / PTFE gray*		3 mm	100	70233	
N 20 aluminium center tear off cap, silver			Butyl stopper gray, unassembled (separate parts)		–	100 each	70236	
N 20 aluminium center tear off cap, silver			no liner		–	100	70236.1	

Complete tear off caps

		70235			70238		no liner	702805
Cap description			Septa description		Thickness	Pack of	REF	
N 20 aluminium complete tear off cap, silver			Butyl dark gray / PTFE gray*		3 mm	100	70235	
N 20 aluminium complete tear off cap, silver			Butyl stopper gray, unassembled (separate parts)		–	100 each	70238	
N 20 aluminium complete tear off cap, silver			no liner		–	100	702805	

N 20 septa for crimp caps N 20

Material	Illustration	Thickness	Pack of	REF
Butyl red / PTFE gray		3 mm	100	70277
Butyl light gray / PTFE dark gray		3 mm	100	702057
Molded septum Butyl / PTFE gray		3 mm	100	702101
Butyl dark gray / PTFE gray*		3 mm	100	702D20TB
Silicone blue transparent / PTFE colorless		3 mm	100	702780
Silicone white / PTFE beige		3 mm	100	70278
Silicone white / Aluminium foil silver		3 mm	100	70279

* only centrally laminated, typically called Pharma-Fix

Stoppers N 20

Material	Illustration	Pack of	REF
Butyl gray		100	702931
Bromobutyl red		100	702931.1

Ordering information

PE caps N 20

height 8,4 mm		70266		702128	height 9,1 mm		70267		702129
Description					Pack of		REF		
N 20 PE cap, transparent, for beveled HS crimp neck N 20, 4,3 mm center hole (no liner)					100		70266		
as above, but with septum Butyl beige / PTFE gray, unassembled, 1,3 mm					100		70242		
as above, but with assembled septum natural rubber red-orange / TEF colorless, 1,3 mm					100		702128		
N 20 PE cap, transparent, for flat DIN crimp neck N 20, 4,3 mm center hole (no liner)					100		70267		
as above, but with septum Butyl beige / PTFE gray, unassembled, 1,3 mm					100		70240		
as above, but with assembled septum natural rubber red-orange / TEF colorless, 1,3 mm					100		702129		

N 19 septa for PE caps N 20

Description	Illustration	Thickness	Pack of	REF
Butyl beige / PTFE gray		1,3 mm	100	70269
Natural rubber red-orange / TEF colorless		1,3 mm	100	702904
Silicone blue transparent / PTFE white		1,3 mm	100	702144



Screw neck vials and caps N 24



Screw neck vials and caps N 24 (EPA)

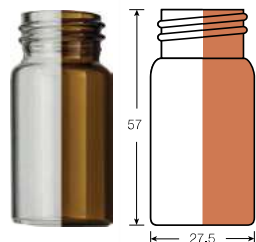


★ Key features

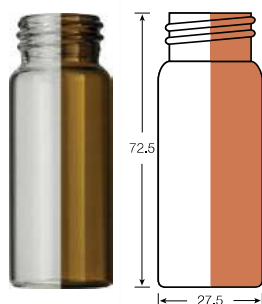
- Recommended for VOC and TOC analyses
- Closed top screw closures for sample storage
- Most frequently used: 40 mL clear glass
- Often called EPA vials, since they are defined in the regulations of the US Environmental Protection Agency
- Due to their size mainly used as bonded closure for a firm fit of the septum
- Recommended for environmental analysis: screw closure with center hole and Silicone / PTFE septum
- Universal screw closure 702168 with removable protection lid for sample storage and analysis

Ordering information

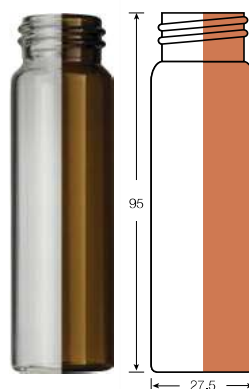
Screw neck vials N 24 (EPA)



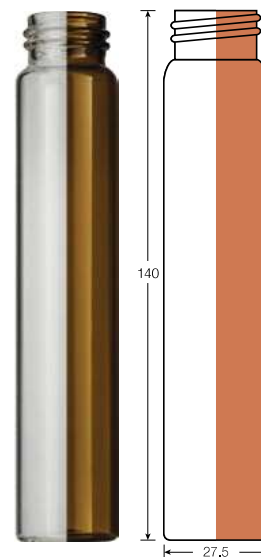
702021 / 702022



702132 / 702133



702023 / 702024



702074 / 702131

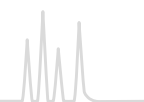
Type of vial	Usable volume	(Illustrations scale 1:2)		Pack of	REF
		OD x height			
Clear, flat bottom	20 mL	27.5 x 57.0 mm		100	702021
Amber, flat bottom	20 mL	27.5 x 57.0 mm		100	702022
Clear, flat bottom	30 mL	27.5 x 72.5 mm		100	702132
Amber, flat bottom	30 mL	27.5 x 72.5 mm		100	702133
Clear, flat bottom	40 mL	27.5 x 95.0 mm		100	702023
Amber, flat bottom	40 mL	27.5 x 95.0 mm		100	702024
Clear, flat bottom	60 mL	27.5 x 140 mm		100	702074
Amber, flat bottom	60 mL	27.5 x 140 mm		100	702131

Container for screw neck vials N 24

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



Screw neck vials and caps N 24



Ordering information

Screw closures N 24 and plain screw caps N 24

702058	702059	702073	702168	702130	702102	702060	702061
Cap description	Septa description	Thickness	Pack of	REF			
N 24 PP bonded* screw cap, white, center hole	Silicone white / PTFE beige	3.2 mm	100	702058			
as above, but with closed top	Silicone white / PTFE beige	3.2 mm	100	702059			
N 24 PP bonded* screw cap, white, center hole	Red Rubber / TEF colorless	2.5 mm	100	702073			
N 24 PP bonded* screw cap, white, center hole, with removable protection lid	Silicone natural / PTFE colorless	3.2 mm	100	702168			
N 24 PP screw cap, white, center hole	Butyl red / PTFE gray	2.4 mm	100	702130			
as above, but with closed top	Butyl red / PTFE gray	2.4 mm	100	702102			
N 24 PP screw cap, white, center hole	no liner		100	702060			
as above, but with closed top	no liner		100	702061			

* septum firmly connected with the cap, cannot be removed

Septa N 22 for screw caps N 24

Material	Illustration	Thickness	Pack of	REF
Silicone natural / PTFE colorless		3.2 mm	100	702062
Butyl red / PTFE gray		2.4 mm	100	702791

Ordering information

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 bonded screw cap, 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 bonded screw cap, white, center hole, Silicone white / PTFE beige, 45° shore A, 3.2 mm	100	702877

Other pre-sealed vial-closure combinations on request.



Universal screw closure N 24

All-in-one closure for sample storage and analysis, REF 702168

- Fits on all screw neck vials N 24 (EPA)
- Removable protection lid covers the penetration area and thus keeps the septa dust and contamination free
- Bonded Silicone / PTFE septa for safe penetration (septum is firmly connected to the screw cap)
- Ultrapure, soft Silicone / PTFE septa material prevents ghost peaks in the analysis
- Protection lid can repeatedly be removed and put on again





Containers



★ Key features

- Allow a secure transportation of sample vials
- Safe standing position in dividers designed for the respective diameter
- Ideal for space-saving storage in fridges, since the transparent lid prevents condensations on the closures and thus avoids a possible contamination in the cooling unit
- Available for all 1.5 mL vials (standard volume), for crimp and screw neck vials N 13 and for headspace vials with screw neck N 18 or crimp neck N 20, respectively as well as for EPA screw neck vials N 24

Ordering information

Containers

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

Ordering information

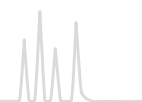
Vial racks

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





Crimping tools



Manual crimping tools

Advanced ergonomic version



Crimper available for 8 mm, 11 mm and 20 mm crimp caps

- More lightweighted than complete steel crimpers
- Ergonomically designed handles
- Adjustment by a knob on the crimping head that is easily accessible and visible
- Activated by bottom handle motion only which allows a steadier and safer hold of the tool during crimping
- Due to design and alignment of the crimping head better vertical clearance over the vial

Advanced ergonomic decappers allow safe removal of caps; no adjustment required (for 11 and 20 mm crimp caps available)

Standard version



Crimper available for 8, 11, 13 and 20 mm crimp caps

- Adjustable crimping height via hexagon key, which allows to move the inner part of the crimping head up and down (not possible for manual crimpers N 8)
- Crimping pressure adjustable via screw in the handle
- Manual crimpers for N 13 and N 20 Flip Top / Flip Off caps (pharmaceutical closures) available
- Long life time and convenient handling

Manual decappers (standard version) allow safe removal of caps; no adjustment required

Ordering information

Description	Pack of	REF
Manual crimpers (ergonomic)		
(crimping pressure adjustable by knob on the crimping head)		
Manual ergonomic crimper for 8 mm aluminium crimp caps	1	735208
Manual ergonomic crimper for 11 mm aluminium crimp caps	1	735211
Manual ergonomic crimper for 20 mm aluminium crimp caps	1	735220
Manual decappers (ergonomic)		
Manual ergonomic decapper for 11 mm aluminium crimp caps	1	735311
Manual ergonomic decapper for 20 mm aluminium crimp caps	1	735320
Manual crimpers (standard)		
Crimping height: adjustable by a hexagon key in the crimping head		
Crimping pressure: adjustable by a screw in the handle		
Manual crimper for 8 mm aluminium crimp caps	1	735126
Manual crimper, height adjustable, for 11 mm aluminium crimp caps	1	735111
Manual crimper, height adjustable, for 13 mm aluminium crimp caps	1	735113
Manual crimper, height adjustable, for 13 mm Flip Top / Flip Off crimp caps	1	735133
Manual crimper, height adjustable, for 20 mm aluminium crimp caps	1	735120
Manual crimper, height adjustable, for 20 mm Flip Top / Flip Off crimp caps	1	735132
Manual decappers (standard)		
Manual decapper for 8 mm aluminium crimp caps	1	735408
Manual decapper for 11 mm aluminium crimp caps	1	735911
Manual decapper for 13 mm aluminium crimp caps	1	735913
Manual decapper for 20 mm aluminium crimp caps	1	735920
Manual decapper (plier style) for two cap sizes		
Manual decapper, for 11 mm and 20 mm crimp caps	1	735911.20



Electronic crimping tools

Battery-powered electronic crimping tools



Available for 11 mm and 20 mm aluminium crimp caps (not suitable for 20 mm magnetic / bi-metal crimp caps). Mobile tools for consistent and reproducible crimping results

- Crimping pressure adjustable by pushing +/- buttons of the control unit on top of the tool
- Long lasting lithium ion cell batteries (full battery charge for several hundred vials, life time of battery > 1500 charges)
- CE certificate of conformity along with one year warranty
- One tool each necessary for crimping and for decapping
- For more convenient handling a stand is optionally available

Electronic high power crimping tool



Available for 11 mm and 20 mm crimp caps (also suitable for magnetic / bi-metal crimp caps). Due to a more powerful motor also suitable for magnetic and bi-metal crimp caps

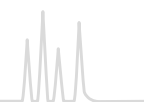
- Fixed power supply
- Exchangeable crimping / decapping heads
- Digital LED display of crimp settings; different jaw settings can be stored in separate programs
- CE certificate of conformity along with one year warranty
- For more convenient handling a stand is optionally available

Ordering information

Description	Pack of	REF
Electronic crimpers (battery-powered)		
Electronic crimper for 11 mm aluminium crimp caps	1	735511
Electronic crimper for 20 mm aluminium crimp caps (not suitable for magnetic / bi-metal crimp caps)	1	735520
Electronic decappers (battery-powered)		
Electronic decapper for 11 mm aluminium crimp caps	1	735611
Electronic decapper for 20 mm aluminium crimp caps (not suitable for magnetic / bi-metal crimp caps)	1	735620
Accessories for battery-powered electronic crimping / decapping tools		
Replacement battery 6.6 Volt, 8.6 Wh	1	735500
Stand for electronic crimping tools	1	735501
Electronic high power crimping tool		
Electronic high power crimping tool with power supply (please order exchangeable crimping / decapping heads separately)	1	735700
Accessories for 735700		
Crimping head for 11 mm crimp caps (for electronic high power crimping tool 735700)	1	735711
Crimping head for 20 mm crimp caps (for electronic high power crimping tool 735700)	1	735720
Decapping head for 11 mm crimp caps (for electronic high power crimping tool 735700)	1	735811
Decapping head for 20 mm crimp caps (for electronic high power crimping tool 735700)	1	735820
Stand for electronic crimping tools	1	735501



Autosampler compatibility



Autosampler compatibility charts

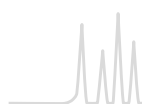
The autosampler compatibility charts generally show the most typical vials and closures for use on the instruments of a given manufacturer. In addition to the products listed in those charts, our catalog may contain other technically and functionally suitable products for use on a given autosampler which are not marketed actively as accessories by the respective manufacturer. We look forward to recommend any suitable product.

Compatibility charts have been compiled for the following instrument manufacturers: Agilent®, CTC, Dionex®, Knauer, PerkinElmer®, Shimadzu®, Thermo Scientific®, Varian® (Agilent®), VWR® (Merck®/Hitachi®), Waters®. Where applicable, each chart is divided into fields of use (GC, HPLC, Headspace).

We generally recommend that you 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.

Agilent®				
Application / Type of vial	Most popular MN products for use on Agilent® instruments			Page
	Vials:	Inserts:	Closures:	
GC				
N 8 crimp (micro sampling)	70282, 70286		70289, 702878	101
N 9 screw (standard sample)	702282, 702293, 702283, 702078, 702284, 702079, 702006, 702088, 702007, 702008, 702135, 702335, 702009, 702172, 702010, 702500	702716, 702813, 702077, 702818, 702818.1, 702825	702732, 702080, 702082, 702081, 702287.1, 702037, 702038, 702035, 702084, 702085, 702026	104
			702155 (for GC PAL)	
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702075, 702892, 702076, 702888, 702015, 702016, 702891, 702014, 702134, 702334	702716, 702813, 702077, 702818, 702818.1, 702825	70256, 702730, 702001, 70231.3, 70231.1, 70231.2, 70288, 702995, 702146	109
			702879 (for GC PAL)	
HPLC				
N 9 screw (standard sample)	as indicated under GC, additionally closures with slit septum: 702288.1, 702083, 702040, 702027, however, not closure 702155			104
N 11 crimp (standard sample)	as indicated under GC, however, not closures 702146 and 702879			109
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702716, 702813, 702077, 702818, 702818.1, 702825	702063, 702063.2080, 702710.1, 702710.2080, 702731, 702064, 702718	114
Headspace				
N 18 screw (Combi PAL + G 1888A)	702866, 702826, 702826.2			125
N 20 crimp	702918, 702261		70234, 70234.10, 702071, 702094, 702835, 70237	126
	for Combi PAL: 702924, 702263, 702263.2		702929 (for Combi PAL)	



Autosampler compatibility

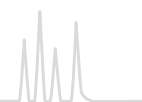


CTC			
Application / Type of vial	Most popular MN products for use on CTC instruments		
	Vials:	Inserts:	Closures:
GC			
N 8 crimp (micro sampling)	70282, 70286		70289, 702878
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335	702716, 702813, 702077, 702818, 702818.1, 702825	702287, 702287.1, 702036, 702037, 702038, 702107, 702026, 702286, 702035, 702158, 702084, 702085, 702159, 702155 (for GC PAL)
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334	702716, 702813, 702077, 702818, 702818.1, 702825	70288, 702995, 702879 (for GC PAL)
HPLC			
N 9 screw (standard sample)	as indicated under GC, additionally closures with slit septum: 702288, 702288.1, 702027, 702039, 702040, 702083, 702109, however, not closure 702155		
N 11 crimp (standard sample)	as indicated under GC, additionally closure 702823 with slit septum, however, not closure 702879		
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702716, 702813, 702077, 702818, 702818.1, 702825	702710.1, 702717.2, 702718.1, 702710, 702064, 702718
Headspace			
N 18 screw (Combi PAL)	702866, 702826, 702826.2		702827, 702055
N 20 crimp	702924, 702263, 702263.2		702929, 702834
			closure for washer bottle 702924: 70267 + 702144

Dionex® (Thermo Scientific®)			
Application / Type of vial	Most popular MN products for use on Dionex® instruments		
	Vials:	Inserts:	Closures:
HPLC			
N 8 crimp (micro sampling)	70282, 70286		702025, 70289
N 8 screw (standard sample)	70213, 70213.2, 702004, 702893, 702860	702968, 702968.1, 702824, 702005	70245, 702437
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702007, 702008, 702135, 702335, 702006, 702009, 702172, 702010, 702500	702813, 702077, 702818, 702818.1, 702825	702287.1, 702287, 702036, 702037, 702038, 702107, 702288.1, 702288, 702039, 702040, 702083, 702109, 702026, 702027
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334	702813, 702077, 702818, 702818.1, 702825	70288, 702823, 70256
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702813, 702077, 702818, 702818.1, 702825	702710.1, 702710, 702710.2080, 702717.2, 702064, 702717.2080
N 13 screw (large sample volumes)	702962, 702973	702972 + spring 702974	702926

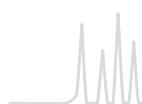


Autosampler compatibility



Knauer				
Application / Type of vial	Most popular MN products for use on Knauer instruments			Page
	Vials:	Inserts:	Closures:	
HPLC (Knauer S3950, Knauer UHPLC Version AS-1, Knauer Optimas)				
N 8 screw (standard sample)	70213, 70213.2, 702004, 702893	702968, 702968.1, 702824, 702005	702067, 70245	102
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335, 702088, 702009, 702172, 702010, 702500	702813, 702077, 702716, 702818, 702818.1, 702825	702732, 702030, 702080, 702081, 702082, 702147, 702287.1, 702287, 702036, 702037, 702038, 702107, 702028, 702026	104
N 18 screw (large sample volumes)	702866		702072, 702055, 702827	125
N 20 crimp (large sample volumes)	702918		702094, 702129	126

PerkinElmer®				
Application / Type of vial	Most popular MN products for use on PerkinElmer® instruments			Page
	Vials:	Inserts:	Closures:	
GC				
N 8 crimp (micro sampling)	70251		70252.1, 702025	101
N 11 crimp (standard sample)	70201CG*, 70214CG*, 70201HP**, 70201HP.2**, 702885**, 702892**, 702075**, 702076**, 702891, 702014, 702134, 702334	702824*, 702005*, 702818**, 702818.1**, 702825**	702730, 70256, 70231.1, 70231.2, 70231.3, 70288, 702995	109
* small opening; ** wide opening				
HPLC				
N 8 crimp (micro sampling)	70286		70252.1, 702025	101
N 8 screw (standard sample)	70213, 70213.2, 702004, 702892	702824, 702005	702067 = 70249 + 702070, 70245	102
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702009, 702172, 702010, 702500, 702007, 702008, 702135, 702335	702818, 702818.1, 702825	702288.1, 702027, 702287.1, 702026, 702732, 702028	104
N 10 screw (standard sample)	702012, 702013	702818, 702818.1, 702825	702047, 702044, 702045, 702046	108
N 11 crimp (standard sample)	as indicated under GC			109
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334	702818, 702818.1, 702825	702064, 702710, 702718	114
Headspace				
N 18 screw (CTC Combi PAL + TurboMatrix™ HS 16 + 40)	702866, 702826, 702826.2		702055, 702827, 702072	125
N 20 crimp (CTC Combi PAL)	702924, 702263, 702263.2		702929, 702834, 702774, 702928.9, 702928	126
N 20 crimp (TurboMatrix™ HS 16, 40 + 110)	702917**, 70254, 702540, 702541		702836, 702773, 702829, 70234.8, 702775, 70234.9, 702835, 702927, 702094, 702093, 702145, 70234, 70234.10, 702931 + 702804, 70237	126
** not suited for TurboMatrix™ 110				



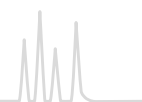
Autosampler compatibility



Shimadzu®				
Application / Type of vial	Most popular MN products for use on Shimadzu® instruments			Page
	Vials:	Inserts:	Closures:	
GC				
N 8 crimp (micro sampling)	70282, 70286		70289, 702878	101
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335	702716, 702813, 702077, 702825, 702818, 702818.1	702081, 702036, 702037, 702038, 702107, 702287.1, 702026 702155 (for AOC 5000)	104
N 10 screw (standard sample)	702011, 702012, 702013	as indicated under N 9 screw	702045, 702046, 702048	108
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334, 702141	702716, 702813, 702077, 702825, 702818, 702818.1	70288, 702995 702879 (for AOC 5000)	109
N 13 screw (large sample volumes)	702962, 702973	702972 + spring 702974	702926, 702963 + 702292	119
HPLC				
N 8 crimp (micro sampling)	70282, 70286		70289, 702878	101
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335	702716, 702813, 702077, 702825, 702818, 702818.1	702287.1, 702036, 702037, 702038, 702107, 702026, 702039, 702040, 702083, 702288.1, 702109, 702027	104
N 10 screw (standard sample)	702011, 702012, 702013	as indicated under N 9 screw	702045, 702046, 702047	108
N 11 crimp (standard sample)	as indicated under N 11 crimp GC	as indicated under N 11 crimp	70288, 702823	109
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334	as indicated under N 9 screw	702710.1, 702710, 702717.2, 702064	114
N 8, N 12 shell vials (standard sample)			vials + stoppers: 70202.1 + 702807, 702017 + 702807, 702018 + 702054	124
Headspace				
N 18 screw (AOC 5000)	702866, 702826, 702826.2		702055, 702827	125
N 20 crimp (AOC 5000)	702924, 702263, 702263.2		702929, 702928, 702834 for washer bottle 702924: 70267 + 702144	126

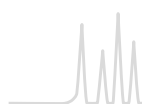


Autosampler compatibility



Thermo Scientific®				
Application / Type of vial	Most popular MN products for use on Thermo Scientific® instruments			Page
	Vials:	Inserts:	Closures:	
GC				
N 8 crimp (micro sampling)	70282, 70286, 70251		70289, 702025	101
N 8 screw (standard sample)	70213, 70213.2, 702004, 702893	702968, 702968.1, 702824, 702005	702067, 70245, 702069	102
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702135, 702335	702716, 702813, 702077, 702818, 702818.1, 702825	702732, 702081, 702084, 702287.1, 702037, 702026	104
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334	702716, 702813, 702077, 702818, 702818.1, 702825	702155 (for GC PAL) 70256, 702730, 70288 702879 (for GC PAL)	109
HPLC				
N 8 crimp (micro sampling)	70282, 70286		70289, 702025	101
N 8 screw (standard sample)	as indicated under GC			102
N 9 screw (standard sample)	as indicated under GC, but additionally closures 702040 and 702027, however, not closure 702155			104
N 11 crimp (standard sample)	as indicated under GC, however, not closure 702879			109
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702716, 702813, 702077, 702818, 702818.1, 702825	702063.2080, 702063, 702710.2080, 702710.1, 702717.2080, 702710.2080	114
Headspace				
N 18 screw (Combi PAL)	702866, 702826, 702826.2		702055, 702827	125
N 20 crimp (Combi PAL)	702924, 702263, 702263.2		702929, 702834	126
N 20 crimp (HS850/HS200)	702924, 702263, 702263.2		702775, 70234.9, 702773, 702931 + 702804 = 70237, 702093	126

Varian® (now Agilent®)					
Application / Type of vial	Most popular MN products for use on Varian® instruments			Page	
	Vials:	Inserts:	Closures:		
GC					
N 8 crimp (micro sampling)	70282, 70286		70289, 702878	101	
N 8 screw (standard sample)	70213, 70213.2, 702004, 702893	702968.1, 702824, 702005	702067, 70245, 702069	102	
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702006, 702079, 702008, 702007, 702135, 702335	702813, 702077, 702818, 702818.1, 702825	702732, 702287.1, 702037, 702084	104	
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702134, 702334	702813, 702077, 702818, 702818.1, 702825	702155 (for GC PAL) 70256, 702730, 70288, 702995 702879 (for GC PAL)	109	
HPLC					
N 8 crimp (micro sampling)	as indicated under GC			101	
N 8 screw (standard sample)	as indicated under GC, but additionally closure 702437			102	
N 9 screw (standard sample)	as indicated under GC, but additionally PP vials 702009, 702172, 702010, 702500 as well as closures 702040 and 702288.1			104	
N 11 crimp (standard sample)	as indicated under GC, but additionally closures 70231.4 and 70231.2			109	
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702813, 702077, 702818, 702818.1, 702825	702731, 702063, 702710, 702710.1, 702064, 702717.2, 702718, 702718.1	114	
Headspace					
N 18 screw (Combi PAL)	702866, 702826, 702826.2			702827, 702072, 702055	125
N 20 crimp (Combi PAL)	702924, 702263, 702263.2			702929, 702834	126
N 20 crimp (CP-9020/9025, CP-9060, Genesis)	702924, 702918, 702261			70234, 70234.10, 702775, 702094, 702931 + 702804 = 70237	126



Autosampler compatibility



VWR® (Merck® / Hitachi®)				
Application / Type of vial	Most popular MN products for use on VWR® instruments			Page
	Vials:	Inserts:	Closures:	
HPLC				
N 8 crimp (micro sampling)	70282, 70286		70289, 702878	101
N 8 screw (standard sample)	70213, 70213.2, 702004, 702893, 702860	702968, 702968.1, 702824, 702005	70245, 702437, 702067	102
N 9 screw (standard sample)	702282, 702293, 702283, 702078, 702284, 702079, 702007, 702008, 702135, 702335, 702006, 702009, 702172, 702010, 702500	702813, 702077, 702818, 702818.1, 702716, 702825	702287.1, 702287, 702036, 702037, 702038, 702107, 702288.1, 702288, 702039, 702040, 702083, 702109, 702026, 702027	104
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702075, 702892, 702076, 702888, 702891, 702014, 702134, 702334	702813, 702077, 702818, 702818.1, 702716, 702825	70288, 702823	109
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702813, 702077, 702818, 702818.1, 702716, 702825	702710.1, 702710, 702717.2, 702064, 702718.1, 702718, 702063, 702731	114
N 13 screw (large sample volumes)	702962, 702973	702972 + spring 702974	702926, 702963 + 70260	119

Waters®				
Application / Type of vial	Most popular MN products for use on Waters® instruments			Page
	Vials:	Inserts:	Closures:	
HPLC				
N 9 screw (standard sample)	702282, 702293, 702283, 702284, 702078, 702079, 702007, 702008, 702135, 702335, 702006, 702009, 702172, 702010, 702500	702818, 702818.1	702026, 702027, 702287.1, 702287, 702036, 702037, 702038, 702288.1, 702288, 702039, 702040, 702083	104
N 10 screw (standard sample)	702011, 702012, 702013	702818, 702818.1	702045, 702046, 702047	108
N 11 crimp (standard sample)	70201HP, 70201HP.2, 702885, 702892, 702075, 702076	702818, 702818.1	70288, 702995	109
N 11 snap ring (standard sample)	702714, 702713, 702712, 702709, 702134, 702334, 702809, 702173, 702174	702818, 702818.1	702710.1, 702717.2	114
N 8 shell vials (standard sample)			vials + closures: 70202.1 + 702807, 702017 + 702807	124
N 13 screw (large sample volumes)	702962, 702973	702972 + spring 702974	702926, 702963 + 70260	119