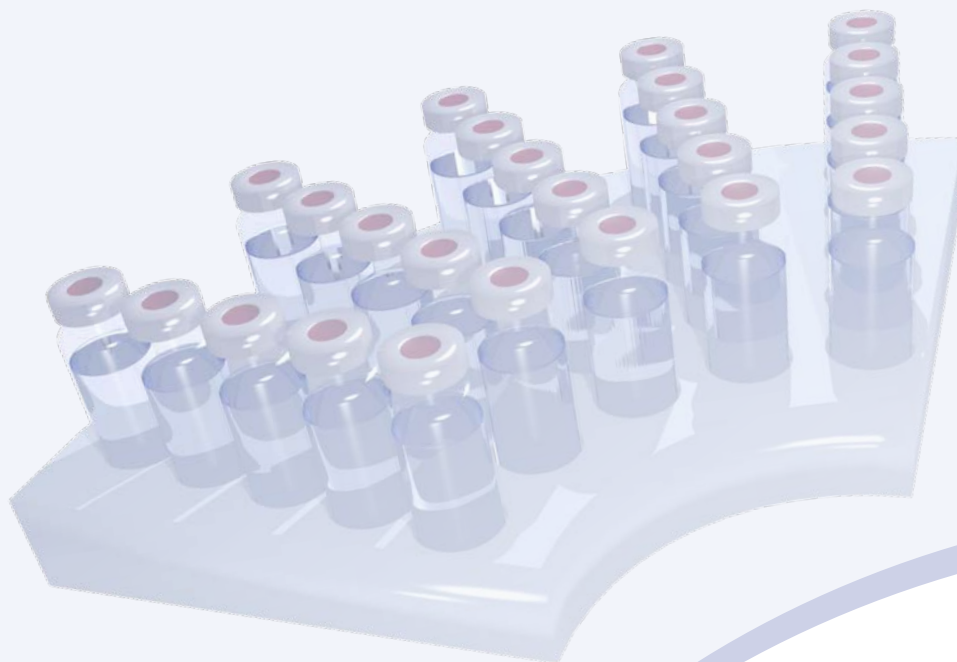


# Chromatography

## Vials and caps

НеваРеактив



Vials and inserts  
Closures and septa  
Accessories



MACHEREY-NAGEL

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



Since 1911

НеваРеактив



## Founding year

1911

## Management board

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

## Location

Düren (NRW, Germany) with two sites

- Factory space in Düren: 30,000 m<sup>2</sup>
- Production area 13,000 m<sup>2</sup>
- Storage space 11,000 m<sup>2</sup>
- Offices and laboratories 6,000 m<sup>2</sup> with a total of 40 labs



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



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

## Subsidiaries



**Switzerland** (1984)



**France** (1990)



**USA** (1998)

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

## Sales

> 100 Mio EUR

## Employees

~ 500, with 10% Ph.D. scientists

## Quality standard

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

## Delivery service

Dispatch of standard goods within 24 hours

MN product divisions



Chromatography



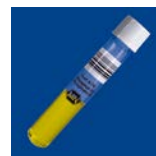
Bioanalysis



Filtration



Rapid tests



Water analysis

Chromatography product families



Vials and closures



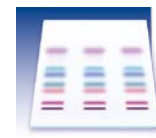
HPLC columns  
Adsorbents



GC columns  
Reagents



SPE phases  
Accessories



TLC plates



Syringe filters

Summary of vials



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



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



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



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

Specialties

Vials and closures can be supplied as:

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

Certificates of conformity

Can be requested for all vials and closures as needed

New products

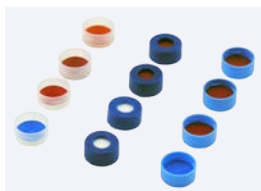


Polymagnetic screw closures

N 9 (for CTC GC PAL and corresponding autosamplers)

N 18 (for CTC Combi PAL and corresponding autosamplers)

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



Hard and soft snap ring caps N 11 for HPLC

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

Storage vials

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



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

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



Other new products

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





# Autosampler compatibility and cross-references

НеваРеактив

## Agilent

Main chapter	Pages	Most popular MN products for use on Agilent instruments (comparable product nos. of Agilent in brackets)
<b>GC:</b>		
<b>N 8 Crimp</b> (microsampling)	16	<b>Vials:</b> <b>70282</b> (5180-0841/500), <b>70286</b> (5180-0844/500)
	16	<b>Closures:</b> <b>70289</b> (5180-0842/500), <b>702878</b> (5183-4490/500)
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b> <b>702282</b> (5182-0714/100; 5183-2067/1000), <b>702293</b> (5188-6535/100; 5188-6536/1000), <b>702283</b> (5182-0715/100; 5183-2068/1000), <b>702078</b> (5183-2071/100), <b>702284</b> (5182-0716/100; 5183-2069/1000), <b>702079</b> (5183-2072/100), <b>702006</b> (5183-2030/100), <b>702088</b> (5184-3550/100), <b>702007</b> (5188-6591/100), <b>702008</b> (5188-6592/100), <b>702009</b> (5190-2242/100; 5190-2243/1000)
	19	<b>Inserts:</b> <b>702716</b> (5183-2085/100), <b>702813</b> (9301-1387/500), <b>702077</b> , <b>702818</b> (5181-1270/100), <b>702818.1</b> (5181-8872/100), <b>702825</b> (5181-3377/500)
	20, 21	<b>Closures:</b> <b>702732</b> (5182-0717/100; 5185-5820/500; 5190-1599/1000), <b>702080</b> (5185-5838/100), <b>702082</b> (5182-0718/100; 5185-5829/500), <b>702081</b> (5182-0719/100), <b>702287.1</b> (5182-0720/100; 5185-5863/500), <b>702037</b> (5182-0722/100), <b>702038</b> (5182-0721/100; 5185-5864/500), <b>702035</b> (5182-0723/100; 5185-5862/500), <b>702084</b> (5182-0725/100), <b>702085</b> (5182-0724/100; 5185-5861/500), <b>702026</b> (5185-5823/100), <b>702166</b> (for GC PAL)
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b> <b>70201HP</b> (5181-3375/100; 5183-4491/1000), <b>70201HP.2</b> , <b>702885</b> (5182-0543/100; 5183-4492/1000), <b>702075</b> (5183-4495/100), <b>702892</b> (5181-3376/100; 5183-4493/1000), <b>702076</b> (5183-4496/100), <b>702888</b> (5182-3454/100), <b>702015</b> (5184-3551/100), <b>702016</b> (5184-3555/100), <b>702891</b> (9301-1388/100), <b>702014</b> (5188-6572/100)
	23	<b>Inserts:</b> As indicated under <b>Screw N 9 - Inserts</b>
	25	<b>Closures:</b> <b>70256</b> , <b>702730</b> , <b>702001</b> (for all see 5181-1210/100; 5061-3370/500; 5183-4498/1000), <b>70231.3</b> (5181-1215/100), <b>70231.1</b> (5181-1216/100), <b>70231.2</b> (5181-1217/100), <b>70288</b> (5182-0552/100; 5183-4500/1000), <b>702995</b> (5181-1211/100; 5183-4499/1000), <b>702146</b> (5181-1212), <b>702879</b> (5188-5386/100, for GC PAL)
<b>HPLC:</b>		
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b> As indicated under <b>GC - Screw N 9 - Vials</b>
	19	<b>Inserts:</b> As indicated under <b>GC - Screw N 9 - Inserts</b>
	20	<b>Closures:</b> <b>702732</b> (5182-0717/100; 5185-5820/500; 5190-1599/1000), <b>702080</b> (5185-5838/100), <b>702082</b> (5182-0718/100; 5185-5829/500), <b>702081</b> (5182-0719/100), <b>702287.1</b> (5182-0720/100; 5185-5863/500), <b>702037</b> (5182-0722/100), <b>702038</b> (5182-0721/100; 5185-5864/500), <b>702084</b> (5182-0725/100), <b>702035</b> (5182-0723/100; 5185-5862/500), <b>702040</b> (5183-2078/100), <b>702085</b> (5182-0724/100; 5185-5861/500), <b>702083</b> (5183-2077/100), <b>702288.1</b> (5183-2076/100; 5185-5865/500), <b>702026</b> (5185-5823/100), <b>702027</b> (5185-5824/100; 5040-4649/500)
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b> As indicated under <b>GC - Crimp N 11 - Vials</b>
	23	<b>Inserts:</b> As indicated under <b>GC - Screw N 9 - Inserts</b>
	25	<b>Closures:</b> As indicated under <b>GC - Crimp N 11 - Closures</b> , however, not 702146 and 702879
<b>N 11 Snap</b> (standard samples)	27	<b>Vials:</b> <b>702714</b> (5182-0544/100; 5183-4504/1000), <b>702713</b> (5182-0546/100; 5183-4505/1000), <b>702712</b> (5182-0545/100; 5183-4506/1000), <b>702709</b> (5188-6593/100), <b>702809</b> (5188-2788/100; 9301-0978/1000)
	27	<b>Inserts:</b> As indicated under <b>GC - Screw N 9 - Inserts</b>
	27, 28	<b>Closures:</b> <b>702731</b> (5182-0550/100; 5182-0564/500), <b>702063</b> , <b>702063.2080</b> (for both see 5182-3458/100), <b>702710.1</b> , <b>702710.2080</b> (for both see 5182-0541/100; 5185-5916/500), <b>702064</b> (5183-4511/100), <b>702718</b> (5182-0566/100)



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НеваРеактив

## Agilent

Main chapter	Pages	Most popular MN products for use on Agilent instruments (comparable product nos. of Agilent in brackets)
<b>Headspace:</b>		
<b>N 18 Screw</b> (Combi PAL + G 1888A)	34	<b>Vials:</b> 702866 (5188-5392/100), 702826 (5188-2753/100), 702826.2 (5188-6537/100)
	34	<b>Closures:</b> 702055 (5188-2759/100), 702167
<b>N 20 Crimp</b>	35	<b>Vials:</b> 702918 (5182-0838/100), 702261 (5182-0837/100), 702924 (5183-4475/100 for Combi PAL), 702263 (5183-4474/100 for Combi PAL), 702263.2 (5190-2239/100 for Combi PAL)
	37-39	<b>Closures:</b> 70234 (5183-4479/100; 5190-2258/1000), 702071 (5183-4480/100), 702094 (5183-4477/100; 5190-2257/1000), 702835 (5183-4478/100), 702931 (5183-4476/100) + 702804 (9301-0721/100) = 70237, 702929 (5190-3987/100 for Combi PAL)

## CTC

Main chapter	Pages	Most popular MN products for use on CTC instruments
<b>GC:</b>		
<b>N 8 Crimp</b> (microsampling)	16	<b>Vials:</b> 70282, 70286, 70212, 70212.1, 702002, 702003
	16	<b>Closures:</b> 70289, 702878
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b> 702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008
	19	<b>Inserts:</b> 702716, 702813, 702077, 702818, 702818.1, 702825
	20, 21	<b>Closures:</b> 702287, 702287.1, 702036, 702037, 702038, 702107, 702026, 702286, 702035, 702158, 702084, 702085, 702159, 702166 (for GC PAL)
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b> 70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014
	23	<b>Inserts:</b> As indicated under <i>Screw N 9 - Inserts</i>
	25	<b>Closures:</b> 70288, 702995, 702879 (for GC PAL)
<b>HPLC:</b>		
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b> As indicated under <i>GC - Screw N 9 - Vials</i>
	19	<b>Inserts:</b> As indicated under <i>GC - Screw N 9 - Inserts</i>
	20	<b>Closures:</b> 702287, 702287.1, 702036, 702037, 702038, 702107, 702026, 702288, 702288.1, 702039, 702040, 702083, 702109, 702027, 702286, 702035, 702158, 702084, 702085, 702159
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b> As indicated under <i>GC - Crimp N 11 - Vials</i>
	23	<b>Inserts:</b> As indicated under <i>GC - Screw N 9 - Inserts</i>
	25	<b>Closures:</b> 70288, 702995, 702823
<b>N 11 Snap</b> (standard samples)	27	<b>Vials:</b> 702714, 702713, 702712, 702709
	27	<b>Inserts:</b> As indicated under <i>GC - Screw N 9 - Inserts</i>
	27	<b>Closures:</b> 702710.1, 702717.2, 702718.1, 702710, 702064, 702718
<b>Headspace:</b>		
<b>N 18 Screw</b> (Combi PAL)	34	<b>Vials:</b> 702866, 702826, 702826.2
	34	<b>Closures:</b> 702827, 702055, 702167
<b>N 20 Crimp</b>	35	<b>Vials:</b> 702924, 702263, 702263.2
	38, 39	<b>Closures:</b> 702929, 702834
		For washer bottle 702924: 70266 + 702144

НеваРеактив



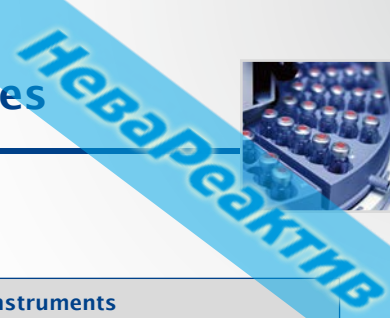
## Dionex (Thermo Scientific)

Main chapter	Pages	Most popular MN products for use on Dionex instruments	
<b>HPLC:</b>			
<b>N 8 Crimp</b> (microsampling)	16	Vials:	702880, 70282, 70286
	16	Closures:	702025, 70289
	17	Vials:	70213, 70213.2, 702004, 702893, 702860
<b>N 8 Screw</b> (standard samples)	17	Inserts:	702968, 702968.1, 702824, 702005
	18	Closures:	70245, 702437
	19	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702007, 702008, 702006, 702009
<b>N 9 Screw</b> (standard samples)	19	Inserts:	702813, 702077, 702818, 702818.1, 702825
	20	Closures:	702287.1, 702287, 702036, 702037, 702038, 702107, 702288.1, 702288, 702039, 702040, 702083, 702109, 702026, 702027
	23, 24	Vials:	70201HP, 70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014
<b>N 11 Crimp</b> (standard samples)	23	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	25	Closures:	70288, 702823, 70256
<b>N 11 Snap</b> (standard samples)	27	Vials:	702714, 702713, 702712, 702709, 702809
	27	Inserts:	As indicated under <b>Screw N 9 – Inserts</b>
	27, 28	Closures:	702710.1, 702710, 702710.2080, 702717.2, 702064, 702717.2080
<b>N 13 Screw</b> (large sample volumes)	30	Vials:	702962, 702973
	30	Inserts:	702972 + spring 702974
	30	Closures:	702926

## Knauer

Main chapter	Pages	Most popular MN products for use on Knauer instruments	
<b>HPLC</b> (Knauer S3950, Knauer UHPLC Version AS-1, Knauer Optimas):			
<b>N 8 Screw</b> (standard samples)	17	Vials:	70213, 70213.2, 702004, 702893
	17	Inserts:	702968, 702968.1, 702824, 702005
	18	Closures:	702067, 70245
<b>N 9 Screw</b> (standard samples)	19	Vials:	702282, 702293, 702283, 702284, 702078, 702079, 702006, 702007, 702008, 702088, 702009
	19	Inserts:	702813, 702077, 702716, 702818, 702818.1, 702825
	20	Closures:	702732, 702030, 702080, 702081, 702082, 702147, 702287.1, 702287, 702036, 702037, 702038, 702107, 702028, 702026
<b>N 18 Screw</b> (large sample volumes)	34	Vials:	702866
	34	Closures:	702072, 702055, 702827
<b>N 20 Crimp</b> (large sample volumes)	35	Vials:	702918
	37, 39	Closures:	702094, 702129





## PerkinElmer

Main chapter	Pages	Most popular MN products for use on PerkinElmer instruments (comparable product nos. of PE in brackets)
<b>GC:</b>		
<b>N 8 Crimp</b> (microsampling)	16	<b>Vials:</b> <b>70251</b> (N9301069/200)
	16	<b>Closures:</b> <b>70252.1, 702025</b> (for both see 03300806 /1000)
<b>N 11 Crimp</b> (standard samples)	23	<b>Vials:*</b> <b>70201CG</b> (N9301385), <b>70214CG</b> (N9302680)
	23	<b>Inserts:*</b> <b>702824</b> (N9300705), <b>702005</b> (N9300706)
* small opening	23, 24	<b>Vials:**</b> <b>70201HP</b> (N9306231), <b>70201HP.2, 702885</b> (N9306223), <b>702892</b> (N9302679), <b>702075, 702076, 702891</b> (N9300709), <b>702014</b> (N9300710)
** wide opening	23	<b>Inserts:**</b> <b>702818</b> (N9300703), <b>702818.1, 702825</b> (N9300704)
	25	<b>Closures:</b> <b>702730</b> (N9306230), <b>70256</b> (N9306015), <b>70231.1</b> (N9302684), <b>70231.2</b> (N9302685), <b>70231.3</b> (N9302686), <b>70288</b> (N9306228), <b>702995</b> (N9306229)
<b>HPLC:</b>		
<b>N 8 Crimp</b> (microsampling)	16	<b>Vials:</b> <b>70286</b> (N9302136/500)
	16	<b>Closures:</b> <b>70252.1, 702025</b> (for both see 03300806/1000)
<b>N 8 Screw</b> (standard samples)	17	<b>Vials:</b> <b>70213</b> (N9302945), <b>70213.2, 702004, 702892</b>
	17	<b>Inserts:</b> <b>702824</b> (N9300705), <b>702005</b> (N9300706)
	18	<b>Closures:</b> <b>702067 = 70249</b> (N9303441) + <b>702070</b> (N9303442), <b>70245</b> (N9303449)
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b> <b>702282</b> (N9306201), <b>702293</b> (N9306220), <b>702283</b> (N9307801), <b>702078, 702079, 702284</b> (N9307802), <b>702009, 702007</b> (N9300715), <b>702008</b> (N9300716)
	19	<b>Inserts:</b> <b>702818</b> (N9300703), <b>702818.1, 702825</b> (N9300704)
	20	<b>Closures:</b> <b>702288.1, 702027</b> (for both see N9306203), <b>702287.1, 702026</b> (for both see N9306202), <b>702732, 702028</b> (for both see N9306200)
<b>N 10 Screw</b> (standard samples)	22	<b>Vials:</b> <b>702012</b> (N9306053), <b>702013</b> (N9306057)
	22	<b>Inserts:</b> As indicated under <b>Screw N 9 - Inserts</b>
	22	<b>Closures:</b> <b>702047</b> (N9306052), <b>702044</b> (N9306206), <b>702045, 702046</b> (for both see N9306205)
<b>N 11 Crimp</b> (standard samples)	23-25	<b>Vials/ Inserts/ Closures:</b> As indicated under <b>GC - Crimp N 11</b>
<b>N 11 Snap</b> (standard samples)	27	<b>Vials:</b> <b>702714</b> (N9303418), <b>702713</b> (N9306207), <b>702712</b> (N9306208), <b>702709</b> (N9300711)
	27	<b>Inserts:</b> As indicated under <b>Screw N 9 - Inserts</b>
	27	<b>Closures:</b> <b>702064</b> (N9303416), <b>702710</b> (N9303419), <b>702718</b> (N9303417)
<b>Headspace:</b>		
<b>N 18 Screw</b> (for Combi PAL + TurboMatrix™ HS 16 + 40)	34	<b>Vials:</b> <b>702866</b> (N6356479), <b>702826</b> (N9306075/100; N9306078/1000), <b>702826.2</b>
	34	<b>Closures:</b> <b>702055</b> (N6356476), <b>702827</b> (N6356475), <b>702072</b> (N6356477), <b>702167</b>
<b>N 20 Crimp</b> (for Combi PAL)	35	<b>Vials:</b> <b>702924</b> (N6356478), <b>702263</b> (N6356471), <b>702263.2</b>
	38	<b>Closures:</b> <b>702929</b> (N6356559; N6356558), <b>702834</b> (N6356566; N6356565), <b>702928.9</b> (N6356562), <b>702928, 702774</b> (for both see N6356560)
<b>N 20 Crimp</b> (for TurboMatrix™ HS 16, 40 + 110) *** not suitable for TurboMatrix™ 110	35	<b>Vials:</b> <b>702917***</b> (N9302134/125), <b>70254</b> (N9306079/100; B0104236/1000), <b>702540</b> (N9303349/100; N9303348/1000), <b>702541</b>
	37, 39	<b>Closures:</b> <b>702836, 702773</b> (for both see B0104239/100‡; B0104240/1000‡, B4000025/1000‡), <b>702829, 70234.8 702775, 70234.9</b> (for all see N9306264/1000‡; N9306266/100‡; N9306267/1000‡), <b>702835, 702927, 702094, 702093</b> (for all see B0104241/100‡; B0104242/1000‡; B4000022/1000‡), <b>702145</b> (B0104243/100‡; B0104244/1000‡, B4000028/1000), <b>702931</b> (B0038137) + <b>702804</b> (B0099814), <b>70237</b> (B0110728/1000), <b>70234</b> (N9306224/1000)

‡ Alternative MN product



# Autosampler compatibility and cross-references

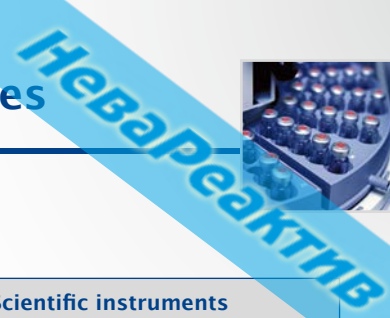
НеваРектив

## Shimadzu

Main chapter	Pages	Most popular MN products for use on Shimadzu instruments (comparable product nos. of Shimadzu in brackets)
<b>GC:</b>		
<b>N 8 Crimp</b> (microsampling)	16	Vials: <b>70282, 70286, 70212, 70212.1, 702002, 702003</b>
	16	Closures: <b>70289, 702878</b>
<b>N 9 Screw</b> (standard samples)	19	Vials: <b>702282, 702293, 702283</b> (EU: 980-08337/1000), <b>702284, 702078, 702079, 702006, 702007, 702008</b>
	19	Inserts: <b>702716, 702813</b> (EU: 980-04987/100), <b>702077, 702825, 702818</b> (US: 220-91521-04/100; EU: 980-01707/1000), <b>702818.1</b>
	20, 21	Closures: <b>702081</b> (EU: 980-08339/1000), <b>702036, 702037, 702038, 702107, 702287.1</b> (EU: 980-08338/1000; US: 228-45454-91/1000), <b>702026, 702166</b> (for AOC5000)
<b>N 10 Screw</b> (standard samples)	22	Vials: <b>702011, 702012, 702013</b>
	22	Inserts: As indicated under <b>Screw N 9 - Inserts</b>
	22	Closures: <b>702045, 702046, 702048</b>
<b>N 11 Crimp</b> (standard samples)	23, 24	Vials: <b>70201HP</b> (EU: 980-01705/1000), <b>70201HP.2, 702885, 702892, 702075, 702076, 702888, 702891, 702014, 702141</b>
	23	Inserts: As indicated under <b>Screw N 9 - Inserts</b>
	25	Closures: <b>70288</b> (EU: 980-05740/1000), <b>702995, 702879</b> (EU: 980-01706/1000 for AOC5000)
<b>N 13 Screw</b> (large sample volumes)	30	Vials: <b>702962</b> (US: 220-90393-00/100; 221-34267-92/50), <b>702973</b>
	30	Inserts: <b>702972</b> (US: 228-21285-91/100) + spring <b>702974</b>
	30	Closures: <b>702926</b> (US: 220-91521-14/1000), <b>702963</b> (US: 221-34268-92/50) + <b>702292</b> (US: 221-34266-92/50; 228-21290-91/100)
<b>HPLC:</b>		
<b>N 8 Crimp</b> (microsampling)	16	Vials: <b>70282, 70286</b>
	16	Closures: <b>70289, 702878</b>
<b>N 9 Screw</b> (standard samples)	19	Vials: As indicated under <b>GC - Screw N 9 - Vials</b>
	19	Inserts: As indicated under <b>GC - Screw N 9 - Inserts</b>
	20	Closures: <b>702287.1</b> (EU: 980-08338/1000; US: 228-45454-91/1000), <b>702036, 702037, 702038, 702107, 702026, 702039, 702040, 702083, 702288.1</b> (US: 220-91521-16/1000), <b>702109, 702027</b>
<b>N 10 Screw</b> (standard samples)	22	Vials: <b>702011, 702012, 702013</b>
	22	Inserts: As indicated under <b>GC - Screw N 9 - Inserts</b>
	22	Closures: <b>702045, 702046, 702047</b>
<b>N 11 Crimp</b> (standard samples)	23, 24	Vials: As indicated under <b>GC - Crimp N 11 - Vials</b>
	23	Inserts: As indicated under <b>GC - Screw N 9 - Inserts</b>
	25	Closures: <b>70288</b> (EU: 980-05740/1000), <b>702823</b>
<b>N 11 Snap</b> (standard samples)	27	Vials: <b>702714, 702713, 702712, 702709</b>
	27	Inserts: As indicated under <b>GC - Screw N 9 - Inserts</b>
	27	Closures: <b>702710.1, 702710, 702717.2, 702064</b>
<b>N 8, N 11 Shell Vials</b> (standard samples)	31	Vials + Plugs: <b>70202.1 + 702807, 702017 + 702807, 702018 + 702054</b>
<b>Headspace:</b>		
<b>N 18 Screw</b> (AOC 5000)	34	Vials: <b>702866</b> (US: 220-94796-07/100; EU: 980-00247/1000), <b>702826.2, 702826</b> (US: 220-94796-01/100; EU: 961-00915/1000; EU: 961-01122/100)
	34	Closures: <b>702055</b> (US: 220-94796-02/100; EU: 961-00914/1000; EU: 961-01123/100), <b>702827</b> (EU: 980-01708/1000), <b>702167</b>
<b>N 20 Crimp</b> (AOC 5000)	35	Vials: <b>702924</b> (EU: 980-00664/1000), <b>702263</b> (EU: 980-00111/1000), <b>702263.2</b>
	38	Closures: <b>702929</b> (EU: 961-01256/1000), <b>702928</b> (EU: 980-00112/1000),
	39	<b>702834</b> (EU: 980-03372/1000), Closure for washer bottle 702924: <b>70266 + 702144</b>



НеваРектив



## Thermo Scientific

Main chapter	Pages	Most popular MN products for use on Thermo Scientific instruments (comparable product nos. of Thermo Scientific in brackets)	
<b>GC:</b>			
<b>N 8 Crimp</b> (microsampling)	16	Vials:	<b>70282, 70286, 70251</b> (60180-707/1000), <b>702880</b> (60180-501/125)
	16	Closures:	<b>70289</b> (60180-525/100; 60180-709/1000), <b>702025</b> (60180-708/1000 <sup>†</sup> )
<b>N 8 Screw</b> (standard samples)	17	Vials:	<b>70213, 70213.2, 702004</b> (60180-508/100; 60180-714/1000), <b>702893</b> (60180-560/100; 60180-715/1000)
	17	Inserts:	<b>702968</b> (60180-265), <b>702968.1, 702824</b> (60180-721/1000), <b>702005</b> (60180-722/1000)
	18	Closures:	<b>702067</b> (60180-665/100; 60180-720/1000 <sup>†</sup> ), <b>70245</b> (60180-667/100; 60180-719/1000 <sup>†</sup> ), <b>702069</b> (60180-666/100 <sup>†</sup> )
<b>N 9 Screw</b> (standard samples)	19	Vials:	<b>702282</b> (60180-723/1000), <b>702283</b> (60180-509/100; 60180-723/1000), <b>702293</b> (60180-724/1000), <b>702284</b> (60180-561/100; 60180-724/1000), <b>702078, 702079, 702006, 702007</b> (60180-507), <b>702008</b>
	19	Inserts:	<b>702716</b> (60180-266/100), <b>702813, 702077, 702818</b> (60180-734/1000), <b>702818.1, 702825</b> (60180-735/1000)
	20, 21	Closures:	<b>702732</b> (60180-728/1000), <b>702081</b> (60180-669 <sup>†</sup> ), <b>702084</b> (60180-670 <sup>†</sup> ), <b>702287.1</b> (60180-729/1000), <b>702037</b> (60180-671 <sup>†</sup> ), <b>702026</b> (60180-673 <sup>†</sup> ), <b>702166</b> (for GC PAL)
<b>N 11 Crimp</b> (standard samples)	23, 24	Vials:	<b>70201HP, 70201HP.2, 702885</b> (60180-502/100; 60180-701/1000), <b>702892</b> (60180-702/1000), <b>702075, 702076, 702888, 702891, 702014</b>
	23	Inserts:	As indicated under <b>Screw N 9 - Inserts</b>
	25	Closures:	<b>70256, 702730</b> (for both see 60180-705/1000), <b>70288</b> (60180-526/100 <sup>†</sup> ; 60180-598/100; 60180-706/1000), <b>702879</b> (for GC PAL)
<b>HPLC:</b>			
<b>N 8 Crimp</b> (microsampling)	16	Vials:	<b>70282, 70286, 702880</b> (60180-501/125)
	16	Closures:	<b>70289</b> (60180-525/100; 60180-709/1000), <b>702025</b> (60180-708/1000 <sup>†</sup> )
<b>N 8 Screw</b> (standard samples)	17, 18	Vials/Inserts/ Closures:	As indicated under <b>GC - Screw N 8</b>
<b>N 9 Screw</b> (standard samples)	19, 20	Vials/Inserts/ Closures:	As indicated under <b>GC - Screw N 9</b> , additionally closures <b>702040</b> (60180-672 <sup>†</sup> ) and <b>702027</b> (60180-674 <sup>†</sup> ), however, not closure 702166
<b>N 11 Crimp</b> (standard samples)	23-25	Vials/Inserts/ Closures:	As indicated under <b>GC - Crimp N 11</b> , however, not closure 702879
<b>N 11 Snap</b> (standard samples)	27	Vials:	<b>702714</b> (60180-710/1000), <b>702713, 702712</b> (60180-711/1000 <sup>†</sup> ), <b>702709</b>
	27	Inserts:	As indicated under <b>GC - Screw N 9 - Inserts</b>
	27, 28	Closures:	<b>702063.2080</b> (60180-676 <sup>†</sup> ), <b>702063</b> (60180-712/1000), <b>702710.2080, 702710.1</b> (for both see 60180-713/1000), <b>702717.2080</b> (60180-678 <sup>†</sup> ), <b>702710.2080</b> (60180-677 <sup>†</sup> )
<b>Headspace:</b>			
<b>N 18 Screw</b> (for Combi PAL)	34	Vials:	<b>702866, 702826, 702826.2</b>
	34	Closures:	<b>702055, 702827, 702167</b>
<b>N 20 Crimp</b> (for Combi PAL)	35	Vials:	<b>702924</b> (60180-740/1000; 60180-504/125 <sup>†</sup> ), <b>702263</b> (60180-741/1000; 60180-506/125 <sup>†</sup> ), <b>702263.2</b>
	38	Closures:	<b>702929, 702834</b> (60180-520; 60180-519 + 60180-521)
<b>N 20 Crimp</b> (for HS850, HS2000, Triplus HS)	35	Vials:	<b>702924</b> (60180-740/1000; 60180-504/125 <sup>†</sup> ), <b>702263</b> (60180-741/1000; 60180-506/125 <sup>†</sup> ), <b>702263.2</b>
	37, 39	Closures:	<b>702775, 70234.9, 702773</b> (for all see 60180-513/100; 60180-746/1000), <b>702931</b> (60180-744) + <b>702804</b> (60180-512) = <b>70237, 702093</b> (60180-511)

<sup>†</sup> Alternative MN product



## Varian (Agilent)

Main chapter	Pages	Most popular MN products for use on Varian instruments (now Agilent; comparable product nos. of Varian → Agilent CrossLab in brackets)		
<b>GC:</b>				
<b>N 8 Crimp</b> (microsampling)	16	<b>Vials:</b>	<b>70282</b> (CP958690 → 8010-0155/500), <b>702002</b> , <b>70286</b> (CP959485 → 8010-0154/500), <b>702003</b> (→ 8010-0153/1000)	
	16	<b>Closures:</b>	<b>70289</b> (CP959183), <b>702878</b>	
<b>N 8 Screw</b> (standard samples)	17	<b>Vials:</b>	<b>70213</b> (392611639/100; 392620550/1000 → 8010-0011), <b>70213.2</b> (392611640/100; 392620552/1000 → 8010-0013), <b>702004</b> (→ 8010-0010), <b>702893</b> (CP959895 → 8010-0012)	
	17	<b>Inserts:</b>	<b>702968.1</b> (392611593/100; 392620546/1000 → 8010-0125), <b>702824</b> (392611591/100; 392620548/1000 → 8010-0124), <b>702005</b> (→ 8010-0126)	
	18	<b>Closures:</b>	<b>702067</b> (392611645/100; 392620559/1000 → 8010-0064 <sup>‡</sup> ), <b>70245</b> (392611641/100; 392620558/1000 → 8010-0054), <b>702069</b> (392611644 → 8010-0063 <sup>‡</sup> )	
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b>	<b>702282</b> (392611653/100; 392620500/1000 → 8010-0015), <b>702293</b> (392611654/100; 392620502/1000 → 8010-0017), <b>702283</b> (CP10291 → 8010-0014/100; 8010-0175/1000), <b>702284</b> (CP10292 → 8010-0016/100; 8010-0176/1000), <b>702078</b> (392611655/100; 392620501/1000), <b>702006</b> (CP959946), <b>702079</b> (392611879/100; 392620503/1000), <b>702008</b> (→ 8010-0009), <b>702007</b> (392620514 → 8010-0008)	
	19	<b>Inserts:</b>	<b>702813</b> (392611596/100; 392620536/1000; CP10580 → 8010-0132), <b>702077</b> (392611855/100; 392620537/1000), <b>702818</b> (392611594/100; 392620538/1000 → 8010-0131), <b>702818.1</b> (392611595/100; 392620539/1000), <b>702825</b> (CP912322 → 8010-0136/500)	
	20, 21	<b>Closures:</b>	<b>702732</b> , <b>702287.1</b> (CP958914 → 8010-0086), <b>702037</b> (392611659 → 8010-0088), <b>702084</b> (392611658 → 8010-0089), <b>702166</b> (for GC PAL)	
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b>	<b>70201HP</b> (392611634/100; 392620517/1000; CP10525 → 8010-0002), <b>70201HP.2</b> (392611635/100; 392620519), <b>702885</b> (CP10601 → 8010-0001/100; 8010-0170/1000), <b>702892</b> (CP10701 → 8010-0003/100; 8010-0172/1000), <b>702075</b> , <b>702076</b> , <b>702888</b> , <b>702891</b> (392620525 → 8010-0006), <b>702014</b> (→ 8010-0007)	
	23	<b>Inserts:</b>	As indicated under <b>Screw N 9 - Inserts</b>	
	25	<b>Closures:</b>	<b>70256</b> , <b>702730</b> (for both see 392611632/100; 392620524/1000; CP10210 → 8010-0045/100; 8010-0181/1000), <b>70288</b> (392611631/100; 392620523/1000, 392620521/100; 392620522/1000; CP959268 → 8010-0050/100; 8010-0183/1000), <b>702995</b> (→ 8010-0049/100; 8010-0182/1000)	
				<b>702879</b> (MLA110040M → 8010-0052, for GC PAL)

<sup>‡</sup> Alternative MN product

## Varian (Agilent)

Main chapter	Pages		Most popular MN products for use on Varian instruments (now Agilent; comparable product nos. of Varian → Agilent CrossLab in brackets)
<b>HPLC:</b>			
<b>N 8 Crimp</b> (microsampling)	16	<b>Vials:</b>	As indicated under <b>GC - Crimp N 8 - Vials</b>
	16	<b>Closures:</b>	As indicated under <b>GC - Crimp N 8 - Closures</b>
<b>N 8 Screw</b> (standard samples)	17	<b>Vials:</b>	As indicated under <b>GC - Screw N 8 - Vials</b>
	17	<b>Inserts:</b>	As indicated under <b>GC - Screw N 8 - Inserts</b>
	18	<b>Closures:</b>	As indicated under <b>GC - Screw N 8 - Closures</b> , additionally closure <b>702437</b> (→ 8010-0062)
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b>	As indicated under <b>GC - Screw N 9 - Vials</b> , additionally PP vial <b>702009</b> (→ 8010-0161/100; 8010-0194/1000)
	19	<b>Inserts:</b>	As indicated under <b>GC - Screw N 9 - Inserts</b>
	20	<b>Closures:</b>	As indicated under <b>GC - Screw N 9 - Closures</b> , additionally closures <b>702040</b> (392611660 → 8010-0082), <b>702288.1</b> (→ 8010-0078)
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b>	As indicated under <b>GC - Crimp N 11 - Vials</b>
	23	<b>Inserts:</b>	As indicated under <b>GC - Screw N 9 - Inserts</b>
	25	<b>Closures:</b>	As indicated under <b>GC - Crimp N 11 - Closures</b> , additionally closures <b>70231.4</b> (CP911378), <b>70231.2</b> (CP911376 → 8010-0048)
<b>N 11 Snap</b> (standard samples)	27	<b>Vials:</b>	<b>702714</b> (CP10390 → 8010-0024), <b>702713</b> (CP10391 → 8010-0023/100; 8010-0177/1000), <b>702712</b> (CP10392 → 8010-0025/100; 8010-0178/1000), <b>702709, 702809</b> (8010-0158/100; 8010-0193/1000)
	27	<b>Inserts:</b>	As indicated under <b>GC - Screw N 9 - Inserts</b>
	27	<b>Closures:</b>	<b>702731</b> (392611871 → 8010-0104), <b>702063</b> (→ 8010-0108), <b>702710</b> (392611873; CP10132), <b>702710.1</b> (→ 8010-0112), <b>702064</b> (392611874; CP10130 → 8010-0106), <b>702717.2, 702718</b> (392611872 → 8010-0105), <b>702718.1</b>
<b>Headspace:</b>			
<b>N 18 Screw</b> (for Combi PAL)	34	<b>Vials:</b>	<b>702866</b> (392620102 → 8010-0038), <b>702826</b> (392620202; CP910346 → 8010-0042), <b>702826.2</b> (392620204; CP911282 → 8010-0044)
	34	<b>Closures:</b>	<b>702827</b> (392620302 → 8010-0139), <b>702072</b> (392620306 → 8010-0140 <sup>‡</sup> ), <b>702055</b> (392620304; CP910347 → 8010-0139), <b>702167</b>
<b>N 20 Crimp</b> (for Combi PAL)	35	<b>Vials:</b>	<b>702924</b> (MLA201000 → 8010-0030), <b>702263</b> (MLA202100, 392612021 → 8010-0034), <b>702263.2</b> (392620528/100; 392620529/1000 → 8010-0036)
	38	<b>Closures:</b>	<b>702929</b> (MLA200051ML → 8010-0165), <b>702834</b> (392612017 → 8010-0420)
<b>N 20 Crimp</b> (CP-9020/9025, CP-9060, Genesis)	35	<b>Vials:</b>	<b>702924</b> (MLA201000 → 8010-0030), <b>702918</b> (392611677; CP10090 → 8010-0029/100; 8010-0179/1000), <b>702261</b> (392611675; CP10070 → 8010-0033/100; 8010-0180/1000)
	37, 39	<b>Closures:</b>	<b>70234, 702775</b> (392611859; CP10213 → 8010-0117), <b>702094</b> (392611858 → 8010-0116/100; 8010-0191/1000), <b>702931</b> (5183-4476/100) + <b>702804</b> (8010-0120/100) = <b>70237</b>

<sup>‡</sup> Alternative MN product





# Autosampler compatibility and cross-references

НеваРеактив

## VWR (Merck® / Hitachi)

Main chapter	Pages	Most popular MN products for use on VWR instruments (comparable product nos. of VWR Europe in brackets)	
<b>HPLC:</b>			
<b>N 8 Crimp</b> (microsampling)	16	Vials:	<b>70282</b> (548-0078), <b>70286</b> (548-0080)
	16	Closures:	<b>70289</b> (548-0040/1000; 548-3040/100), <b>702878</b> (548-0038/1000; 548-3038/100)
<b>N 8 Screw</b> (standard samples)	17	Vials:	<b>70213</b> (548-0018/1000; 548-3018/100), <b>70213.2</b> (548-0448/1000), <b>702004</b> (548-0420/1000), <b>702893</b> (548-0019/1000; 548-3019/100), <b>702860</b> (548-0419/1000)
	17	Inserts:	<b>702968</b> (548-0020/1000), <b>702968.1</b> (548-0308/1000), <b>702824</b> (548-0083/1000), <b>702005</b> (548-0780/1000)
	18	Closures:	<b>70245</b> (548-0024/1000; 548-3024/100), <b>702437</b> (548-0834/1000; 548-1497/1000 <sup>‡</sup> ), <b>702067</b> (548-3322/1000; 548-1491/1000 <sup>‡</sup> )
<b>N 9 Screw</b> (standard samples)	19	Vials:	<b>702282</b> (548-0028/1000; 548-3028/100), <b>702293</b> , <b>702283</b> (548-0029/1000; 548-3029/100), <b>702078</b> (548-0426/1000 <sup>‡</sup> ), <b>702284</b> (548-0030/1000; 548-3030/100), <b>702079</b> (548-0427/1000), <b>702007</b> (548-0425/1000 <sup>‡</sup> ; 548-1442/1000 <sup>‡</sup> ), <b>702008</b> (548-3308/1000 <sup>‡</sup> ), <b>702006</b> (548-0081/1000)
	19	Inserts:	<b>702813</b> (548-0006/1000; 548-3006/100), <b>702077</b> (548-0311/1000), <b>702818</b> (548-0002/1000), <b>702818.1</b> (548-0812/1000), <b>702716</b> (548-0310/1000), <b>702825</b> (548-0001/1000)
	20	Closures:	<b>702287.1</b> (548-0085/1000), <b>702287</b> (548-0034/1000), <b>702036</b> (548-0786/1000), <b>702037</b> (548-0381/1000), <b>702038</b> (548-3179/1000), <b>702107</b> (548-0162/1000), <b>702288.1</b> (548-0088/1000), <b>702288</b> (548-0084/1000), <b>702039</b> (548-0788/1000), <b>702040</b> (548-0382/1000), <b>702083</b> , <b>702109</b> (548-3182/1000), <b>702026</b> (548-0372/1000), <b>702027</b> (548-0373/1000)
<b>N 11 Crimp</b> (standard samples)	23, 24	Vials:	<b>70201HP</b> (548-0003/1000; 548-3003/100), <b>70201HP.2</b> , <b>702885</b> (548-0004/1000; 548-3004/100), <b>702075</b> (548-1368/100 <sup>‡</sup> ), <b>702892</b> (548-0005/1000; 548-3005/100), <b>702076</b> , <b>702888</b> (548-0092/1000; 548-3092/100), <b>702891</b> (548-0424/1000 <sup>‡</sup> ), <b>702014</b> (548-3307/1000)
	23	Inserts:	As indicated under <b>Screw N 9 - Inserts</b>
	25	Closures:	<b>70288</b> (548-0009/1000; 548-3009/100), <b>702823</b> (548-0411/1000)
<b>N 11 Snap</b> (standard samples)	27	Vials:	<b>702714</b> (548-0011/1000; 548-3011/100), <b>702713</b> (548-0422/1000), <b>702712</b> (548-0012/1000; 548-3012/100), <b>702709</b> (548-1441/1000 <sup>‡</sup> )
	27	Inserts:	As indicated under <b>Screw N 9 - Inserts</b>
	27	Closures:	<b>702710.1</b> (548-0432/1000), <b>702710</b> (548-0016/1000), <b>702717.2</b> (548-0435/1000), <b>702064</b> (548-0017/1000), <b>702718.1</b> (548-0434/1000), <b>702718</b> (548-0015/1000; 548-3015/100), <b>702063</b> (548-3360/1000 <sup>‡</sup> ), <b>702731</b> (548-3358/1000)
<b>N 13 Screw</b> (large sample volumes)	30	Vials:	<b>702962</b> (548-0051/1000; 548-3051/100), <b>702973</b> (548-0052/1000; 548-3052/100)
	30	Inserts:	<b>702972</b> (548-0093/1000) + spring <b>702974</b> (548-0094/1000)
	30	Closures:	<b>702926</b> (548-0054/1000; 548-3054/100), <b>702963</b> (548-0096/1000) + <b>70260</b> (548-0111/1000; 548-3111/100)

<sup>‡</sup> Alternative MN product

НеваРеактив











## Waters®

Main chapter	Pages	Most popular MN products for use on Waters® instruments (comparable product nos. of Waters® in brackets)	
<b>HPLC:</b>			
<b>N 9 Screw</b> (standard samples)	19	<b>Vials:</b>	<b>702282, 702293, 702283</b> (186000273), <b>702284</b> (186000848), <b>702078</b> (186000273DV), <b>702079</b> (186000848DV), <b>702007</b> (186002804), <b>702008</b> (186002803), <b>702006</b> (186002802), <b>702009</b> (186002626)
	19	<b>Inserts:</b>	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	20	<b>Closures:</b>	<b>702026</b> (186000274), <b>702027</b> (186000305), <b>702287.1</b> (186005828), <b>702287</b> (186002456‡), <b>702036</b> (186005826), <b>702037</b> (186002129‡), <b>702038</b> (186002130‡), <b>702288.1</b> (186005829), <b>702288</b> (186002457‡), <b>702039</b> (186005827), <b>702040</b> (186002128‡), <b>702083</b> (186002127‡)
<b>N 10 Screw</b> (standard samples)	22	<b>Vials:</b>	<b>702011</b> (WAT063300), <b>702012, 702013</b>
	22	<b>Inserts:</b>	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	22	<b>Closures:</b>	<b>702045</b> (WAT058874‡), <b>702046, 702047</b>
<b>N 11 Crimp</b> (standard samples)	23, 24	<b>Vials:</b>	<b>70201HP</b> (WAT094222), <b>70201HP.2, 702885, 702892</b> (WAT094223), <b>702075</b> (WAT094222DV), <b>702076</b> (WAT094223DV)
	23	<b>Inserts:</b>	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	25	<b>Closures:</b>	<b>70288</b> (PSL404219), <b>702995</b> (PSL404231)
<b>N 11 Snap</b> (standard samples)	27	<b>Vials:</b>	<b>702714, 702713</b> (WAT094219), <b>702712</b> (WAT094220), <b>702709, 702809</b> (186002628)
	27	<b>Inserts:</b>	<b>702818</b> (WAT094170), <b>702818.1</b> (WAT094170DV)
	27	<b>Closures:</b>	<b>702710.1</b> (186000303), <b>702095</b> (186002650), <b>702717.2</b> (186000304), <b>702143</b> (186002647)
<b>N 8 Shell Vials</b> (standard samples)	31	<b>Vials + Plugs:</b>	<b>70202.1 + 702807</b> (WAT025054C/250), <b>702017 + 702807</b> (WAT025053C/250)
<b>N 13 Screw</b> (large sample volumes)	30	<b>Vials:</b>	<b>702962</b> (186000840; WAT072710), <b>702973</b> (186001135)
	30	<b>Inserts:</b>	<b>702972</b> (WAT015199/144; WAT072704/100) + spring <b>702974</b> (WAT072708)
	30	<b>Closures:</b>	<b>702926</b> (186000841/100‡; 186000965/1000‡), <b>702963</b> (600000162) + <b>70260</b> (WAT072714/144; WAT073005/1440)

‡ Alternative MN product

## Crimp neck vials N 8







70286	70282	70251	70212	70212.1	702002	702003	702880
							
0.2 mL	0.3 mL	0.8 mL	0.6 mL	0.6 mL	0.7 mL	0.7 mL	1.2 mL
5.5 x 31.5 mm	5.5 x 31.5 mm	8.2 x 30 mm	7 x 40 mm	7 x 40 mm	7 x 40 mm	7 x 40 mm	8.2 x 40 mm
clear	clear	clear	clear	amber	clear	amber	clear
conical	round bottom	flat bottom	conical	conical	flat bottom	flat bottom	flat bottom
100 / PE bag	100 / PE bag	100 / carton	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

## Crimping tools N 8



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



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

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

## Screw neck vials N 8 (small opening)

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

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

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








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

## Containers for screw neck vials N 8







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

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





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

### N 8 septa for screw caps N 8

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

### Vial Kits screw neck N 8









Pack of 100 vials and 100 closures, each

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

Other Vial Kits on request



## Screw neck vials (wide opening) and inserts N 9

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










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

## Containers for screw neck vials N 9







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

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




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

## N 9 septa for screw caps N 9

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


## Bonded screw closures N 9

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

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

## Bonded polymagnetic screw closure N 9








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

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



## Vial Kits screw neck N 9

Pack of 100 vials and 100 closures, each

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








Other Vial Kits on request

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

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

Other pre-sealed vial-closure combinations on request

### Screw neck vials (wide opening) and inserts N 10







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

### Containers for screw neck vials N 10









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

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









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

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

## Crimp neck vials N 11







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

## Inserts for crimp neck vials N 11

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



Crimp neck vials N 11 for small sample volumes

702888	702141	702015	702016	702891	702014
					
1.1 mL	1.1 mL	1.1 mL	1.1 mL	0.2 mL	0.2 mL
11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm	11.6 x 32 mm
clear	clear	clear	amber	clear	amber
flat bottom, 15 µL funnel in solid glass bottom	conical	conical with round pedestal glass plate	conical with round pedestal glass plate	flat bottom, with integrated 0.2 mL insert	flat bottom, with integrated 0.2 mL insert
100 / PP box	100 / PE bag	100 / PP box	100 / PP box	100 / PP box	100 / PP box

Crimping tools N 11

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

Containers for crimp neck / snap ring vials N 11










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

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

REF		Cap description	Septum description	Hardness	Thickness	Pack of
70284		N 11 aluminium crimp cap, silver, center hole	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
70231		N 11 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.3 mm	100 / PE bag
702001		N 11 aluminium crimp cap, silver, center hole	Natural rubber red-orange / TEF colorless	60° shore A	1.0 mm	100 / PE bag
702730		N 11 aluminium crimp cap, silver, center hole	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
70256		N 11 aluminium crimp cap, silver, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.1		N 11 aluminium crimp cap, green, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.2		N 11 aluminium crimp cap, red, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.3		N 11 aluminium crimp cap, blue, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70231.4		N 11 aluminium crimp cap, gold, center hole	Natural rubber / Butyl red-orange / TEF colorless	45° shore A	1.0 mm	100 / PE bag
70288		N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE red	45° shore A	1.3 mm	100 / PE bag
702823		N 11 aluminium crimp cap, silver, center hole	Silicone white / PTFE blue, cross-slit	55° shore A	1.5 mm	100 / PE bag
702995		N 11 aluminium crimp cap, silver, center hole	PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag
702146		N 11 aluminium crimp cap, silver, center hole	Viton black	70° shore A	1.0 mm	100 / PE bag
702879		N 11 <b>magnetic</b> crimp cap, gold, center hole	Silicone white / PTFE red	45° shore A	1.0 mm	100 / PE bag
702801		N 11 aluminium crimp cap, silver, center hole (no liner)	-	-	-	100 / PE bag
702401		-	N 11 PE cap, transparent, closed top, thin piercing area	-	-	100 / PE bag
70262	-	- (septa only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702065	-	- (septa only)	Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag

### Vial Kits crimp neck N 11

Pack of 100 vials and 100 closures, each

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










Other Vial Kits on request

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

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


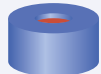



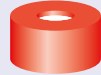





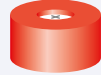





Other pre-sealed vial-closure combinations on request

## Snap ring vials (wide opening) and inserts N 11





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

Polypropylene

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

Cap description	Septum description	Hardness	Thickness	Pack of
<b>702731</b> <b>702063</b>   N 11 PE snap ring cap, color as indicated, center hole	 Red Rubber / FEP colorless	45° shore A	1.0 mm	100 / PE bag
<b>702710</b> <b>702710.1</b> <b>702095</b> <b>702142</b> <b>702108</b>      N 11 PE snap ring cap, color as indicated, center hole	 Silicone white / PTFE red	45° shore A	1.0 mm	100 / PE bag
<b>702064</b> <b>702717.2</b> <b>702143</b>    N 11 PE snap ring cap, color as indicated, center hole	 Silicone white / PTFE blue, cross-slit	55° shore A	1.0 mm	100 / PE bag
<b>702718</b> <b>702718.1</b>   N 11 PE snap ring cap, color as indicated, center hole	 PTFE red / Silicone white / PTFE red	50° shore A	1.0 mm	100 / PE bag
<b>702711</b>  N 11 PE cap, transparent, closed top, thin piercing area				100 / PE bag









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

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



### Vial Kits snap ring N 11


Pack of 100 vials and 100 closures, each

Closure →				
Vial ↓				
702714: 1.5 mL, clear, flat bottom	702225	702228	702232	702235
702713: 1.5 mL, clear, flat bottom, label and scale	702719	702229	702233	702236
702712: 1.5 mL, amber, flat bottom, label and scale	702227	702231	702234	702237

Other Vial Kits on request




## Crimp neck vials N 13



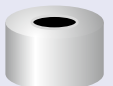

	<b>70203</b>
	2 mL
	13.75 x 35 mm
	clear, flat bottom
	100 / carton

## Crimping tools N 13

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



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

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

## Containers for crimp and screw neck vials N 13



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







Screw neck vials and insert N 13

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






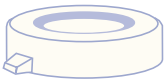
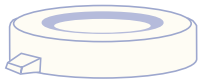
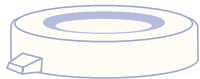
Ready assembled screw closures N 13, plain screw caps N 13, single septa N 12

REF	(Scale 1:1.25)	Cap description	Septum description	Hardness	Thickness	Pack of
702103		N 13 screw cap (13-425), green, closed top	F217 white / PTFE beige (firmly fixed)		1.5 mm	100 / PE bag
702050		N 13 PP screw cap, black, center hole	Red Rubber / FEP colorless	40° shore A	1.5 mm	100 / PE bag
702051		as above, but with closed top				
702926		N 13 PP screw cap, black, center hole	Silicone white / PTFE red	40° shore A	1.3 mm	100 / PE bag
702052		as above, but with closed top				
702963		N 13 PP screw cap, black, center hole (no liner)	-	-	-	100 / PE bag
702966		as above, but with closed top				
70260		- (septas only)	PTFE virginal, white	53° shore D	0.25 mm	100 / PE bag
702053		- (septas only)	Red Rubber / FEP colorless	40° shore A	1.5 mm	100 / PE bag
702927		- (septas only)	Silicone white / PTFE red	40° shore A	1.3 mm	100 / PE bag




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

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

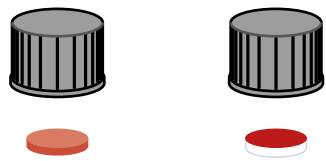
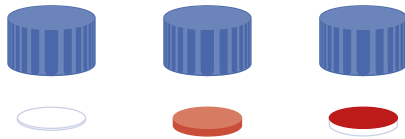
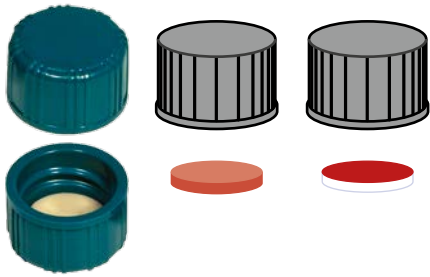
## Snap cap vials (for storage of powdery samples) N 18 + N 22 with PE snap caps

70271	70272	702019	70273
			
5 mL	10 mL	15 mL	25 mL
20 x 40 mm	22 x 50 mm	26 x 48 mm	26 x 65 mm
N 18 clear, 3 <sup>rd</sup> hydrol. class, flat bottom	N 18 clear, 3 <sup>rd</sup> hydrol. class, flat bottom	N 22 clear, 3 <sup>rd</sup> hydrol. class, flat bottom	N 22 clear, 3 <sup>rd</sup> hydrol. class, flat bottom
100 / carton	100 / carton	100 / carton	100 / carton
To be used with N 18 PE snap cap <b>70274</b>	To be used with N 18 PE snap cap <b>70274</b>	To be used with N 22 PE snap cap <b>70275</b>	To be used with N 22 PE snap cap <b>70275</b>
			
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

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

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

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


702068	702066	702032	702033	702034	702103	702051	702052
<b>N 8</b>		<b>N 9</b>			<b>N 13</b>		
							
N 8 PP screw cap, black, closed top	N 8 PP screw cap, black, closed top	N 9 PP screw cap blue, closed top	N 9 PP screw cap blue, closed top	N 9 PP screw cap blue, closed top	N 13 screw cap, green, closed top	N 13 PP screw cap, black, closed top	N 13 PP screw cap, black, closed top
Red Rubber / FEP colorless, 45° shore A, 1.3 mm	Silicone white / PTFE red, 45° shore A, 1.3 mm	PTFE virginal, white, 53° shore D, 0.25 mm	Red Rubber / FEP colorless, 45° shore A, 1.0 mm	Silicone white / PTFE red, 45° shore A, 1.0 mm	F217 white / PTFE beige (firmly fixed), 1.5 mm	Red Rubber / FEP colorless, 40° shore A, 1.5 mm	Silicone white / PTFE red, 40° shore A, 1.3 mm
100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag	100 / PE bag

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

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

702096	702311	70285	702097	702098	702099
<b>N 15</b> 15-425 thread				<b>N 18</b> 18-400 thread	<b>N 20</b> 20-400 thread
					
8 mL	8 mL	12 mL	12 mL	16 mL	24 mL
16.6 x 61 mm	16.6 x 61 mm	18.5 x 66 mm	18.5 x 66 mm	20.6 x 71 mm	22.7 x 86 mm
clear, flat bottom	amber, flat bot.	clear, flat bottom	amber, flat bot.	clear, flat bottom	clear, flat bottom
100 / carton	100 / carton	100 / carton	100 / carton	100 / PP box	100 / PP box

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


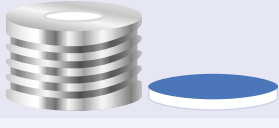



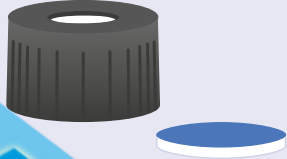
702104	702104	702105	702106
<b>N 15</b> 15-425 thread		<b>N 18</b> 18-400 thread	<b>N 20</b> 20-400 thread
			
N 15 screw cap, green, closed top	N 15 screw cap, green, closed top	N 18 screw cap, green, closed top	N 20 screw cap, green, closed top
F217 white / PTFE beige (firmly fixed), 1.5 mm	F217 white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









Headspace screw neck vials N 18

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

Ready assembled, magnetic screw closures N 18

REF	Cap description	Septum description	Hardness	Thickness	Pack of
702827 	N 18 magnetic screw cap, silver, center hole	Silicone blue transparent / PTFE white	45° shore A	1.5 mm	100 / PE bag
702055 	N 18 magnetic screw cap, silver, center hole	Silicone white / PTFE blue	45° shore A	1.5 mm	100 / PE bag
702072 	N 18 magnetic screw cap, silver, center hole	Red Rubber / TEF colorless	45° shore A	1.5 mm	100 / PE bag
702110 	- (septa only)	Silicone white / PTFE blue	45° shore A	1.5 mm	100 / PE bag
702981 	- (septa only)	Silicone blue transparent / PTFE white	45° shore A	1.5 mm	100 / PE bag
702167 	N 18 <b>polymagnetic</b> screw cap, gray, center hole	Silicone white / PTFE blue	45° shore A	1.5 mm	100 / PE bag

## Crimp neck vials N 20: 5-10 mL

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

## Crimp neck vials N 20: 20 mL

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

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

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

### Crimping tools N 20

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





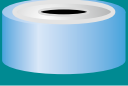




















## Ready assembled crimp closures, plain crimp caps and single septa N 20

REF	Cap description	Septum description	Hardness	Thick-ness	Pack of
 <b>Center hole caps</b>					
702773	 N 20 aluminium crimp cap, silver, center hole	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702775	 N 20 aluminium crimp cap, silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
70234.9	 N 20 aluminium crimp cap, silver, center hole	Molded septum Butyl / PTFE gray	50° shore A	3 mm	100 / PE bag
70234	 N 20 aluminium crimp cap, silver, center hole	Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
702056	 N 20 aluminium crimp cap, <b>gold</b> , center hole	 Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
70237	 N 20 aluminium crimp cap, silver, center hole	Butyl stopper, gray, <b>un-assembled</b> (separate parts)	37° shore A		100 each / PE bags
702093	 N 20 aluminium crimp cap, silver, center hole	Silicone blue transparent / PTFE colorless	40° shore A	3 mm	100 / PE bag
702094	 N 20 aluminium crimp cap, silver, center hole	Silicone white / PTFE beige	40° shore A	3 mm	100 / PE bag
702145	 N 20 aluminium crimp cap, silver, center hole	Silicone white / FEP-/Aluminium foil silver	45° shore A	3 mm	100 / PE bag
702804	 N 20 aluminium crimp cap, silver, center hole (no liner)	-	-	-	100 / PE bag
702112	 N 20 aluminium crimp cap, gold, center hole (no liner)	-	-	-	100 / PE bag
 <b>Pressure release caps</b>					
702836	 N 20 aluminium pressure release cap, silver, center hole	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702829	 N 20 aluminium pressure release cap, silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
70234.8	 N 20 aluminium pressure release cap, silver, center hole	Molded septum Butyl / PTFE gray	50° shore A	3 mm	100 / PE bag
702071	 N 20 aluminium pressure release cap, silver, center hole	Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
702927	 N 20 aluminium pressure release cap, silver, center hole	Silicone blue transparent / PTFE colorless	45° shore A	3 mm	100 / PE bag
702835	 N 20 aluminium pressure release cap, silver, center hole	Silicone white / PTFE beige	45° shore A	3 mm	100 / PE bag
702799	 N 20 aluminium pressure release cap, silver, center hole (no liner)	-	-	-	100 / PE bag
 <b>Center tear off caps</b>					
70233	 N 20 aluminium center tear off cap, <b>gold</b>	 Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
70236	 N 20 aluminium center tear off cap, silver	Butyl stopper, gray, <b>un-assembled</b> (separate parts)	37° shore A		100 each / PE bags
70236.1	 N 20 aluminium center tear off cap, silver (no liner)	-	-	-	100 / PE bag

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



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

REF	Cap description	Septum description	Hardness	Thick-ness	Pack of
 <b>Complete tear off caps</b>					
70235	 N 20 aluminium complete tear off cap, silver	Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
70238	 N 20 aluminium complete tear off cap, silver	Butyl stopper, gray, <b>un-assembled</b> (separate parts)	37° shore A		100 each / PE bags
702805	 N 20 aluminium complete tear off cap, silver (no liner)	-	-	-	100 / PE bag
 <b>Bi-metal crimp caps</b>					
702838	 N 20 bi-metal crimp cap, blue/silver, center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
702834	 N 20 bi-metal crimp cap, blue/silver, center hole	Silicone blue transparent / PTFE colorless	45° shore A	3 mm	100 / PE bag
702837	 N 20 bi-metal crimp cap, blue/silver, center hole	Silicone white / PTFE beige	45° shore A	3 mm	100 / PE bag
702833	 N 20 bi-metal crimp cap, blue/silver, center hole (no liner)	-	-	-	100 / PE bag
 <b>Magnetic crimp caps</b>					
702774	 N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702928	 N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
702928.9	 N 20 magnetic crimp cap, silver, 8 mm center hole	Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
702929	 N 20 magnetic crimp cap, silver, 8 mm center hole	Silicone blue transparent / PTFE colorless	45° shore A	3 mm	100 / PE bag
702808	 N 20 magnetic crimp cap, silver, 8 mm center hole (no liner)	-	-	-	100 / PE bag
 <b>Single septa</b>					
70277	 - (septa only)	Butyl red / PTFE gray	50° shore A	3 mm	100 / PE bag
702057	 - (septa only)	Butyl light gray / PTFE dark gray	50° shore A	3 mm	100 / PE bag
702101	 - (septa only)	Molded septum Butyl / PTFE gray	50° shore A	3 mm	100 / PE bag
702D20TB	 - (septa only)	Butyl dark gray / PTFE gray *	50° shore A	3 mm	100 / PE bag
702780	 - (septa only)	Silicone blue transparent / PTFE colorless	45° shore A	3 mm	100 / PE bag
70278	 - (septa only)	Silicone white / PTFE beige	45° shore A	3 mm	100 / PE bag
70279	 - (septa only)	Silicone white / Aluminium foil silver	50° shore A	3 mm	100 / PE bag










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



## Stoppers N 20

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

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





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

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


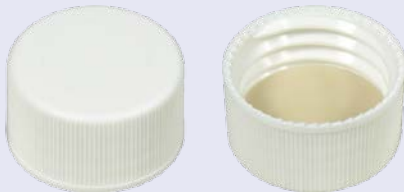


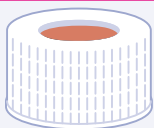
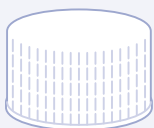
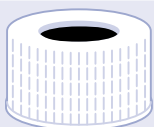
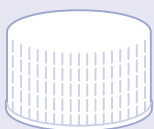
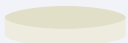
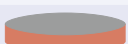


REF	Description	Pack of
702516	25 position container blue for 10 mL + 20 mL screw neck vials N 18 and crimp neck vials N 20, 130 x 130 x 80 mm, with transparent lid (suitable for freezers)	1

Screw neck vials N 24 (EPA)

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

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

REF	Cap description	Septum descript.	Hardness	Thickn.	Pack of
702058	 N 24 PP bonded screw cap, white, center hole	Silicone white / PTFE beige	45° shore A	3.2 mm	100 / PE bag
702059	 24 PP bonded screw cap, white, closed top	Silicone white / PTFE beige	45° shore A	3.2 mm	100 / PE bag
702073	 N 24 PP bonded screw cap, white, center hole	Red Rubber / TEF colorless	45° shore A	2.5 mm	100 / PE bag
702168	 N 24 PP bonded screw cap, white, center hole, with removable protection lid	Silicone natural / PTFE colorless	45° shore A	3.2 mm	100 / PE bag
702130	 N 24 PP screw cap, white, center hole	Butyl red / PTFE gray	50° shore A	2.4 mm	100 / PE bag
702102	 N 24 PP screw cap, white, closed top	Butyl red / PTFE gray	50° shore A	2.4 mm	100 / PE bag
702060	 N 24 PP screw cap, white, center hole	no liner	-	-	100 / PE bag
702061	 N 24 PP screw cap, white, closed top	no liner	-	-	100 / PE bag
702062	 - (septa only)	Silicone natural / PTFE colorless	45° shore A	3.2 mm	100 / PE bag
702063	 - (septa only)	Butyl red / PTFE gray	50° shore A	2.4 mm	100 / PE bag

## GC injection port septa

## Premium HT quality

Blister packs for cleanliness and easy handling



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

## Standard quality

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

## 706141: Septum remover (tool to remove sticking septa from the injection port)



## Capillary connectors for GC

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

REF	Product	Page	REF	Product	Page
702D20TB	septum N 20	38	702048	screw closure N 10	22
702001	crimp closure N 11	25	702049	screw cap N 10	22
702002	crimp neck vial N 8	16	70205.36	crimp neck vial N 20	35
702003	crimp neck vial N 8	16	702050	screw closure N 13	30
702004	screw neck vial N 8	17, 32	702051	screw closure N 13	30, 32
702005	insert for vials N 8	17	702052	screw closure N 13	30, 32
702005	insert for vials N 11, small opening	23	702053	septum N 12	30
702006	screw neck vial N 9	19	702054	PE plug N 12	31
702007	screw neck vial N 9	19	702055	magnetic screw closure N 18	34
702008	screw neck vial N 9	19	702056	crimp closure N 20	37
702009	screw neck vial N 9	19	702057	septum N 20	38
70201CG	crimp neck vial N 11	23	702058	bonded screw closure N 24	41
70201HP	crimp neck vial N 11	23	702059	bonded screw closure N 24	41
70201HP.2	crimp neck vial N 11	23	70206.36	crimp neck vial N 20	35
702011	screw neck vial N 10	22	702060	screw cap N 24	41
702012	screw neck vial N 10	22	702061	screw cap N 24	41
702013	screw neck vial N 10	22	702062	septum N 22	41
702014	crimp neck vial N 11	24	702063	snap ring closure N 11	27
702015	crimp neck vial N 11	24	702063.2080	snap ring closure N 11	28
702016	crimp neck vial N 11	24	702064	snap ring closure N 11	27
702017	shell vial N 8	31	702065	septum N 11	25
702018	shell vial N 12	31	702066	screw closure N 8	18, 32
702019	snap cap vial N 22	31	702067	screw closure N 8	18
702020	crimp neck vial N 20	35	702068	screw closure N 8	18, 32
70202.1	shell vial N 8	31	702069	screw closure N 8	18
702021	screw neck vial N 24	40	702070	septum N 8	18
702022	screw neck vial N 24	40	702071	crimp closure N 20	37
702023	screw neck vial N 24	40	702072	magnetic screw closure N 18	34
702024	screw neck vial N 24	40	702073	bonded screw closure N 24	41
702025	crimp closure N 8	16	702074	screw neck vial N 24	40
702026	bonded screw closure N 9	20	702075	crimp neck vial N 11	23
702027	bonded screw closure N 9	20	702076	crimp neck vial N 11	23
702028	bonded screw closure N 9	20	702077	insert for vials N 9	19
702029	screw closure N 9	20	702077	insert for vials N 10	22
70203	crimp neck vial N 13	29	702077	insert for vials N 11, wide opening	23, 27
702030	screw closure N 9	20	702078	screw neck vial N 9	19, 32
702031	screw closure N 9	20	702079	screw neck vial N 9	19, 32
702032	screw closure N 9	20, 32	702080	screw closure N 9	20
702033	screw closure N 9	20, 32	70208.36	crimp neck vial N 20	36
702034	screw closure N 9	20, 32	702081	screw closure N 9	20
702035	screw closure N 9	20	702082	screw closure N 9	20
702036	screw closure N 9	20	702083	screw closure N 9	20
702037	screw closure N 9	20	702084	screw closure N 9	20
702038	screw closure N 9	20	702085	screw closure N 9	20
702039	screw closure N 9	20	702086	crimp neck vial N 20	35
70204.36	crimp neck vial N 20	35	702088	screw neck vial N 9	19
702040	screw closure N 9	20	70209.1	crimp neck vial N 20	36
702041	septum N 9	20	702093	crimp closure N 20	37
702042	septum N 9	20	702094	crimp closure N 20	37
702043	septum N 9	20	702095	snap ring closure N 11	27
702044	bonded screw closure N 10	22	702096	screw neck vial N 15	33
702045	bonded screw closure N 10	22	702097	screw neck vial N 15	33
702046	bonded screw closure N 10	22	702098	screw neck vial N 18	33
702047	bonded screw closure N 10	22	702099	screw neck vial N 20	33



REF	Product	Page	REF	Product	Page
702100	crimp neck vial N 20	36	702208	Vial Kit screw neck N 9	21
70210.36	crimp neck vial N 20	36	702209	Vial Kit screw neck N 9	21
702101	septum N 20	38	702211	Vial Kit screw neck N 9	21
702101HP	pre-sealed combination N 11	26	702212	Vial Kit screw neck N 9	21
702102	screw closure N 24	41	702213	Vial Kit screw neck N 9	21
702103	screw closure N 13	30, 32	702214	Vial Kit screw neck N 9	21
702104	screw closure N 15	33	702215	Vial Kit crimp neck N 11	26
702105	screw closure N 18	33	702216	Vial Kit crimp neck N 11	26
702106	screw closure N 20	33	702217	Vial Kit crimp neck N 11	26
702107	screw closure N 9	20	702218	Vial Kit crimp neck N 11	26
702108	snap ring closure N 11	27	702219	Vial Kit crimp neck N 11	26
702109	screw closure N 9	20	702221	Vial Kit crimp neck N 11	26
702110	septum N 18	34	702222	Vial Kit crimp neck N 11	26
702112	crimp cap N 20	37	702223	Vial Kit crimp neck N 11	26
70212	crimp neck vial N 8	16	702224	Vial Kit crimp neck N 11	26
70212.1	crimp neck vial N 8	16	702225	Vial Kit snap ring N 11	28
702128	PE cap N 20	39	702226	Vial Kit screw neck N 9	21
702129	PE cap N 20	39	702227	Vial Kit snap ring N 11	28
70213	screw neck vial N 8	17, 32	702228	Vial Kit snap ring N 11	28
70213.2	screw neck vial N 8	17, 32	702229	Vial Kit snap ring N 11	28
702130	screw closure N 24	41	702231	Vial Kit snap ring N 11	28
702131	screw neck vial N 24	40	702232	Vial Kit snap ring N 11	28
702132	screw neck vial N 24	40	702233	Vial Kit snap ring N 11	28
702133	screw neck vial N 24	40	702234	Vial Kit snap ring N 11	28
70214CG	crimp neck vial N 11	23	702235	Vial Kit snap ring N 11	28
702141	crimp neck vial N 11	24	702236	Vial Kit snap ring N 11	28
702142	snap ring closure N 11	27	702237	Vial Kit snap ring N 11	28
702143	snap ring closure N 11	27	702238	Vial Kit screw neck N 8	18
702144	septum N 19	39	702244	Vial Kit screw neck N 9	21
702145	crimp closure N 20	37	702246	Vial Kit screw neck N 8	18
702146	crimp closure N 11	25	702247	Vial Kit screw neck N 8	18
702147	screw closure N 9	20	702248	Vial Kit screw neck N 8	18
702148	septum N 9	20	702249	Vial Kit screw neck N 8	18
70215.36	crimp neck vial N 20	35	702251	Vial Kit screw neck N 8	18
702158	screw closure N 9	20	702261	crimp neck vial N 20	35
702159	screw closure N 9	20	702263	crimp neck vial N 20	35
702160	screw cap N 9	20	702263.2	crimp neck vial N 20	35
70216.36	crimp neck vial N 20	35	702282	screw neck vial N 9	19, 32
702161	screw cap N 9	20	702283	screw neck vial N 9	19, 32
702162	screw cap N 9	20	702284	screw neck vial N 9	19, 32
702163	screw cap N 9	20	702286	screw closure N 9	20
702164	screw cap N 9	20	702287	screw closure N 9	20
702165	screw cap N 9	20	702287.1	screw closure N 9	20
702166	polymagnetic screw closure N 9	21	702288	screw closure N 9	20
702167	polymagnetic screw closure N 18	34	702288.1	screw closure N 9	20
702168	bonded screw closure N 24	41	702292	septum N 12	30
70217.36	crimp neck vial N 20	35	702293	screw neck vial N 9	19, 32
702201	Vial Kit screw neck N 9	21	70231	crimp closure N 11	25
702202	Vial Kit screw neck N 9	21	70231.1	crimp closure N 11	25
702203	Vial Kit screw neck N 9	21	70231.2	crimp closure N 11	25
702204	Vial Kit screw neck N 9	21	70231.3	crimp closure N 11	25
702205	Vial Kit screw neck N 9	21	70231.4	crimp closure N 11	25
702206	Vial Kit screw neck N 9	21	702311	screw neck vial N 15	33
702207	Vial Kit screw neck N 9	21	70232	crimp closure N 13	29

REF	Product	Page	REF	Product	Page
70233	crimp closure N 20	37	702647	GC injection port septum	42
70234	crimp closure N 20	37	702648	GC injection port septum	42
70234.8	crimp closure N 20	37	702649	GC injection port septum	42
70234.9	crimp closure N 20	37	702656	GC injection port septum	42
70235	crimp closure N 20	38	702657	GC injection port septum	42
70236	crimp closure N 20	37	702658	GC injection port septum	42
70236.1	crimp cap N 20	37	702659	GC injection port septum	42
70237	crimp closure N 20	37	70266	PE cap N 20	39
70238	crimp closure N 20	38	702660	GC injection port septum	42
70240	PE cap N 20	39	702661	GC injection port septum	42
702401	PE cap N 11	25, 27	702662	GC injection port septum	42
70242	PE cap N 20	39	702663	GC injection port septum	42
702437	screw closure N 8	18	70267	PE cap N 20	39
70245	screw closure N 8	18	70269	septum N 19	39
70248	septum N 8	18	702709	snap ring vial N 11	27
702481	septum N 8	18	70271	snap cap vial N 18	31
70249	screw cap N 8	18	702710	snap ring closure N 11	27
70250	screw cap N 8	18	702710.1	snap ring closure N 11	27
70251	crimp neck vial N 8	16	702710.2080	snap ring closure N 11	28
702514	container for vials N 8	17	702712	snap ring vial N 11	27
702514	container for vials N 9	19	702713	snap ring vial N 11	27
702514	container for vials N 10	22	702714	snap ring vial N 11	27
702514	container for vials N 11	24	702716	insert for vials N 9	19
702515	container for vials N 13	29	702716	insert for vials N 10	22
702516	container for vials N 20	39	702716	insert for vials N 11, wide opening	23, 27
70252.1	crimp closure N 8	16	702717.2	snap ring closure N 11	27
70254	crimp neck vial N 20	35	702717.2080	snap ring closure N 11	28
702540	crimp neck vial N 20	35	702718	snap ring closure N 11	27
702541	crimp neck vial N 20	35	702718.1	snap ring closure N 11	27
70256	crimp closure N 11	25	702718.2080	snap ring closure N 11	28
70257	crimp closure N 13	29	702719	Vial Kit snap ring N 11	28
70260	septum N 12	30	70272	snap cap vial N 18	31
702602	GC injection port septum	42	70273	snap cap vial N 22	31
702604	GC injection port septum	42	702730	crimp closure N 11	25
702605	GC injection port septum	42	702731	snap ring closure N 11	27
702606	GC injection port septum	42	702732	screw closure N 9	20
702609	GC injection port septum	42	70274	PE snap cap N 18	31
70261	septum N 8	18	70275	PE snap cap N 22	31
702610	GC injection port septum	42	70277	septum N 20	38
702611	GC injection port septum	42	702773	crimp closure N 20	37
702612	GC injection port septum	42	702774	crimp closure N 20	38
702613	GC injection port septum	42	702775	crimp closure N 20	37
702619	GC injection port septum	42	70278	septum N 20	38
70262	septum N 11	25	702780	septum N 20	38
702620	GC injection port septum	42	70279	septum N 20	38
702621	GC injection port septum	42	702791	septum N 22	41
702622	GC injection port septum	42	702799	crimp cap N 20	37
702623	GC injection port septum	42	702800	crimp cap N 8	16
702625	GC injection port septum	42	702801	crimp cap N 11	25
702626	GC injection port septum	42	702802	crimp cap N 13	29
702627	GC injection port septum	42	702803	crimp cap N 13	29
702628	GC injection port septum	42	702804	crimp cap N 20	37
702633	GC injection port septum	42	702805	crimp cap N 20	38
702640	GC injection port septum	42	702807	PE plug N 8	31

REF	Product	Page	REF	Product	Page
702808	crimp cap N 20	38	702924	crimp neck vial N 20	35
702809	snap ring vial N 11	27	702926	screw closure N 13	30
702813	insert for vials N 9	19	702927	crimp closure N 20	37
702813	insert for vials N 10	22	702928	crimp closure N 20	38
702813	insert for vials N 11, wide opening	23, 27	702928.9	crimp closure N 20	38
702818	insert for vials N 9	19	702929	crimp closure N 20	38
702818	insert for vials N 10	22	702931	stopper N 20	39
702818	insert for vials N 11, wide opening	23, 27	702931.1	stopper N 20	39
702818.1	insert for vials N 9	19	702962	screw neck vial N 13	30, 32
702818.1	insert for vials N 10	22	702963	screw cap N 13	30
702818.1	insert for vials N 11, wide opening	23, 27	702966	screw cap N 13	30
70282	crimp neck vial N 8	16	702968	insert for vials N 8	17
702823	crimp closure N 11	25	702968	insert for vials N 11, small opening	23
702824	insert for vials N 8	17	702968.1	insert for vials N 8	17
702824	insert for vials N 11, small opening	23	702968.1	insert for vials N 11, small opening	23
702825	insert for vials N 9	19	702972	insert for vials N 13	30
702825	insert for vials N 10	22	702973	screw neck vial N 13	30, 32
702825	insert for vials N 11, wide opening	23, 27	702974	metal spring for insert 702972	30
702826	headspace screw neck vial N 18	34	702974.1	metal spring for insert 702968	17
702826.2	headspace screw neck vial N 18	34	702981	septum N 18	34
702827	magnetic screw closure N 18	34	702995	crimp closure N 11	25
702829	crimp closure N 20	37	706141	septum remover	42
70283	crimp closure N 8	16	707971	linear capillary connector	42
702833	crimp cap N 20	38	707972	linear capillary connector	42
702834	crimp closure N 20	38	707973	capillary Y connector	42
702835	crimp closure N 20	37	735111	standard crimper N 11	24
702836	crimp closure N 20	37	735113	standard crimper N 13	29
702837	crimp closure N 20	38	735120	standard crimper N 20	36
702838	crimp closure N 20	38	735126	standard crimper N 8	16
70284	crimp closure N 11	25	735132	standard crimper N 20	36
70285	screw neck vial N 15	33	735133	standard crimper N 13	29
702857	pre-sealed combination N 9	21	735208	ergonomic crimper N 8	16
702858	pre-sealed combination N 9	21	735211	ergonomic crimper N 11	24
702859	pre-sealed combination N 11	26	735220	ergonomic crimper N 20	36
70286	crimp neck vial N 8	16	735311	ergonomic decapper N 11	24
702860	screw neck vial N 8	17	735320	ergonomic decapper N 20	36
702863	pre-sealed combination N 9	21	735408	standard decapper N 8	16
702866	headspace screw neck vial N 18	34	735511	electronic crimper N 11	24
702873	pre-sealed combination N 9	21	735520	electronic crimper N 20	36
702874	pre-sealed combination N 9	21	735611	electronic decapper N 11	24
702878	crimp closure N 8	16	735620	electronic decapper N 20	36
702879	crimp closure N 11	25	735700	high power crimping tool	24
70288	crimp closure N 11	25	735700	high power crimping tool	36
702880	crimp neck vial N 8	16	735711	crimping head N 11 for high power crimping tool	24
702881	pre-sealed combination N 11	26	735720	crimping head N 20 für high power crimping tool	36
702885	crimp neck vial N 11	23	735811	decapping head N 11 für high power crimping tool	24
702888	crimp neck vial N 11	24	735820	decapping head N 20 für high power crimping tool	36
70289	crimp closure N 8	16	735911	standard decapper N 11	24
702891	crimp neck vial N 11	24	735913	standard decapper N 13	29
702892	crimp neck vial N 11	23	735920	standard decapper N 20	36
702893	screw neck vial N 8	17, 32			
702904	septum N 19	39			
702917	crimp neck vial N 20	35			
702918	crimp neck vial N 20	35			



## Tips for correct crimping

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

Basically the following recommendations can be made:

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



Convex septum surface



Concave septum surface



Cap deformation

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



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

Our program comprises the following types of crimping tools:

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



# Real size drawings

НеваРеактив

## Screw neck vials N 8

## Screw neck vials N 9

Polypropylene

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

## Vials N 10

## Crimp neck vials N 11

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

## Snap ring vials N 11

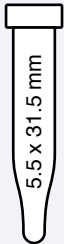

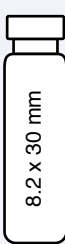


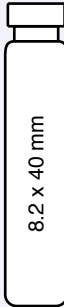
## Crimp and screw neck vials N 13

702714	702713 702712	702709	702809
Page 27			

70203	702962 702973
Pages 29, 30	


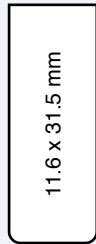
НеваРеактив

## Crimp neck vials N 8

					
5.5 x 31.5 mm	5.5 x 31.5 mm	8.2 x 30 mm	7 x 40 mm	7 x 40 mm	8.2 x 40 mm
70286	70282	70251	70212 70212.1	702002 702003	702880

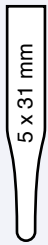
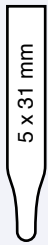



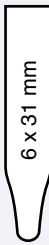

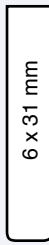

Page 16

## Shell vials

	
8.2 x 40 mm	11.6 x 31.5 mm
70202.1 702017	702018

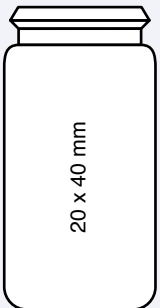
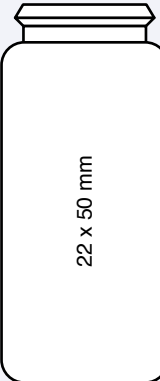
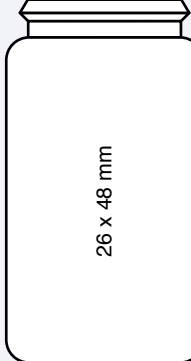

Page 31

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

for small opening vials				for wide opening vials				
								
5 x 31 mm	5 x 31 mm	5 x 29 mm	5 x 31 mm	6 x 31 mm	6 x 31 mm	5.7 x 29 mm	6 x 31 mm	6 x 40 mm
702968	702968.1	702824	702005	702813 702077 <sup>s</sup>	702716	702818 702818.1 <sup>s</sup>	702825	702972

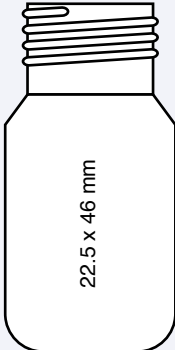
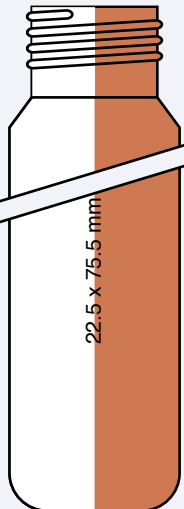
Pages 17, 23      Pages 19, 22, 23, 27 (s: silanized)      Page 30

## Snap cap vials N 18 and N 22

			
20 x 40 mm	22 x 50 mm	26 x 48 mm	26 x 65 mm
70271	70272	702019	70273

Page 31

## Screw neck vials N 18

	
22.5 x 46 mm	22.5 x 75.5 mm
702866	702826 702826.2

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# Real size drawings

НеваРеактив

## Crimp neck vials N 20: 5-10 mL

70204.36 70215.36	702917	702020	70205.36 70216.36	702918	702924

Page 35

## Crimp neck vials N 20: 20 mL

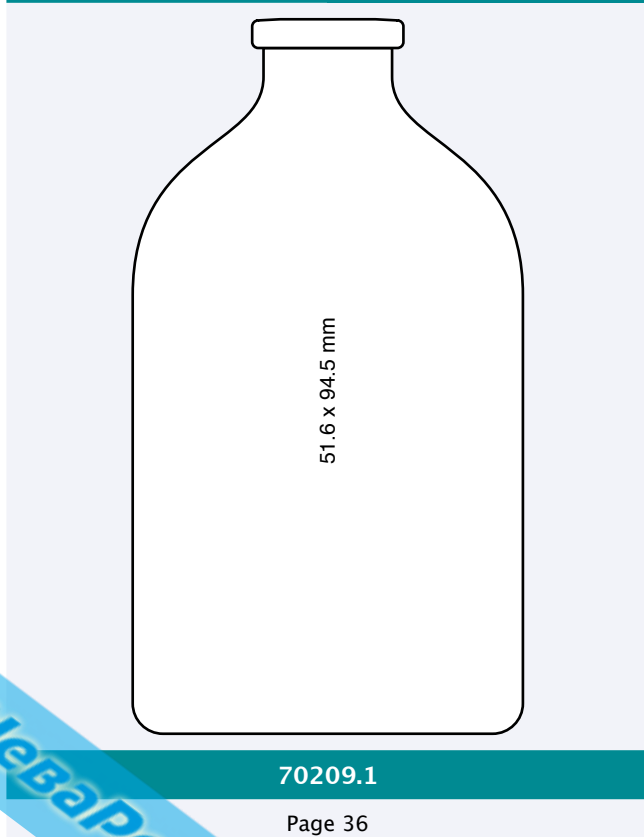
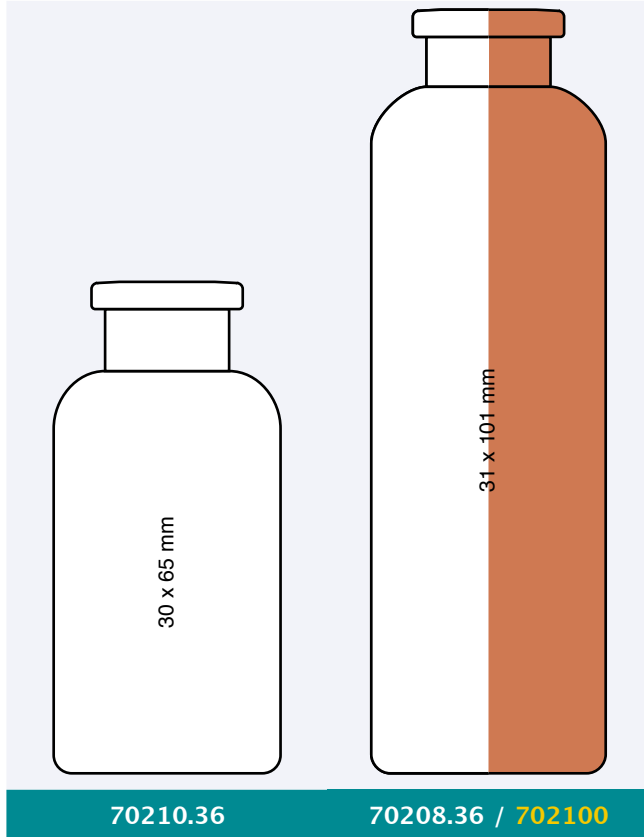
70206.36 70217.36	702086	70254 702541	702540	702261	702263 702263.2

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НеваРеактив

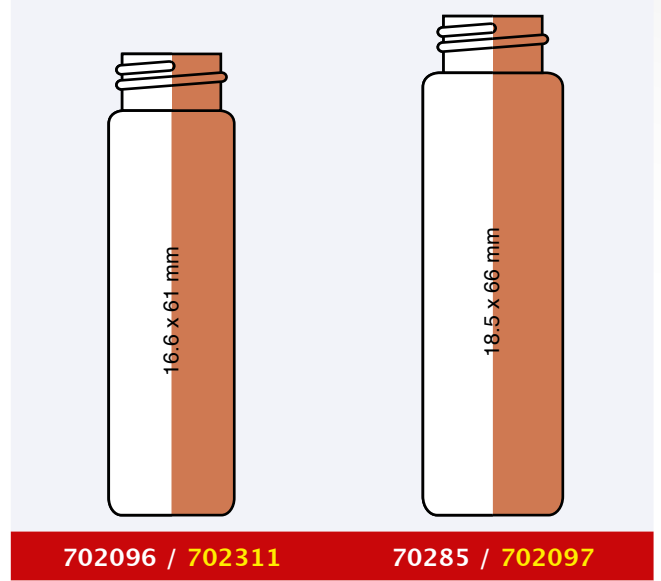


## Crimp neck vials N 20: 25, 50, 100 mL



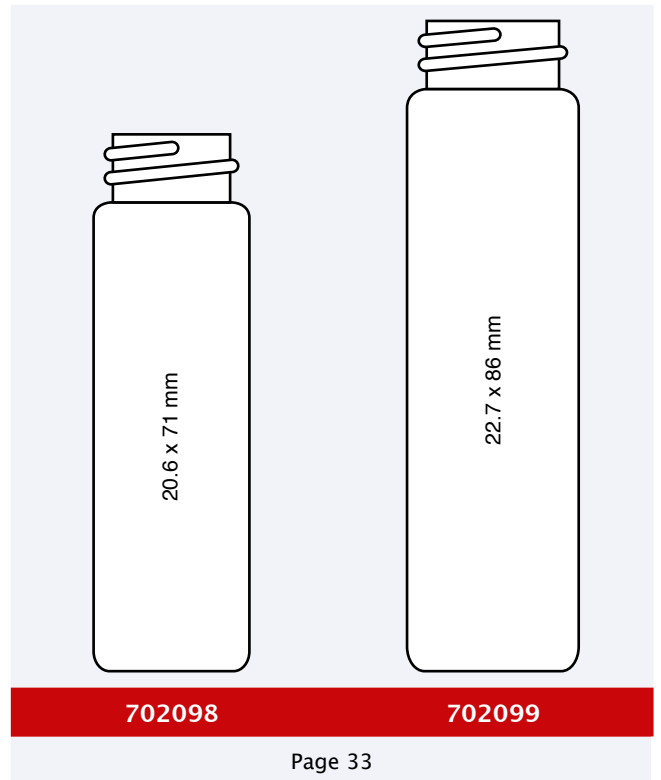
## Screw neck vials for storage of liquid samples

N 15



N 18

N 20



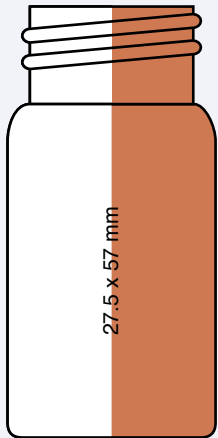
Page 33

70209.1

Page 36



Screw neck vials N 24



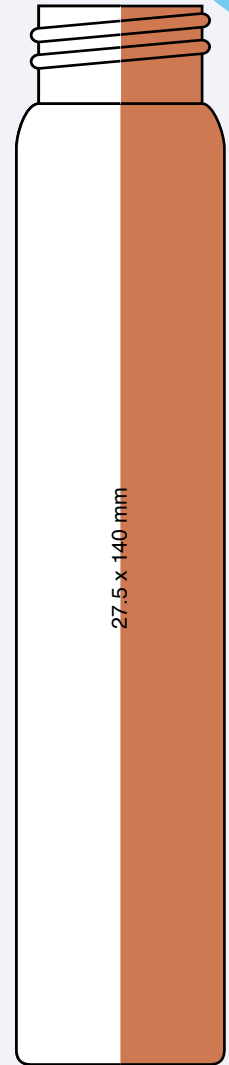
702021  
702022



702132  
702133



702023  
702024



702074  
702131



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

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

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

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



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

## Technical characteristics of vials and closures

Except for the snap cap vials for storage of powdery samples and the blow-molded glass 70209.1, the vials of our program are made from 1<sup>st</sup> hydrolytic class glass. The dimensions stated in this catalog with respect to vial diameter and height are exact values. Please note that other suppliers often list rounded values (e.g., 12 x 32 mm instead of 11.6 x 32 mm), the actual dimensions are, however, identical due to the required fit in the instrument. Our data concerning the volume are defined realistically usable volumes, not calculated values. For reasons of safety we state rather low values. Here, too, deviations of data of other suppliers may occur, which either use the calculated volume (e.g., 2 mL instead of 1.5 mL) or a defined, realistic usable volume in the upper range (e.g., 1.8 mL instead of 1.5 mL).

## Samples for evaluation

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

## Website guide

Up-dated product range vials and caps:

VialFinder as translation tool for cross-references:

General literature on chromatography products (PDF download):

Instructions for manual crimping tools (PDF download):

Instructions for electronic crimping tools (PDF download):

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

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

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

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

→ Customer services → Catalog download

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

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

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



## General remarks

### Product literature

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

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

### Closure selection in GC / HPLC

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

Basically the following recommendations can be made:

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





## Septa guide

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

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Waters®: Waters Corp (USA); TurboMatrix™: PerkinElmer (USA); Merck®: Merck (Germany)

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

## Product use restriction

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

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

MACHEREY-NAGEL products are suited for QUALIFIED PERSONNEL ONLY !

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

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

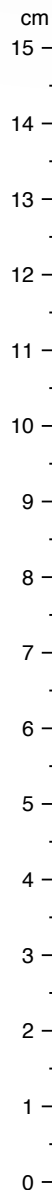
MACHEREY-NAGEL does not assume any responsibility for damages due to improper application of our products in other fields of application.

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

## General remarks

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

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# Vials and caps

НеваРеактив

Local distributor



as individual components  
as Vial Kits  
as pre-sealed vials

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

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

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