NOVALENT
GENETEC KOVALENT

Chromatography solutions

Your partner for sample handling

NOVALENT
GENETEC KOVALENT

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Introduction

This catalogue provides an overview of our wide-ranging portfolio of chromatography vials, closures, well plates, mats and tools.

We offer products suitable for all autosamplers and most application areas.

THE SKUS LISTED IN THIS CATALOG ARE THE MANUFACTURER'S ORIGINAL SKUS. IF YOUR SYSTEM USES DIFFERENT SKUS AND YOU PREFER NOT TO UPDATE THEM TO THE DISCREPANCY.

IF YOUR SKUS MATCH THE MANUFACTURER'S, NO CHANGES ARE NECESSARY.

Introduction

How to use this catalog

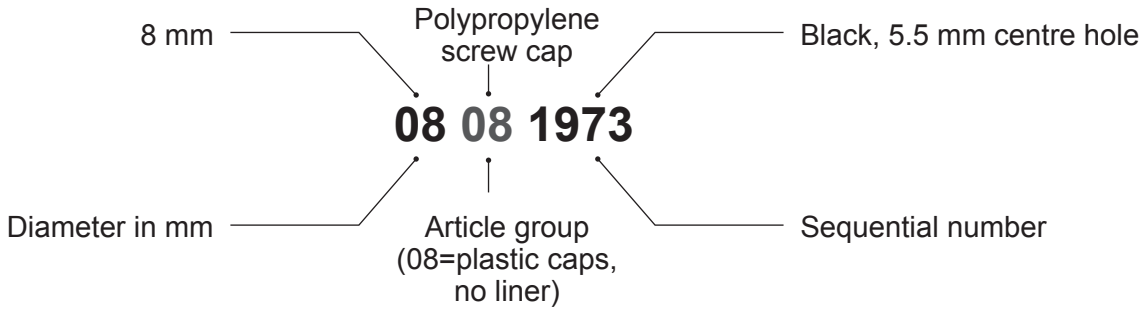
Handling of the catalog

Each chapter includes all products that belong together, i.e. vials (e.g. all types of short thread vials or micro-vials), suitable inserts for these vials, appropriate closures for these vials (e.g. all types of short thread closures) and – if available – individual septa/caps.

The catalogue starts with the vials that have the smallest nominal diameter, continuing with increasing nominal diameter. Other accessories like vial racks, syringe filters, and crimpers can be found towards the end of the catalogue.

Article number system

Our 8 digital article number comprises the following indications:



A list of our article groups

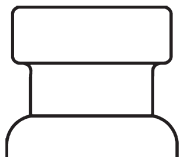
No.	Description
01	Metal crimp and screw caps (no liner)
02	Septa
03	Assembled closures of metal caps and septa
04	Bonded closures
05	96 and 384 well plates (empty)
06	Crimping tools + crimping heads
07	Decapping tools + decapping heads
08	Plastic caps (no liner)
09	Glass articles
10	Stoppers
11	Flip top/flip-off closures
12	Flip tear-up closures
13	Springs
14	Combination of glass and plastic articles
15	Assembled closures of plastic caps and septa
16	Syringe filters
17	Capillary connectors

No.	Description
19	Plastic vials + inserts
20	96 well plates with inserts + caps/covers
21	Vial racks + storage boxes
23	2in1 kits 1.5 mL screw neck ND8
24	2in1 kits 1.5 mL short thread ND9
25	2in1 kits 1.5 mL crimp neck ND11
26	2in1 kits 1.5 mL snap neck ND11
27	2in1 kits 1 mL, 2 mL and 4 mL shell vials
28	2in1 kits 4 mL screw neck ND13
29	Sealmat cover
31	Combination of glass and metal articles (precrimped vials)
32	2in1 kits 1.5 mL screw neck ND10
33	2in1 kits 20 mL headspace ND20 + ND18
36	Syringes
40	Certified vial kits
99	Others

Contents

Contents

Crimp neck ND8



Description

- Low volume sample vials for 6 mm, 7 mm and 8 mm autosampler trays
- Compatible with 8 mm crimp top closures
- 8 mm crimp top closure minimises exposure between sample solvent and septum
- Support sleeve or appropriate rack required
- 1st hydrolytic class glass (Type 1) in clear and amber

Contents	Link
Crimp neck vials ND8	
Crimp neck closures ND8	

Crimp neck ND8

Crimp neck vials ND8

Cat. no.	08 09 0405	08 09 0406	08 09 0284	08 09 0845	08 09 0953
Size (mL)	0.8	0.8	0.8	1.0	1.0
Dimensions (mm)	40 x 7	40 x 7	30 x 8.2	40 x 8.2	40 x 8.2
Description	Clear	Amber	Clear	Clear	Amber
TFVol. (mL)	0.9	0.9	0.9	1.1	1.1
UsVol. (mL)	0.8	0.8	0.8	1.0	1.0
MWVol. (µL)	40	40	40	50	50
Res. vol. (µL)	<11	<11	<11	<20	<20
Unit size	10 x 100/pack	10 x 100/pack	100/pack	100/pack	100/pack

Cat. no.	08 09 0606	08 09 0276	08 09 0305	08 09 0258
Size (mL)	0.2	0.3	0.6	0.6
Dimensions (mm)	31.5 x 5.5	31.5 x 5.5	40 x 7	40 x 7
Description	Clear, conical	Clear, round	Clear, conical	Amber, conical
TFVol. (mL)	0.3	0.4	0.6	0.6
UsVol. (mL)	0.2	0.3	0.6	0.6
MWVol. (µL)	25	30	25	25
Res. vol. (µL)	<3	<6	<3	<3
Unit size	10 x 100/pack	10 x 100/pack	10 x 100/pack	10 x 100/pack

Crimp neck ND8

Crimp neck closures ND8

Natural rubber/TEF and RedRubber/PTFE closures



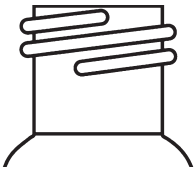
Cat. no.	08 03 0451	08 03 1935	08 03 2042
Cap material	Aluminum, clear lacquered	Aluminum, clear lacquered	Aluminum, clear lacquered
Hole (mm)	4	4	4
Septum material	Natural rubber red-orange/ TEF transparent	Natural rubber red-orange/ TEF transparent	RedRubber™/ PTFE beige
Durometer	60° shore A	60° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Silicone/PTFE closures



Cat. no.	08 03 0249	08 03 0113	08 03 1156
Cap material	Aluminum, clear lacquered	Aluminum, clear lacquered	Aluminum, clear lacquered
Hole (mm)	4	4	4
Septum material	Silicone white/ PTFE red UltraClean™	PTFE red/silicone white/ PTFE red UltraClean	Silicone white/PTFE red, with slit
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.3	1.0	1.3
Unit size	100/pack	100/pack	100/pack

Screw neck ND8



Description

- 8-425 screw thread finish
- Use with inserts with a diameter of 5 mm
- 1st hydrolytic class glass (Type 1) in clear and amber
- Vials and closures available as convenient 2in1 kits

Contents	Link
Screw neck vials ND8	
Inserts with small opening for vials ND8	
Screw closures ND8	
PP Screw caps ND8	
Septa 8 mm	
Kits	

Screw neck ND8

Screw neck vials ND8

Cat. no.	11 09 0210	11 09 0259
Silanized cat. no.	11 09 2175	-
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear	Amber
TFVol. (mL)	1.9	1.9
UsVol. (mL)	1.5	1.5
MWVol. (µL)	200	200
Res. vol. (µL)	<110	<110
Unit size	100/pack	100/pack

Cat. no.	11 09 0419	11 09 0382	11 09 0417
Size (mL)	1.5	1.5	1.0
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, label + filling lines	Amber, label + filling lines	Clear, conical
TFVol. (mL)	1.9	1.9	1.3
UsVol. (mL)	1.5	1.5	1.0
MWVol. (µL)	200	200	30
Res. vol. (µL)	<110	<110	<3
Unit size	100/pack	100/pack	100/pack

Screw neck ND8

Inserts with small opening for vials ND8

Cat. no.	05 09 0129	05 09 0269	05 09 1674
Size (mL)	0.2	0.2	0.3
Dimensions (mm)	31 x 5	31 x 5	31 x 5
Description	Clear, pulled point	Clear, conical bottom	Clear, flat bottom
TFVol. (mL)	0.2	0.3	0.3
UsVol. (mL)	0.2	0.2	0.3
MWVol. (µL)	25	30	40
Res. vol. (µL)	<1	<2	<8
Unit size	10 x 100/pack	10 x 100/pack	10 x 100/pack

Cat. no.	05 09 0968	05 09 0279*	05 13 0426**
Size (mL)	0.2	0.1	Spring
Dimensions (mm)	29 x 5	27.5 x 4	36 x 5
Description	Clear, with assembled plastic spring	Clear	-
TFVol. (mL)	0.2	0.1	-
UsVol. (mL)	0.2	0.1	-
MWVol. (µL)	25	25	-
Res. vol. (µL)	<1	<1	-
Unit size	10 x 100/pack	10 x 100/pack	100/pack

* Metal spring required (05 13 0426)
** For insert (05 09 0279)

Screw neck ND8

Screw closures ND8

Natural rubber/TEF, RedRubber/PTFE and butyl/PTFE closures



Cat. no.	08 15 0460	08 15 1965	08 15 1637
Description cap	PP, black	PP, black	PP, black
Hole (mm)	5.5	5.5	5.5
Septum material	Natural rubber red-orange/ TEF* transparent	RedRubber/PTFE beige	Butyl red/PTFE grey
Durometer	60° shore A	45° shore A	55° shore A
Thickness (mm)	1.3	1.0	1.3
Unit size	100/pack	100/pack	100/pack

*Teflon

Silicone/PTFE closures





Cat. no.	08 15 0293	08 15 0427	08 15 0886	08 15 0294	08 15 1449
Description cap	PP, black	PP, black	PP, black	PP, black	PP, black
Hole (mm)	5.5	5.5	5.5	5.5	5.5
Septum material	Silicone white/ PTFE red UltraClean	Silicone cream/ PTFE red UltraClean	Silicone dark blue/ PTFE white	PTFE red/silicone white/PTFE red	Silicone white/ PTFE red, with slit
Durometer	45° shore A	55° shore A	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.3	1.5	1.3	1.0	1.3
Unit size	100/pack	100/pack	100/pack	100/pack	100/pack

Screw neck ND8

Screw closures ND8

Natural rubber/TEF, RedRubber/PTFE, butyl/PTFE and silicone/PTFE closures, closed top

Cat. no.	08 15 0654	08 15 2105
Description cap	PP, black	PP, black
Septum material	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige
Durometer	60° shore A	45° shore A
Thickness (mm)	1.3	1.0
Unit size	100/pack	100/pack

Cat. no.	08 15 1653	08 15 1040
Description cap	PP, black	PP, black
Septum material	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	55° shore A	45° shore A
Thickness (mm)	1.3	1.3
Unit size	100/pack	100/pack

Screw neck ND8

PP screw caps ND8

Cat. no.	08 08 0027	08 08 0420
Cap	PP, black	PP, black
Hole (mm)	5.5	Closed top
Unit size	100/pack	100/pack

Cat. no.	08 08 0435	08 08 0435
Cap	PP, white	PP, white
Hole (mm)	5.5	Closed top
Unit size	100/pack	100/pack

Screw neck ND8

Septa 8 mm




Cat. no.	08 02 0177	08 02 0232	08 02 0355	08 02 1966	08 02 1633
Description	PTFE virginal	Natural rubber red-orange/ TEF transparent	Natural rubber red-orange/ TEF transparent	RedRubber/ PTFE beige	Butyl red/PTFE grey
Durometer	53° shore D	60° shore A	60° shore A	45° shore A	55° shore A
Thickness (mm)	0.25	1.0	1.3	1.0	1.3
Unit size	1000/pack	1000/pack	1000/pack	1000/pack	1000/pack





Cat. no.	08 02 0103	08 02 0009	08 02 0881	08 02 0039	08 02 0005
Description	Silicone white/ PTFE red	Silicone cream/ PTFE red	Silicone dark blue/ PTFE white	Silicone white/ PTFE blue, with slit	PTFE red/silicone white/PTFE red
Durometer	45° shore A	55° shore A	45° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.5	1.3	0.9	1.0
Unit size	1000/pack	1000/pack	1000/pack	1000/pack	1000/pack

Screw neck ND8

Kits

2in1 kits

Cat. no.	11 23 1045
Vial	11 09 0210
Size (mL)	1.5
Dimensions (mm)	32 x 11.6
Description	Clear
Closure	08 15 0460
Description	PP, black, natural rubber red-orange/TEF transparent
Hole (mm)	5.5
Durometer	60° shore A
Thickness (mm)	1.3
Unit size	100/pack

Cat. no.	11 23 1046	11 23 1280
Vial	11 09 0210	11 09 0419
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear	Clear, small opening, label + filling lines
Closure	08 15 0293	08 15 0293
Description	PP, black, silicone white/PTFE red	PP, black, silicone white/PTFE red
Hole (mm)	5.5	5.5
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3	1.3
Unit size	100/pack	100/pack

Cat. no.	11 23 1098	11 23 1100
Vial	11 09 0259	11 09 0382
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Amber	Amber, small opening, label + filling lines
Closure	08 15 0293	08 15 0293
Description	PP, black, silicone white/PTFE red	PP, black, silicone white/PTFE red
Hole (mm)	5.5	5.5
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3	1.3
Unit size	100/pack	100/pack

Screw neck ND8

Kits

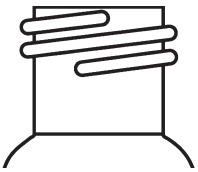
Pre-assembled vials with small opening ND8

- Pre-screwed vials reduce the risk of contamination of vials in laboratories
- Some special applications (e.g. in the tobacco industry) require a pre-screwed vial or pre-assembled inserts
- Pre-assembled vials are available with any of the screw neck vials and any closure of your choice, upon request

Cat. no.	**11 14 1716**
Vial	11 09 0210
Size (mL)	1.5
Dimensions (mm)	32 x 11.6
Description	Clear
Closure	08 15 0293
Description	PP, black
Septum material	Silicone white/PTFE red
Hole (mm)	5.5
Durometer	45° shore A
Thickness (mm)	1.3
Unit size	100/pack

Cat. no.	**11 14 1739**
Vial	11 09 0210
Size (mL)	1.5
Dimensions (mm)	32 x 11.6
Description	Clear
Cap	08 08 0027
Description	PP, black
Hole (mm)	5.5
Durometer	55° shore A
Thickness (mm)	0.9, slit
Septum	08 02 0039
Septum material	Silicone white/PTFE blue
Unit size	100/pack

Short thread ND9



Description

- Compatible with almost all autosamplers
- Use for LC and GC applications
- Wide neck opening design allows easy filling
- Microsampling and high recovery vials allow maximum sample extraction without the need for separate inserts
- Available silanized (deactivated) for optimal recovery of critical polar compounds
- Use with inserts with a diameter of 6 mm
- 1st hydrolytic class glass (Type 1) in clear and amber
- TopSert™ microsampling vials are a cost-effective alternative to glass vials with fused inserts
- Vials and closures available as convenient 2in1 kits

Contents	Link
Short thread vials ND9, wide opening	
Short thread SureStop vials ND9, wide opening	
Short thread inserts for ND9 wide opening vials	
Short thread plastic vials ND9, wide opening	
Short thread AVCS closures ND9	
Short thread magnetic AVCS closures ND9	
Short thread MS caps ND9	
Short thread PP caps ND9	
Short thread bonded closures ND9	
Kits	

Short thread ND9

Short thread vials ND9, wide opening



Cat. no.	11 09 0500	11 09 0519	11 09 0520
Silanized cat. no.	11 09 1241	11 09 2131	11 09 1242
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear, label + filling lines	Amber, label + filling lines
TFVol. (mL)	1.9	1.9	1.9
UsVol. (mL)	1.5	1.5	1.5
MWVol. (µL)	200	200	200
Res. vol. (µL)	<120	<120	<120
Unit size	100/pack	100/pack	100/pack




Cat. no.	11 09 0999	11 09 1957	11 09 2357	11 09 2656
Size (mL)	0.2	0.2	0.3	0.3
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, label + filling lines, top bonded	Amber, label + filling lines, top bonded	Clear, base bonded	Amber, base bonded
TFVol. (mL)	0.3	0.3	0.4	0.4
UsVol. (mL)	0.2	0.2	0.3	0.3
MWVol. (µL)	25	25	30	30
Res. vol. (µL)	<1	<1	<3	<3
Unit size	100/pack	100/pack	100/pack	100/pack

Short thread ND9

Short thread vials ND9, wide opening



Cat. no.	11 09 0620	11 09 2275	11 09 3563
Silanized cat. no.	11 09 2178	-	-
Size (mL)	1.5	1.1	1.1
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear	Clear, label
TFVol. (mL)	1.6	1.4	1.4
UsVol. (mL)	1.5	1.1	1.1
MWVol. (µL)	30	25	25
Res. vol. (µL)	<3	<1	<1
Unit size	100/pack	100/pack	100/pack




Cat. no.	11 09 2873	11 09 3404	11 14 1189	11 14 1655
Silanized cat. no.	-	-	11 14 1265	11 14 1694
Size (mL)	1.3	1.3	0.2	0.2
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, conical base	Amber, conical base	TopSert, TPX, clear, with glass micro insert	TopSert, TPX, amber, with glass micro insert
TFVol. (mL)	1.5	1.5	0.4	0.4
UsVol. (mL)	1.3	1.3	0.2	0.2
MWVol. (µL)	25	25	25	25
Res. vol. (µL)	<3	<3	<1	<1
Unit size	100/pack	100/pack	100/pack	100/pack

Short thread ND9

Short thread SureStop vials ND9, wide opening

Cat. no.	11 09 2746	11 09 2747	11 09 2748
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, overwind-barrier	Clear, label + filling lines, overwind-barrier	Amber, label + filling lines, overwind-barrier
TFVol. (mL)	1.9	1.9	1.9
UsVol. (mL)	1.5	1.5	1.5
MWVol. (µL)	200	200	200
Res. vol. (µL)	<120	<120	<120
Unit size	100/pack	100/pack	100/pack

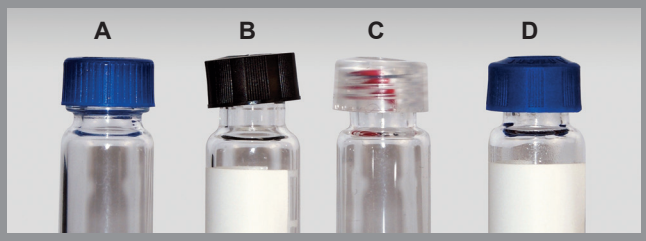
AVCS caps and SureStop vials

The next-generation of sample handling

The patented Thermo Scientific™ SureStop™ and AVCS™ technology is designed to remove subjectivity around achieving the optimal closure compression when closing a vial. As an integral component of AVCS technology, SureStop vials offer the sealing and performance characteristics of a crimp top vial and the versatility and convenience of a screw thread vial. This is achieved by incorporating a definite stop point into the design of the vial finish, preventing over tightening of the closure.

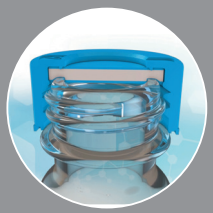
Compatible with all LC and GC autosamplers, our SureStop vials with our AVCS caps:

- Effectively closures every time
- Obtain cleaner spectra
- More consistent data for GC and LC applications
- Reduce instrument downtime and ensure sample throughput
- Standardize your stockroom



Examples of vial and closure misalignment/ deformation. (A) SureStop vial self aligning cap; (B) generic vial, cap tilt; (C) generic vial, septum dislodged; (D) generic vial, deformed top.

Cap tilt and septum displacement due to over tightening



SureStop provides optimal cap positioning

Short thread ND9

Short thread inserts for ND9 wide opening vials




Cat. no.	06 09 0357	06 09 0669	06 09 0865	06 09 0866
Silanized cat. no.	06 09 1240	-	06 09 1343	06 09 1792
Size (mL)	0.3	0.3	0.3	0.4
Dimensions (mm)	31 x 6	31 x 6	29 x 5.7	31 x 6
Description	Clear, 15 mm tip	Clear, 12 mm tip	Clear, with assembled plastic spring	Clear, flat bottom
TFVol. (mL)	0.3	0.3	0.3	0.5
UsVol. (mL)	0.3	0.3	0.3	0.4
MWVol. (µL)	30	30	30	40
Res. vol. (µL)	<4	<4	<4	<8
Unit size	10 x 100/pack	10 x 100/pack	10 x 100/pack	10 x 100/pack


Cat. no.	06 19 2240	06 19 2241
Size (mL)	0.3	0.3
Dimensions (mm)	29 x 6	29 x 6
Description	Clear, PP, 10 mm tip, filling lines	Clear, PP, 10 mm tip, filling lines, plastic spring
TFVol. (mL)	0.3	0.3
UsVol. (mL)	0.3	0.3
MWVol. (µL)	30	30
Res. vol. (µL)	<4	<4
Unit size	10 x 100/pack	10 x 100/pack

Short thread ND9

Short thread plastic vials ND9, wide opening

Cat. no.	11 19 1205	11 19 1516	11 19 1706
Size (mL)	1.5	1.5	0.7
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	PP, transparent, filling lines	PP, amber, filling lines	PP, transparent
TFVol. (mL)	1.9	1.9	0.9
UsVol. (mL)	1.5	1.5	0.7
MWVol. (µL)	200	200	150
Res. vol. (µL)	<110	<110	<80
Unit size	100/pack	100/pack	100/pack

Cat. no.	11 19 0932	11 19 1021	11 19 1216
Size (mL)	0.3	0.3	0.3
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	PP, transparent	TPX, crystal clear	PP, amber
TFVol. (mL)	0.4	0.4	0.4
UsVol. (mL)	0.3	0.3	0.3
MWVol. (µL)	30	30	30
Res. vol. (µL)	<4	<4	<4
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Short thread AVCS closures ND9

- AVCS (Advanced Vial Closure System) closures offer easy-on, easy off convenience with just one turn
- Septum push through virtually eliminated due to improved interior geometry
- Consistent sealing capability, reduces user-to-user variance
- Improved autosampler compatibility
- Closures have the profile of a crimp or snap closure for compatibility with robotic autosamplers
- Cost effective alternative to caps with bonded septa
- Optimised ergonomics, fine texturing and evenly spaced ribbing for superior handling
- Polypropylene (PP) caps are chemically inert and suitable for most chromatography applications

Transparent PP short thread AVCS closures




Cat. no.	09 15 0981	09 15 0478	09 15 2011	09 15 0481
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	RedRubber/ PTFE beige	Silicone white/ PTFE red UltraClean
Hole (mm)	6	6	6	6
Durometer	53° shore D	60° shore A	45° shore A	55° shore A
Thickness (mm)	0.2	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack	100/pack



Cat. no.	09 15 0480	09 15 0852	09 15 2021
Septum material	PTFE red/silicone white/ PTFE red	Silicone white/PTFE blue, with slit	Silicone white/PTFE red, pre-cut (Y)
Hole (mm)	6	6	6
Durometer	45° shore A	55° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

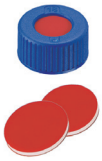
Short thread ND9

Short thread AVCS closures ND9

Blue PP short thread AVCS closures




Cat. no.	09 15 0982	09 15 0867	09 15 1819	09 15 0838
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige	Silicone white/ PTFE red UltraClean
Hole (mm)	6	6	6	6
Durometer	53° shore D	60° shore A	45° shore A	55° shore A
Thickness (mm)	0.2	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack	100/pack



Cat. no.	09 15 0868	09 15 2016	09 15 4440*
Septum material	PTFE red/silicone white/ PTFE red	Silicone white/PTFE red, pre-cut (Y)	Silicone white/polyimide red
Hole (mm)	6	6	6
Durometer	45° shore A	55° shore A	40° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

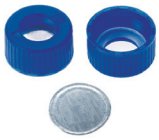
* Can be used for PFAS analysis

Short thread ND9

Short thread AVCS closures ND9

Blue PP short thread AVCS closures





Cat. no.	09 15 0869	09 15 2292	09 15 2487
Septum material	Silicone white/PTFE blue, with slit	Silicone dark blue-translucent/ PTFE natural	Aluminum liner, sealed by flat sealing ring
Hole (mm)	6	6	6
Durometer	55° shore A	35° shore A	-
Thickness (mm)	1.0	1.0	0.06
Unit size	100/pack	100/pack	100/pack



Cat. no.	09 15 1828	09 15 1887	09 15 1799
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	Silicone white/PTFE red UltraClean
Hole (mm)	Closed top	Closed top	Closed top
Durometer	53° shore D	60° shore A	55° shore A
Thickness (mm)	0.2	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Short thread AVCS closures ND9

Red PP short thread AVCS closures

Cat. no.	09 15 1337	09 15 1176	09 15 2012
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige
Hole (mm)	6	6	6
Durometer	53° shore D	60° shore A	45° shore A
Thickness (mm)	0.2	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Cat. no.	09 15 1178	09 15 1177	09 15 1179
Septum material	Silicone white/PTFE red UltraClean	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, with slit
Hole (mm)	6	6	6
Durometer	55° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Short thread AVCS closures ND9

Black PP short thread AVCS closures



Cat. no.	09 15 1668	09 15 1570	09 15 2013
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige
Hole (mm)	6	6	6
Durometer	53° shore D	60° shore A	45° shore A
Thickness (mm)	0.2	1.0	1.0
Unit size	100/pack	100/pack	100/pack



Cat. no.	09 15 1572	09 15 1571	09 15 1669
Septum material	Silicone white/PTFE red UltraClean	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, with slit
Hole (mm)	6	6	6
Durometer	55° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Short thread AVCS closures ND9

Green PP short thread AVCS closures



Cat. no.	09 15 1539	09 15 1356	09 15 1911
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige
Hole (mm)	6	6	6
Durometer	53° shore D	60° shore A	45° shore A
Thickness (mm)	0.2	1.0	1.0
Unit size	100/pack	100/pack	100/pack



Cat. no.	09 15 1332	09 15 1485	09 15 1746
Septum material	Silicone white/PTFE red UltraClean	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, with slit
Hole (mm)	6	6	6
Durometer	55° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Short thread AVCS closures ND9

Yellow PP short thread AVCS closures



Cat. no.	09 15 2015	09 15 1542	09 15 2014
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige
Hole (mm)	6	6	6
Durometer	53° shore D	60° shore A	45° shore A
Thickness (mm)	0.2	1.0	1.0
Unit size	100/pack	100/pack	100/pack

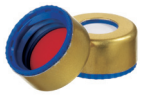


Cat. no.	09 15 1527	09 15 1486	09 15 1745
Septum material	Silicone white/PTFE red UltraClean	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, with slit
Hole (mm)	6	6	6
Durometer	55° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Short thread magnetic AVCS closures ND9

- Suitable for use with all magnetic transport carriers
- More convenient and safer to handle than 11 mm magnetic crimp closures
- Ready-to-use closures



Cat. no.	09 15 1907
Septum material	Silicone white/PTFE red UltraClean
Hole (mm)	6
Durometer	55° shore A
Thickness (mm)	1.0
Unit size	100/pack

Short thread MS caps ND9

- One component closure – no bleeding
- Absolutely inert
- Tight like a septa
- Pierceable like a septa
- LC/GC MS certified

Cat. no.	09 08 2000
Septum feature	With thinned penetration area and diaphragm
Unit size	100/pack

Short thread ND9

Short thread PP caps ND9

- Easy to penetrate
- Cost effective closure without septum
- Single use only
- Can be used for PFAS analysis

Cat. no.	09 08 2771	09 08 2772
Septum material	PP, clear	PP, blue
Unit size	100/pack	100/pack

Short thread bonded closures ND9

- The septum material is an especially pure silicone material, which optimizes the product performance
- The PTFE layer has been modified, which permits an easier penetration of the needle

Cat. no.	09 04 1220	09 04 1533	09 04 1534
Description cap	PP short thread, black	PP short thread, blue	PP short thread, blue
Hole (mm)	6	6	6
Septum material	Silicone white/PTFE red	Silicone beige/PTFE white	Silicone beige/PTFE white, with slit
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.3	1.3	1.3
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Kits

2in1 kits

Cat. no.	11 24 1622	11 24 1859
Vial	11 09 0500	11 09 0519
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear	Clear, label + filling lines
Closure	09 04 1534	09 04 1533
Description	9 mm UltraBond PP short thread cap, blue	9 mm UltraBond PP short thread cap, blue
Septum material	Silicone beige/PTFE white	Silicone beige/PTFE white
Hole (mm)	6	6
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3, slit	1.3
Unit size	100/pack	100/pack

Cat. no.	11 24 1860	11 24 1861	11 24 1696
Vial	11 09 0519	11 09 0520	11 09 0520
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, label + filling lines	Amber, label + filling lines	Amber, label + filling lines
Closure	09 04 1534	09 04 1533	09 04 1534
Description	9 mm UltraBond PP short thread, blue	9 mm UltraBond PP short thread, blue	9 mm UltraBond PP short thread, blue
Septum material	Silicone beige/PTFE white	Silicone beige/PTFE white	Silicone beige/PTFE white
Hole (mm)	6	6	6
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.3, slit	1.3	1.3, slit
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Kits

HPLC and GC certified vial kits

HPLC and GC certified vial kits certifications are getting more and more important, in order to make processes more reproducible and avoid possible sources of errors from the beginning. For us, high quality, consistency and quality control have always been very important and have been documented by HPLC and GC certified vials and closures.

- Each batch of HPLC and GC certified kit is tested on 15 critical parameters. In a realistic method, an HPLC/UV and GC/MS test of vials/closure combination of blanks and contaminations will be carried out
- The batch specific test certificate with the HPLC and GC chromatograms can be handed out upon request
- The HPLC and GC certified kits are delivered completely shrink wrapped in order to assure originality, purity and transport safety

Cat. no.	11 40 2556	11 40 2557
Vial	11 09 0519	11 09 0520
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear, label + filling lines	Amber, label + filling lines
Closure	09 15 0838	09 15 0838
Description	9 mm UltraClean PP short thread cap, blue	9 mm UltraClean PP short thread cap, blue
Septum material	Silicone white/PTFE red	Silicone white/PTFE red
Thickness (mm)	1.0	1.0
Unit size	100/pack	100/pack

Short thread ND9

Kits

LC/MS and GC/MS certified vial kits

The LC/MS and GC/MS certified kits represent our premium range of certified products. Each lot of the vial/closure combination has been tested by LC/MS and GC/MS on traces of blank values and contaminations.

- Available as clear and amber 9 mm short thread vial in the SureStop version with the sure stop function for the lowest evaporation rate of all autosampler vials
- Additionally the glass surface of these specific SureStop vials provides very low adsorption tendencies for all types of polar compounds; in fact a lot lower as for all other vials of 1st hydrolytic class glass (without surface treatment)
- The closure contains a very soft ultra low bleed (ultra-high performance) silicone septum with PTFE layer, optimized for ultra trace analysis
- The batch-specific test certificate with the MS chromatograms can be handed out on request
- The LC/MS and GC/MS certified kits are delivered completely shrink wrapped in order to assure originality, purity and transport safety

Cat. no.	11 40 3196	11 40 3197
Vial	11 09 2747	11 09 2748
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	SureStop vial, clear, label + filling lines with overwind barrier	SureStop vial, amber, label + filling lines with overwind barrier
Closure	09 15 2292	09 15 2292
Description	Ultra-high performance PP short thread cap, blue	Ultra-high performance PP short thread cap, blue
Septum material	Silicone dark blue translucent/PTFE natural	Silicone dark blue translucent/PTFE natural
Durometer	35° shore A	35° shore A
Thickness (mm)	1.0	1.0
Unit size	100/pack	100/pack

Short thread ND9

Kits

2in1 kits with short thread vials

Cat. no.	11 24 1050	11 24 1051	11 24 2391
Vial	11 09 0500	11 09 0500	11 09 0519
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear	Clear, label + filling lines
Closure	09 15 0838	09 15 0869	09 15 1669
Description	PP, blue	PP, blue	PP, black
Septum material	Silicone white/PTFE red, with slit	Silicone white/PTFE blue, with slit	Silicone white/PTFE blue, with slit
Hole (mm)	6	6	6
Durometer	55° shore A	55° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Cat. no.	11 24 1238	11 24 1141	11 24 1091
Vial	11 09 0519	11 09 0500	11 09 0520
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, wide opening, label + filling lines	Clear, wide opening	Amber, wide opening, label + filling lines
Closure	09 15 0869	09 15 0481	09 15 0481
Description	PP, blue	PP, transparent	PP, transparent
Septum material	Silicone white/PTFE blue, with slit	Silicone white/PTFE red	Silicone white/PTFE red
Hole (mm)	6	6	6
Durometer	55° shore A	55° shore A	55° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Short thread ND9

Kits

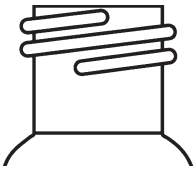
Pre-assembled vials and closures

- Pre-screwed vials reduce the risk of contamination of vials in laboratories.
- Some special applications (e.g. in the tobacco industry) could require a pre-screwed vial
- Pre-screwed vials are available with any of the short thread vials and any closure of your choice, upon request

Cat. no.	11 14 1963	11 14 1841
Vial	11 09 0500	11 09 0520
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear	Amber, label + filling lines
Closure	09 15 0869	09 15 0869
Description	PP, blue	PP, blue
Septum material	Silicone white/PTFE blue, with slit	Silicone white/PTFE blue, with slit
Hole (mm)	6	6
Durometer	55° shore A	55° shore A
Thickness (mm)	1.0	1.0
Unit size	100/pack	100/pack

Cat. no.	11 14 1867	11 14 2551
Vial	11 09 0520	11 09 0520
Size (mL)	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Amber, label + filling lines	Amber, label + filling lines
Closure	09 04 1534	09 15 2021
Description	PP, UltraBond, blue	PP, transparent
Septum material	Silicone beige/PTFE white, slit	Silicone white/PTFE red
Hole (mm)	6	6
Durometer	45° shore A	55° shore A
Thickness (mm)	1.3	1.0
Unit size	100/pack	100/pack

Screw neck ND10



Description

- 10-425 screw thread finish
- Wide neck opening design allows easy filling
- Use with inserts with a diameter of 6 mm
- 1st hydrolytic class glass (Type 1) in clear and amber

Contents	Link
Screw neck vials ND10, wide opening	
Screw neck inserts ND10	
PP screw closures ND10	

Screw neck ND10

Screw neck vials ND10, wide opening



Cat. no.	10 09 0743	10 09 1196	10 09 1197
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear, label + filling lines	Amber, label + filling lines
TFVol. (mL)	2.0	2.0	2.0
UsVol. (mL)	1.5	1.5	1.5
MWVol. (µL)	200	200	200
Res. vol. (µL)	<120	<120	<120
Unit size	100/pack	100/pack	100/pack

Screw neck inserts ND10




Cat. no.	06 09 0357	06 09 0669	06 09 0865	06 09 0866
Silanized cat. no.	06 09 1240	-	06 09 1343	-
Size (mL)	0.3	0.3	0.3	0.4
Dimensions (mm)	31 x 6	31 x 6	29 x 5.7	31 x 6
Description	Clear, 15 mm tip	Clear, 11 mm tip	Clear, with assembled plastic spring	Clear, flat bottom
TFVol. (mL)	0.3	0.3	0.3	0.5
UsVol. (mL)	0.3	0.3	0.3	0.4
MWVol. (µL)	30	30	30	40
Res. vol. (µL)	<4	<4	<4	<8
Unit size	10 x 100/pack	10 x 100/pack	10 x 100/pack	10 x 100/pack

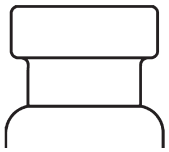
Screw neck ND10

PP screw closures ND10

Cat. no.	10 15 1256	10 15 1257	10 15 0744
Description cap	PP, black	PP, black	PP, black
Hole (mm)	7	7	7
Septum material	Natural rubber red-orange/ TEF transparent	Silicone white/PTFE red	Silicone white/PTFE beige
Durometer	60° shore A	45° shore A	45° shore A
Thickness (mm)	1.3	1.3	1.5
Unit size	100/pack	100/pack	100/pack

Cat. no.	10 15 1258	10 15 1328	10 15 1905
Description cap	PP, black	PP, black	PP, black
Hole (mm)	7	7	Closed top
Septum material	PTFE red/silicone white/ PTFE red	Silicone white/PTFE blue, with slit	Natural rubber red-orange/ TEF transparent
Durometer	45° shore A	55° shore A	60° shore A
Thickness (mm)	1.0	1.5	1.3
Unit size	100/pack	100/pack	100/pack

Crimp neck ND11



Description

- Recommended for GC applications
- Wide neck opening design allows easy filling
- Microsampling and high recovery vials allow maximum sample extraction without the need for separate inserts
- Available silanized (deactivated) for optimal recovery of critical polar compounds
- Use with inserts with a diameter of 6 mm
- 1st hydrolytic class glass (Type 1) in clear and amber
- TopSert microsampling vials are a cost-effective alternative to glass vials with fused inserts
- Vials and closures available as convenient 2in1 kits

Contents	Link
Crimp neck vials ND11, wide opening	
Inserts for crimp neck vials ND11 with wide opening	
Crimp neck closures ND11	
Crimp neck magnetic closures ND11	
Kits	

Crimp neck ND11

Crimp neck vials ND11, wide opening



Cat. no.	11 09 0356	11 09 0476	11 09 0477
Silanized cat. no.	11 09 2085	11 09 2172	11 09 1767
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear, label + filling lines	Amber, label + filling lines
TFVol. (mL)	2.0	2.0	2.0
UsVol. (mL)	1.5	1.5	1.5
MWVol. (µL)	200	200	200
Res. vol. (µL)	<100	<100	<100
Unit size	100/pack	100/pack	100/pack




Cat. no.	11 09 0921	11 09 1956	11 09 2353	11 09 2786
Size (mL)	0.2	0.2	0.3	0.3
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, label + filling lines, top bonded	Amber, label + filling lines, top bonded	Clear, base bonded	Amber, base bonded
TFVol. (mL)	0.3	0.3	0.4	0.4
UsVol. (mL)	0.2	0.2	0.3	0.3
MWVol. (µL)	25	25	30	30
Res. vol. (µL)	<1	<1	<3	<3
Unit size	100/pack	100/pack	100/pack	100/pack

Crimp neck ND11

Crimp neck vials ND11, wide opening



Cat. no.	11 09 0619	11 09 2276	11 09 3564
Silanized cat. no.	11 09 2177	-	-
Size (mL)	1.5	1.2	1.1
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear	Clear, label
TFVol. (mL)	1.8	1.4	1.4
UsVol. (mL)	1.5	1.2	1.1
MWVol. (µL)	40	25	25
Res. vol. (µL)	<8	<1	<1
Unit size	100/pack	100/pack	100/pack




Cat. no.	11 09 3451	11 09 2671	11 09 0415	11 09 0486
Size (mL)	1.3	1.3	1.1	0.9
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6	32 x 10
Description	Clear, conical base	Amber, conical base	Clear, conical	Clear, conical
TFVol. (mL)	1.5	1.5	1.3	1.1
UsVol. (mL)	1.3	1.3	1.1	0.9
MWVol. (µL)	25	25	30	30
Res. vol. (µL)	<3	<3	<4	<2
Unit size	100/pack	100/pack	100/pack	10 x 100pack

Crimp neck ND11

Crimp neck vials ND11, wide opening

Cat. no.	11 14 1190	11 14 1656
Silanized cat. no.	11 14 1266	-
Size (mL)	0.2	0.2
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	TopSert, TPX, clear, integrated 0.2 mL glass insert	TopSert, TPX, amber, integrated 0.2 mL glass insert
TFVol. (mL)	0.4	0.4
UsVol. (mL)	0.2	0.2
MWVol. (µL)	30	30
Res. vol. (µL)	<4	<4
Unit size	100/pack	100/pack

Inserts for crimp neck vials ND11 with wide opening

Cat. no.	06 09 0357	06 09 0669	06 09 0865	06 09 0866
Silanized cat. no.	06 09 1240	-	06 09 1343	06 09 1792
Size (mL)	0.3	0.3	0.3	0.4
Dimensions (mm)	31 x 6	31 x 6	29 x 5.7	31 x 6
Description	Clear, 15 mm tip	Clear, 12 mm tip	Clear, with assembled plastic spring	Clear, flat bottom
TFVol. (mL)	0.3	0.4	0.3	0.5
UsVol. (mL)	0.3	0.3	0.3	0.4
MWVol. (µL)	30	30	30	40
Res. vol. (µL)	<4	<4	<4	<8
Unit size	10 x 100/pack	10 x 100/pack	10 x 100/pack	10 x 100/pack

Crimp neck ND11

Crimp neck closures ND11

Natural rubber/TEF closures



Cat. no.	11 03 0209	11 03 0300	11 03 0535
Description cap	Aluminum, clear lacquered	Aluminum, clear lacquered	Aluminum, clear lacquered
Hole (mm)	5.5	5.5	5.5
Septum material	Natural rubber red-orange/ TEF transparent	Natural rubber red-orange/ butyl red/TEF transparent	Natural rubber red-orange/ TEF transparent
Durometer	60° shore A	45° shore A	60° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack



Cat. no.	11 03 0301	11 03 0302	11 03 0304
Description cap	Aluminum, green lacquered	Aluminum, red lacquered	Aluminum, gold lacquered
Hole (mm)	5.5	5.5	5.5
Septum material	Natural rubber red-orange/ butyl red/TEF transparent	Natural rubber red-orange/ butyl red/TEF transparent	Naural rubber red-orange/ butyl red/TEF transparent
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Crimp neck ND11

Crimp neck closures ND11

RedRubber/PTFE closures

Cat. no.	11 03 1875	11 03 1984	11 03 1985
Description cap	Aluminum, clear lacquered	Aluminum, green lacquered	Aluminum, red lacquered
Hole (mm)	5.5	5.5	5.5
Septum material	RedRubber/PTFE beige	RedRubber/PTFE beige	RedRubber/PTFE beige
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Cat. no.	11 03 1986	11 03 1987
Description cap	Aluminum, blue lacquered	Aluminum, gold lacquered
Hole (mm)	5.5	5.5
Septum material	RedRubber/PTFE beige	RedRubber/PTFE beige
Durometer	45° shore A	45° shore A
Thickness (mm)	1.0	1.0
Unit size	100/pack	100/pack

Crimp neck ND11

Crimp neck closures ND11

Silicone/PTFE closures

Cat. no.	11 03 0247	11 03 0362	11 03 0885
Description cap	Aluminum, clear lacquered	Aluminum, clear lacquered	Aluminum, clear lacquered
Hole (mm)	5.5	5.5	5.5
Septum material	Silicone white/PTFE red UltraClean	Silicone cream/PTFE red	Silicone dark blue/PTFE white
Durometer	45° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.5	1.3
Unit size	100/pack	100/pack	100/pack

Cat. no.	11 03 0196	11 03 0464
Description cap	Aluminum, clear lacquered	Aluminum, clear lacquered
Hole (mm)	5.5	5.5
Septum material	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, cross-slit
Durometer	45° shore A	55° shore A
Thickness (mm)	1.0	1.5
Unit size	100/pack	100/pack

Crimp neck ND11

Crimp neck closures ND11

Silicone/PTFE closures

Cat. no.	11 03 1625	11 03 0666
Description cap	Aluminum, green lacquered	Aluminum, red lacquered
Hole (mm)	5.5	5.5
Septum material	Silicone white/PTFE red UltraClean	Silicone white/PTFE red UltraClean
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3	1.3
Unit size	100/pack	100/pack

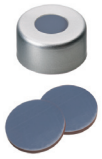
Cat. no.	11 03 0667	11 03 1624
Description cap	Aluminum, blue lacquered	Aluminum, gold lacquered
Hole (mm)	5.5	5.5
Septum material	Silicone white/PTFE red UltraClean	Silicone white/PTFE red UltraClean
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3	1.3
Unit size	100/pack	100/pack

Crimp neck ND11

Crimp neck closures ND11

Other aluminum crimp closures

Cat. no.	11 03 2519
Description cap	Aluminum, TPF, clear lacquered
Hole (mm)	5.5
Septum material	Aluminum liner, sealed by an additional assembled ring
Durometer	
Thickness (mm)	0.06
Unit size	100/pack



Cat. no.	11 03 0339	11 03 1641	11 03 1663
Description cap	Aluminum, clear lacquered	Aluminum, clear lacquered	Aluminum, clear lacquered
Hole (mm)	5.5, roll grove	5.5	5.5
Septum material	PTFE virginal	Butyl red/PTFE grey	PTFE grey/butyl red/PTFE grey
Durometer	53° shore D	55° shore A	55° shore A
Thickness (mm)	0.25	1.3	1.3
Unit size	100/pack	100/pack	100/pack

Crimp neck ND11

Crimp neck magnetic closures ND11

- Suitable for use with all magnetic transport carriers

Cat. no.	11 03 0318	11 03 0332
Description cap	Magnetic, gold lacquered	Magnetic, gold lacquered
Hole (mm)	5	5
Septum material	Silicone white/PTFE red UltraClean	PTFE red/silicone white/PTFE red
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3	1.0
Unit size	100/pack	100/pack

Kits

2in1 kits with crimp neck vials ND11

Cat. no.	11 25 1054	11 25 1053	11 25 2281
Vial	11 09 0356	11 09 0356	11 09 0476
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear, wide opening	Clear, wide opening	Clear, wide opening, label + filling lines
Closure	11 03 0300	11 03 0209	11 03 0300
Description	11 mm, aluminum, clear lacquered	11 mm, aluminum, clear lacquered	11 mm, aluminum, clear lacquered
Septum material	Natural rubber red-orange/ butyl red/TEF transparent	Natural rubber red-orange/ TEF transparent	Natural rubber red-orange/ butyl red/TEF transparent
Hole (mm)	Centre hole	Centre hole	Centre hole
Durometer	45° shore A	60° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.0
Unit size	100/pack	100/pack	100/pack

Crimp neck ND11

Kits

2in1 kits with crimp neck vials ND11

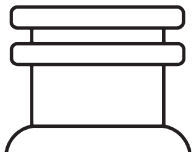
Cat. no.	11 25 1287
Vial	11 09 0477
Size (mL)	1.5
Dimensions (mm)	32 x 11.6
Description	Amber, wide opening, label + filling lines
Closure	11 03 0300
Description	11 mm, aluminum, clear lacquered
Septum material	Natural rubber red-orange/butyl red/TEF transparent
Hole (mm)	Centre hole
Durometer	45° shore A
Thickness (mm)	1.0
Unit size	100/pack

Pre-assembled vials ND11 crimp cap

- Pre-crimped vials reduce the risk of contamination of vials in laboratories
- Some special applications (e.g. in the tobacco industry) could require a pre-crimped vial
- Pre-crimped vials are available with any of the crimp/snap neck vials and any closure of your choice, upon request

Cat. no.	11 31 1596
Vial	11 09 0477
Size (mL)	1.5
Dimensions (mm)	32 x 11.6
Description	Amber, wide opening, label + filling lines
Closure	11 03 0209
Description	Aluminum, clear lacquered
Septum material	Natural rubber red-orange/TEF transparent
Hole (mm)	5.5
Durometer	60° shore A
Thickness (mm)	1.0
Unit size	100/pack

Snap neck ND11



Description

- Recommended for LC applications
- Wide neck opening design allows easy filling
- Microsampling and high recovery vials allow maximum sample extraction without the need for separate inserts
- Use with inserts with a diameter of 6 mm
- 1st hydrolytic class glass (Type 1) in clear and amber
- Vials can also be crimped with a standard 11 mm aluminum crimp closure

Contents	Link
Snap neck vials ND11, wide opening	
Inserts for snap neck vials ND11 with wide opening	
Plastic snap neck vials ND11	
Snap closures ND11	

Snap neck ND11

Snap neck vials ND11, wide opening



Cat. no.	11 09 0627	11 09 0644	11 09 0645
Size (mL)	1.5	1.5	1.5
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	Clear	Clear, label + filling lines	Amber, label + filling lines
TFVol. (mL)	1.9	1.9	1.9
UsVol. (mL)	1.5	1.5	1.5
MWVol. (µL)	200	200	200
Res. vol. (µL)	<100	<100	<100
Unit size	100/pack	100/pack	100/pack


Cat. no.	11 09 2276	11 09 3564
Size (mL)	1.2	1.1
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear	Clear, label
TFVol. (mL)	1.4	1.4
UsVol. (mL)	1.2	1.1
MWVol. (µL)	25	25
Res. vol. (µL)	<1	<1
Unit size	100/pack	100/pack

Snap neck ND11

Snap neck vials ND11, wide opening

Cat. no.	11 09 3405	11 09 3406
Size (mL)	1.3	1.3
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear, conical base	Amber, conical base
TFVol. (mL)	1.5	1.5
UsVol. (mL)	1.3	1.3
MWVol. (µL)	25	25
Res. vol. (µL)	<3	<3
Unit size	100/pack	100/pack

Cat. no.	11 09 2353	11 09 2786
Size (mL)	0.3	0.3
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear, base bonded	Amber, base bonded
TFVol. (mL)	0.4	0.4
UsVol. (mL)	0.3	0.3
MWVol. (µL)	30	30
Res. vol. (µL)	<3	<3
Unit size	100/pack	100/pack

Snap neck ND11

Inserts for snap neck vials ND11 with wide opening




Cat. no.	06 09 0357	06 09 0669	06 09 0865	06 09 0866
Silanized cat. no.	06 09 1240	-	06 09 1343	06 09 1792
Size (mL)	0.3	0.3	0.3	0.4
Dimensions (mm)	31 x 6	31 x 6	29 x 5.7	31 x 6
Description	Clear, 15 mm tip	Clear, 12 mm tip	Clear, with assembled plastic spring	Clear, flat bottom
TFVol. (mL)	0.3	0.4	0.3	0.5
UsVol. (mL)	0.3	0.3	0.3	0.4
MWVol. (µL)	30	30	30	40
Res. vol. (µL)	<4	<4	<4	<8
Unit size	10 x 100/pack	10 x 100/pack	10 x 100/pack	10 x 100/pack

Snap neck ND11

Plastic snap neck vials ND11




Cat. no.	11 19 0933	11 19 1217	11 19 1022	11 19 1707
Size (mL)	0.3	0.3	0.3	0.7
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6	32 x 11.6
Description	PP, transparent	PP, amber	TPX, crystal clear	PP, transparent
TFVol. (mL)	0.4	0.4	0.4	0.9
UsVol. (mL)	0.3	0.3	0.3	0.7
MWVol. (µL)	30	30	30	50
Res. vol. (µL)	<4	<4	<4	<25
Unit size	100/pack	100/pack	100/pack	100/pack


Cat. no.	11 14 1190	11 14 1656
Silanized cat. no.	11 14 1266	-
Size (mL)	0.2	0.2
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	Clear, TPX, snap/crimp, integrated 0.2 mL glass insert	Amber, TPX, snap/crimp, integrated 0.2 mL glass insert
TFVol. (mL)	0.4	0.4
UsVol. (mL)	0.2	0.2
MWVol. (µL)	30	30
Res. vol. (µL)	<4	<4
Unit size	100/pack	100/pack

Snap neck ND11

Snap closures ND11

Available in two versions:

- Hard – made from HDPE – closure sits more securely on the vial (suitable for longer term storage)
- Soft – made from LDPE – easier to apply and detach the closure

PE snap closures, transparent, hard/soft versions



Cat. no. hard cap	11 15 0635	11 15 2106	11 15 0637
Cat. no. soft cap	11 15 1850	11 15 1983	11 15 1852
Septum material	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige	Silicone white/PTFE red UltraClean
Hole (mm)	6	6	6
Durometer	60° shore A	45° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.3
Unit size	100/pack	100/pack	100/pack

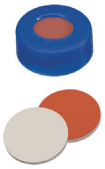


Cat. no. hard cap	11 15 0636	11 15 0650	11 15 2045
Cat. no. soft cap	11 15 1851	11 15 1853	11 15 2046
Septum material	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, cross-slit	Silicone white/PTFE red, pre-cut (Y)
Hole (mm)	6	6	6
Durometer	45° shore A	55° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.3
Unit size	100/pack	100/pack	100/pack

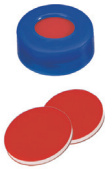
Snap neck ND11

Snap closures ND11

PE snap closures, blue, hard/soft versions


Cat. no. hard cap	11 15 1267	11 15 2107	11 15 1151
Cat. no. soft cap	11 15 1856	11 15 1817	11 15 1854
Septum material	Natural rubber red-orange/ TEF transparent	RedRubber/PTFE beige	Silicone white/PTFE red UltraClean
Hole (mm)	6	6	6
Durometer	60° shore A	45° shore A	45° shore A
Thickness (mm)	1.0	1.0	1.3
Unit size	100/pack	100/pack	100/pack




Cat. no. hard cap	11 15 1268	11 15 1269	11 15 2047	11 15 4441*
Cat. no. soft cap	11 15 1857	11 15 1858	11 15 2048	-
Septum material	PTFE red/silicone white/ PTFE red	Silicone white/PTFE blue, cross-slit	Silicone white/PTFE red, pre-cut (Y)	Silicone white/ polyimide red
Hole (mm)	6	6	6	6
Durometer	45° shore A	55° shore A	45° shore A	40° shore A
Thickness (mm)	1.0	1.0	1.3	1.0
Unit size	100/pack	100/pack	100/pack	100/pack

* Can be used for PFAS analysis

Snap neck ND11

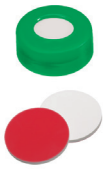
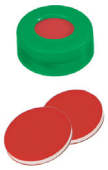
Snap closures ND11

PE snap closures, red, hard version




Cat. no.	11 15 1323	11 15 1325	11 15 1324	11 15 1326
Septum material	Natural rubber red-orange/ TEF transparent	Silicone white/PTFE red UltraClean	PTFE red/silicone white/ PTFE red	Silicone white/PTFE blue, cross-slit
Hole (mm)	6	6	6	6
Durometer	60° shore A	45° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.3	1.0	1.0
Unit size	100/pack	100/pack	100/pack	100/pack

PE snap closures, green, hard version

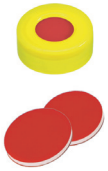

Cat. no.	11 15 1555	11 15 2017	11 15 2018	11 15 1794
Septum material	Natural rubber red-orange/ TEF transparent	Silicone white/PTFE red UltraClean	PTFE red/silicone white/ PTFE red	Silicone white/PTFE blue, cross-slit
Hole (mm)	6	6	6	6
Durometer	60° shore A	45° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.3	1.0	1.0
Unit size	100/pack	100/pack	100/pack	100/pack

Snap neck ND11

Snap closures ND11

PE snap closures yellow, hard version





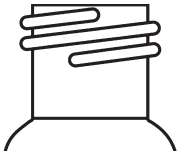

Cat. no.	11 15 1556	11 15 1886	11 15 1677	11 15 1793
Septum material	Natural rubber red-orange/ TEF transparent	Silicone white/PTFE red UltraClean	PTFE red/silicone white/ PTFE red	Silicone white/PTFE blue, cross-slit
Hole (mm)	6	6	6	6
Durometer	60° shore A	45° shore A	45° shore A	55° shore A
Thickness (mm)	1.0	1.3	1.0	1.0
Unit size	100/pack	100/pack	100/pack	100/pack

PE snap closures with thinned penetration area


Cat. no.	11 08 1676	11 08 3961*
Description cap	PE snap cap, blue	PE snap cap, transparent
Septum material	PE, with thinned penetration area	PE with thinned penetration area
Unit size	100/pack	100/pack

* Can be used for PFAS analysis

Screw neck ND13



Description

- 13-425 screw thread finish
- For storage purposes also available with closed top closures
- 1st hydrolytic class glass (Type 1) in clear and amber
- Vials and closures available as convenient 2in1 kits

Contents	Link
Screw neck vials ND13	
Screw neck insert ND13	
PP screw closures ND13	
PP screw caps ND13	
Septa 12 mm	
Kits	

Screw neck ND13

Screw neck vials ND13

Cat. no.	13 09 0222	13 09 1335
Size (mL)	4	4
Dimensions (mm)	45 x 14.7	45 x 14.7
Description	Clear	Clear, label + filling lines
TFVol. (mL)	5	5
UsVol. (mL)	4	4
MWVol. (µL)	800	800
Res. vol. (µL)	<400	<400
Unit size	100/pack	100/pack

Cat. no.	13 09 0280	13 09 1336
Size (mL)	4	4
Dimensions (mm)	45 x 14.7	45 x 14.7
Description	Amber	Amber, label + filling lines
TFVol. (mL)	5	5
UsVol. (mL)	4	4
MWVol. (µL)	800	800
Res. vol. (µL)	<400	<400
Unit size	100/pack	100/pack

Screw neck ND13

Screw neck insert ND13

Cat. no.	40 09 0146*	50 13 0147**
Size (mL)	0.4	-
Dimensions (mm)	40 x 6	50 x 7.5
Description	Clear	-
TFVol. (mL)	0.5	-
UsVol. (mL)	0.4	-
MWVol. (µL)	40	-
Res. vol. (µL)	<9	-
Unit size	10 x 100/pack	100/pack

* Metal spring required (50 13 0147)
** Spring, for insert (40 09 0146)

Screw neck ND13

PP screw closures ND13

PP screw closures ND13

Cat. no.	13 15 0456	13 15 1639	13 15 0815
Description cap	PP, black	PP, black	PP, black
Hole (mm)	8.5	8.5	8.5
Septum material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone cream/PTFE red
Durometer	60° shore A	55° shore A	55° shore A
Thickness (mm)	1.3	1.3	1.5
Unit size	100/pack	100/pack	100/pack

Cat. no.	13 15 0887	13 15 0292	13 15 1293
Description cap	PP, black	PP, black	PP, black
Hole (mm)	8.5	8.5	8.5
Septum material	Silicone dark blue/PTFE white	PTFE red/silicone white/PTFE red	Silicone white/PTFE blue, cross-slit
Durometer	45° shore A	45° shore A	55° shore A
Thickness (mm)	1.3	1.0	1.5
Unit size	100/pack	100/pack	100/pack

Screw neck ND13

PP screw closures ND13

PP screw closures ND13, closed top



Cat. no.	13 15 0439	13 15 1638	13 15 0648
Description cap	PP, black	PP, black	PP, black
Hole (mm)	Closed top	Closed top	Closed top
Septum material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone cream/PTFE red
Durometer	60° shore A	55° shore A	55° shore A
Thickness (mm)	1.3	1.3	1.5
Unit size	100/pack	100/pack	100/pack

PP screw caps ND13



Cat. no.	13 08 0166	13 08 0336	13 08 0639	13 08 0452
Cap	PP, black	PP, black	PP, white	PP, white
Hole (mm)	8.5	Closed top	8.5	Closed top
Unit size	100/pack	100/pack	100/pack	100/pack

Screw neck ND13

Septa 12 mm

Cat. no.	12 02 0168	12 02 0223	12 02 1635
Septum material	PTFE virginal	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey
Durometer	53° shore D	60° shore A	55° shore A
Thickness (mm)	0.25	1.3	1.3
Unit size	1000/pack	1000/pack	1000/pack

Cat. no.	12 02 0143	12 02 0463
Septum material	Silicone cream/PTFE red	PTFE red/silicone white/PTFE red
Durometer	55° shore A	45° shore A
Thickness (mm)	1.5	1.0
Unit size	1000/pack	1000/pack

Screw neck ND13

Kits

2in1 kits

Cat. no.	13 28 1067	13 28 1069	13 28 1074
Vial	13 09 0222	13 09 0222	13 09 0280
Size (mL)	4	4	4
Dimensions (mm)	45 x 14.7	45 x 14.7	45 x 14.7
Description	Clear	Clear	Amber
Closure	13 15 0456	13 15 0815	13 15 0815
Description	PP, black	PP, black	PP, black
Septum material	Natural rubber red-orange/ TEF transparent	Silicone cream/PTFE red	Silicone cream/PTFE red
Hole (mm)	8.5	8.5	8.5
Durometer	60° shore A	55° shore A	55° shore A
Thickness (mm)	1.3	1.3	1.3
Unit size	100/pack	100/pack	100/pack

Shell vials

Description
• Star-shaped diaphragm enables easy penetration of the PE plug • PE lamella plugs allow for easier insertion and less needle bending • 1st hydrolytic class glass (Type 1) in clear and amber

Contents	Link
Shell vials 1 mL	
Shell vials 2 mL and inserts	
Shell vials 4 mL	

Shell vials

Shell vials 1 mL



Cat. no.	08 14 0641	08 14 3963	08 14 3964
Size (mL)	1	1	1
Dimensions (mm)	35 x 7.8	40 x 8.2	40 x 8.2
Description	Clear	Clear	Amber
Plug	6 mm PE plug, transparent	8 mm PE lamella plug	8 mm PE lamella plug
TFVol. (mL)	1.1	1.4	1.4
UsVol. (mL)	0.8	1	1
MWVol. (µL)	60	100	100
Res. vol. (µL)	<25	<80	<80
Unit size	100/pack	100/pack	100/pack


Cat. no.	08 14 0513	08 14 0595
Size (mL)	1	1
Dimensions (mm)	40 x 8.2	40 x 8.2
Description	Clear	Amber
Plug	8 mm PE plug with insertion barrier	8 mm PE plug, with insertion barrier
TFVol. (mL)	1.4	1.4
UsVol. (mL)	1	1
MWVol. (µL)	100	100
Res. vol. (µL)	<80	<80
Unit size	100/pack	100/pack

Shell vials

Shell vials 2 mL and inserts

Cat. no.	11 14 0544	11 14 0545
Size (mL)	2	2
Dimensions (mm)	31.5 x 11.6	31.5 x 11.6
Description	Clear	Amber
Plug	12 mm PE plug, transparent	12 mm PE plug, transparent
TFVol. (mL)	2.3	2.3
UsVol. (mL)	1.5	1.5
MWVol. (µL)	200	200
Res. vol. (µL)	<100	<100
Unit size	100/pack	100/pack

Cat. no.	06 09 0357	06 09 0669	06 09 0866
Silanized cat. no.	06 09 1240	-	06 09 1792
Size (mL)	0.3	0.3	0.4
Dimensions (mm)	31 x 6	31 x 6	31 x 6
Description	Clear, 15 mm tip	Clear, 12 mm tip	Clear, flat bottom
Top (mm)	15	12	-
TFVol. (mL)	0.3	0.4	0.5
UsVol. (mL)	0.3	0.3	0.4
MWVol. (µL)	30	30	40
Res. vol. (µL)	<4	<4	<8
Unit size	10 × 100/pack	10 × 100/pack	10 × 100/pack

Shell vials

Shell vials 4 mL

Cat. no.	15 14 0548	15 14 0562	15 34 2197
Size (mL)	4	4	4
Dimensions (mm)	44.6 x 14.65	44.6 x 14.65	44.6 x 14.65
Description	Clear	Amber	PP
Plug	15 mm PE plug, transparent	15 mm PE plug, transparent	15 mm PE plug, transparent
TFVol. (mL)	5.5	5.5	5.5
UsVol. (mL)	4	4	4
MWVol. (µL)	1000	1000	1000
Res. vol. (µL)	<800	<800	<800
Unit size	100/pack	100/pack	100/pack

Headspace ND20 (ND18)

Description

- Headspace vials are available with either a round or flat bottom
- Round bottom vials are compatible with most autosamplers and more easily handled by robotic arms that lift the vials from the tray. A round bottom is also more sturdy and thus more resistant to the high pressure within the vial during the heating process
- Flat bottom vials maximise heating efficiency in manual headspace sampling and are required for use in some instrument models
- Vials have either a bevelled or flat DIN crimp neck
- The bevelled edge might be required for some special closure systems, however, a liner has more surface to lie on with a flat DIN crimp neck, so this provides a tighter seal
- 1st hydrolytic class glass (Type 1) in clear and amber
- Aluminum closures are available in standard centre hole or headspace pressure release versions
- Headspace closures are designed to break open when the internal pressure exceeds 3.0 ±0.5 bar
- Magnetic closures are used with all types of magnetic transport autosamplers
- Screw caps offer a ready to use, convenient solution, that do not require any additional tools

Headspace ND20 (ND18)

Headspace vials ND20 + ND18

Cat. no.	20 09 0342	20 09 0801	20 09 1405 20 09 1691	20 09 0802
Size (mL)	5	5	10	10
Dimensions (mm)	38.2 x 22	38 x 20	46 x 22.5	54.5 x 20
Vial type	Headspace	Crimp	Headspace, DIN-crimp neck	Crimp
Description	Clear, rounded bottom	Clear, flat bottom	Clear/amber, rounded bottom	Clear, flat bottom
TFVol. (mL)	9.4	8	12.3	12.2
UsVol. (mL)	5	5	10	10
MWVol. (µL)	1500	1500	1500	1500
Res. vol. (µL)	800	800	800	800
Unit size	100/pack	100/pack	100/pack	100/pack

Important safety tip

As headspace vials have to withstand high internal pressure, almost all vials on these pages have a wall thickness of 1.2 mm. Thus it is guaranteed that the vial will not burst. Contrary to a widely spread opinion, the closure and not the vial represents the weakest part of the whole sytem. Under pressure the septa will bulge against the aluminum cap with such a force that the cap is torn apart. By own testing we varified that e.g. our vial 20 09 0297 can easily withstand 10 bars or more while the closure is torn apart at around 10 bars when no pressure release system – like our headspace cap – is used.

Headspace ND20 (ND18)

Headspace vials ND20 + ND18

Cat. no.	20 09 0795	20 09 0297 20 09 1223	20 09 0440
Size (mL)	10	20	20
Dimensions (mm)	46 x 22.5	75.5 x 23	75.5 x 23
Vial type	Headspace, DIN-crimp long neck	Headspace	Headspace
Description	Clear, flat bottom	Clear/amber, rounded bottom	Clear, rounded bottom, label + filling lines
TFVol. (mL)	11.7	22	22.4
UsVol. (mL)	10	20	20
MWVol. (µL)	1500	1500	1500
Res. vol. (µL)	800	800	800
Unit size	100/pack	100/pack	100/pack

Headspace ND20 (ND18)

Headspace vials ND20 + ND18

Cat. no.	20 09 3175	20 09 0796	20 09 0873 20 09 1690	20 09 1222
Size (mL)	20	20	20	20
Dimensions (mm)	75.5 x 22.75	75.5 x 22.5	75.5 x 22.5	75.5 x 22.5
Vial type	Headspace, bevelled crimp long neck	Headspace, DIN-long crimp neck	Headspace, DIN-crimp long neck	SPME, special crimp neck
Description	Clear, flat bottom	Clear, flat bottom	Clear/amber, flat bottom	Clear, rounded bottom
TFVol. (mL)	21.2	21.2	20.9	21.2
UsVol. (mL)	20	20	20	20
MWVol. (µL)	1500	1500	1500	1500
Res. vol. (µL)	800	800	800	800
Unit size	100/pack	100/pack	100/pack	100/pack

Headspace ND20 (ND18)

Headspace vials ND20 + ND18

Cat. no.	18 09 1306 18 09 1310	18 09 1307 18 09 1311
Size (mL)	10	20
Dimensions (mm)	46 x 22.5	75.5 x 22.5
Vial type	Precision thread ND18	Precision thread ND18
Description	Clear/amber, rounded bottom	Clear/amber, rounded bottom
TFVol. (mL)	10.8	20.6
UsVol. (mL)	8	18
MWVol. (µL)	1500	1500
Res. vol. (µL)	800	800
Unit size	100/pack	100/pack

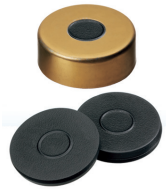
Headspace ND20 (ND18)

Crimp closures ND20

Butyl closures

- Temperature resistant from -40 °C up to 120 °C
- Due to the missing PTFE lamination only suitable for uncritical analyses
- Low-cost product

Cat. no.	20 03 0127	20 03 0126	20 03 0212
Description cap	Aluminum, clear lacquered	Aluminum, headspace, clear lacquered	Aluminum, complete tear-off, clear lacquered
Hole (mm)	10	8	-
Septum material	Chloro-butyl, dark grey	Chloro-butyl, dark grey	Chloro-butyl, dark grey
Durometer	55° shore A	55° shore A	55° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack



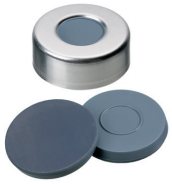
Cat. no.	20 03 1157
Description cap	Aluminum, magnetic, gold
Hole (mm)	8
Septum material	Chloro-butyl, dark grey
Durometer	55° shore A
Thickness (mm)	3.0
Unit size	100/pack

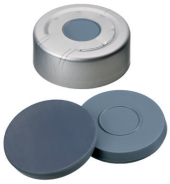
Headspace ND20 (ND18)

Crimp closures ND20

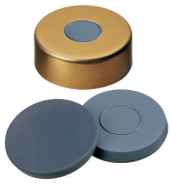
Butyl/PTFE closures (completely PTFE laminated)

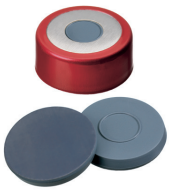
- Temperature resistant from -40 °C up to 120 °C
- Completely laminated with PTFE





Cat. no.	20 03 0059	20 03 0112	20 03 0186
Description cap	Aluminum, clear lacquered	Aluminum, headspace, clear lacquered	Aluminum, tear-off, clear lacquered
Hole (mm)	10	8	-
Septum material	Bromo-butyl/PTFE, grey	Bromo-butyl/PTFE, grey	Bromo-butyl/PTFE, grey
Durometer	50° shore A	50° shore A	50° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack





Cat. no.	20 03 1186	20 03 1623
Description cap	Aluminum, magnetic, gold	Aluminum, magnetic bimetal, red
Hole (mm)	8	8
Septum material	Bromo-butyl/PTFE, grey	Bromo-butyl/PTFE, grey
Durometer	50° shore A	50° shore A
Thickness (mm)	3.0	3.0
Unit size	100/pack	100/pack

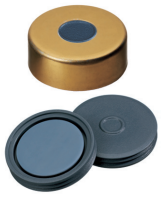
Headspace ND20 (ND18)

Crimp closures ND20

Pharma-Fix closures (butyl/PTFE)

- Special, moulded butyl/PTFE liner that is only laminated with PTFE in the contact area towards the sample. On the glass rims the elastic butyl achieves a very tight closure
- Temperature resistant from -40 °C up to 120 °C
- Tighter alternative to the completely laminated butyl/PTFE liners

Cat. no.	20 03 0030	20 03 0264	20 03 0061
Description cap	Aluminum, clear lacquered	Aluminum, headspace, clear lacquered	Aluminum, complete tear-off, clear lacquered
Hole (mm)	10	8	-
Septum material	Bromo-butyl/PTFE	Bromo-butyl/PTFE	Bromo-butyl/PTFE
Durometer	50° shore A	50° shore A	50° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack



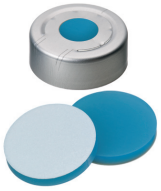
Cat. no.	20 03 1200
Description cap	Magnetic, gold
Hole (mm)	8
Septum material	Bromo-butyl/PTFE
Durometer	50° shore A
Thickness (mm)	3.0
Unit size	100/pack

Headspace ND20 (ND18)

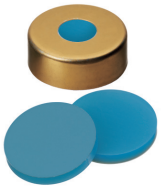
Crimp closures ND20

Silicone/PTFE closures (completely PTFE laminated)

- Temperature resistant from -60 °C up to 200 °C
- Clean/UltraClean liners for sensitive analyses
- Completely laminated with PTFE
- Soft liners for easy penetration



Cat. no.	20 03 0142	20 03 0163	20 03 0227
Description cap	Aluminum, clear lacquered	Headspace, clear lacquered	Complete tear-off, clear lacquered
Hole (mm)	10	8	-
Septum material	Silicone blue transparent/PTFE white	Silicone blue transparent/PTFE white	Silicone blue transparent/PTFE white
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack



Cat. no.	20 03 0975	20 03 1536
Description cap	Magnetic, gold	Magnetic bimetal, red
Hole (mm)	8	8
Septum material	Silicone blue transparent/PTFE transparent	Silicone blue transparent/PTFE transparent
Durometer	45° shore A	45° shore A
Thickness (mm)	3.0	3.0
Unit size	100/pack	100/pack

Headspace ND20 (ND18)

Crimp closures ND20

Cat. no.	20 03 0901	20 03 0828
Description cap	Aluminum, clear lacquered	Headspace, clear lacquered
Hole (mm)	10	8
Septum material	Silicone white/PTFE beige	Silicone white/PTFE beige
Durometer	45° shore A	45° shore A
Thickness (mm)	3.2	3.2
Unit size	100/pack	100/pack

Cat. no.	20 03 1785	20 03 1604
Description cap	Aluminum, magnetic, gold	Aluminum, magnetic bimetal, red
Hole (mm)	8	8
Septum material	Silicone white/PTFE beige	Silicone white/PTFE beige
Durometer	45° shore A	45° shore A
Thickness (mm)	3.2	3.2
Unit size	100/pack	100/pack

Headspace ND20 (ND18)

Crimp closures ND20

Silicone/aluminum foil closures

- Temperature resistant from -60 °C up to 220 °C
- Completely laminated with aluminum foil silver

Cat. no.	20 03 0327	20 03 0326	20 03 1457
Description cap	Aluminum, clear lacquered	Headspace, clear lacquered	Magnetic, gold
Hole (mm)	10	8	8
Septum material	Silicone white/aluminum foil silver	Silicone white/aluminum foil silver	Silicone white/aluminum foil silver
Durometer	50° shore A	50° shore A	50° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack

UHT closure

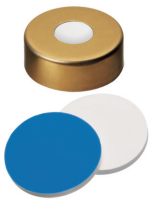
- High temperature, high quality silicone/PTFE septum for fewer extractables at low to mid-high temperatures
- Operation up to 300 °C possible
- Low bleeding level at high temperatures (>120 °C)

Cat. no.	20 03 3056
Description cap	Ultra-high temperature, 20 mm steel crimp, silver
Hole (mm)	5
Septum material	Ultra-high temperature silicone dark red/PTFE
Durometer	45° shore A
Thickness (mm)	3.0
Unit size	100/pack

Headspace ND20 (ND18)

Closure for SPME vial

- Special silicone/PTFE liner with an only 0.05 mm thin casted teflon film instead of 0.13 mm skived PTFE lamination that is standard for any other 20 mm headspace liner. Thus penetration is even easier, as PTFE is the hardest part to penetrate
- These special products should only be used in combination with the SPME-Vial 20 09 1222 which has a much thicker crimp neck than all standard headspace vials
- Much thinner liners for easier penetration of the sensitive phase



Cat. no.	20 03 1246
Description cap	Magnetic, gold
Hole (mm)	8
Septum material	Silicone white/PTFE blue
Durometer	55° shore A
Thickness (mm)	1.5
Unit size	100/pack

SPME closures for standard headspace vials

- Standard 3 mm septa thickness at the crimp border for conveniant crimp process with standard headspace vials and crimper
- With thinned penetration area in the center (still silicone faced) for easy penetration and excellent resealing

Cat. no.	20 03 3467	20 03 3468
Description cap	Magnetic, gold	Magnetic bimetal, red
Hole (mm)	8	8
Septum material	Silicone white/PTFE blue, thinned center	Silicone white/PTFE blue, thinned center
Durometer	55° shore A	55° shore A
Thickness (mm)	3.0/1.5	3.0/1.5
Unit size	100/pack	100/pack

Headspace ND20 (ND18)

Universal screw closures ND18

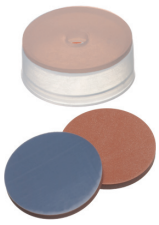
Cat. no.	18 03 1578	18 03 1309	18 03 1414
Description cap	Magnetic screw, silver	Magnetic screw, silver	Magnetic screw, silver
Hole (mm)	8	8	8
Septum material	Silicone white/PTFE red	Silicone blue transparent/PTFE white	Silicone white/PTFE blue
Durometer	45° shore A	45° shore A	55° shore A
Thickness (mm)	1.3	1.3	1.5
Unit size	100/pack	100/pack	100/pack

Cat. no.	18 03 1416	18 03 1874
Description cap	Magnetic screw, silver	Magnetic screw, silver
Hole (mm)	8	8
Septum material	Butyl red/PTFE grey	Silicone white/aluminium foil silver
Durometer	55° shore A	50° shore A
Thickness (mm)	1.6	1.3
Unit size	100/pack	100/pack

Headspace ND20 (ND18)

Closures for HS-neck/crimp neck ND20

- Closures for washer bottles on the instruments
- Intermediate closure when collecting samples out in field

Cat. no.	22 15 0321	22 15 1697	22 15 0863	22 15 1646
Description cap	PE, transparent	PE, transparent	PE, transparent	PE, transparent
Dimensions (mm)	22 x 8.4	22 x 8.4	22 x 9.1	22 x 9.1
Hole (mm)	4.3	4.3	4.3	4.3
Septum material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey
Durometer	60° shore A	55° shore A	60° shore A	55° shore A
Thickness	1.3	1.3	1.3	1.3
Unit size	100/pack	100/pack	100/pack	100/pack



Cat. no.	22 15 1334	22 15 1824	22 15 1869
Description cap	PE, transparent	PE, transparent	PE, transparent
Dimensions (mm)	22 x 9.1	22 x 9.1	22 x 9.1
Hole (mm)	4.3	4.3	6.0
Septum material	Silicone blue transparent/ PTFE white	Silicone blue transparent/ PTFE white, Y-slit	Silicone blue transparent/ PTFE white, Y-slit
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	1.3	1.3	1.3
Unit size	100/pack	100/pack	100/pack

Headspace ND20 (ND18)

Screw closures ND18*

Cat. no.	18 15 1386	18 15 1387	18 15 2102
Description cap	PP, black	PP, black	PP, black
Hole (mm)	12	Closed top	12
Septum material	Butyl red/PTFE grey	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	55° shore A	55° shore A	55° shore A
Thickness (mm)	1.6	1.6	1.5
Unit size	100/pack	100/pack	100/pack

Cat. no.	18 15 2069	18 15 0871
Description cap	PP, black	PP, black
Hole (mm)	Closed top	12
Septum material	Silicone white/PTFE red	Silicone blue transparent/PTFE white
Durometer	55° shore A	45° shore A
Thickness (mm)	1.5	1.7
Unit size	100/pack	100/pack

* These closures are for vial 18 09 0864 only. They are not suitable for article numbers 18 09 1306, 18 09 1307, 18 09 1310, 18 09 1311.

Headspace ND20 (ND18)

Septa/stoppers 20 mm



Cat. no.	20 02 0122	20 02 0057	20 02 0035
Septum material	Moulded, chlorobutyl, dark grey	Moulded bromo-butyl/PTFE, grey	Pharma-Fix (bromo-butyl/PTFE)
Durometer	55° shore A	50° shore A	50° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	1000/pack	1000/pack	1000/pack




Cat. no.	20 02 0141	20 02 2054	20 02 0638	20 02 0335
Septum material	Silicone blue transparent/ PTFE white	Silicone blue transparent/ PTFE transparent	Silicone white/PTFE beige, (HT quality)	Silicone white/ aluminum foil silver
Durometer	45° shore A	45° shore A	45° shore A	50° shore A
Thickness (mm)	3.0	3.0	3.2	3.0
Unit size	1000/pack	1000/pack	1000/pack	1000/pack

Headspace ND20 (ND18)

Septa 19.5 mm



Cat. no.	19 02 0245	19 02 1636	19 02 0693
Septum material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone blue transparent/PTFE white
Durometer	60° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.3	1.3
Unit size	1000/pack	1000/pack	1000/pack

Septa 17.5 mm

For magnetic universal screw closures ND18




Cat. no.	17 02 1580	17 02 1417	17 02 1318	17 02 1415
Septum material	Silicone white/PTFE red	Silicone blue transparent/ PTFE white	Silicone white/PTFE blue	butyl red/PTFE grey
Durometer	45° shore A	45° shore A	55° shore A	55° shore A
Thickness (mm)	1.3	1.3	1.5	1.6
Unit size	1000/pack	1000/pack	1000/pack	1000/pack

Headspace ND20 (ND18)

Septa 16 mm

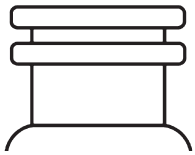
Cat. no.	16 02 1384	16 02 2068	16 02 0870
Septum material	Butyl red/PTFE grey	Silicone white/PTFE red	Silicone blue transparent/PTFE white
Durometer	55° shore A	55° shore A	45° shore A
Thickness (mm)	1.6	1.5	1.7
Unit size	1000/pack	1000/pack	1000/pack

Headspace wash kit

- Convenient “all in one” solution
- Reproducible syringe clean up
- Improved sealing, less evaporation or contamination of wash solvents
- Easy to apply caps

Cat. no.	20 33 3392
Description	10 mL vials with easy to apply PP closures with Y-slit silicone/PTFE septa
Unit size	25/pack

Snap cap vials ND18 + ND22



Description

- Easy to handle and inexpensive storage vials with push-on PE snap caps
- Quick and easy to open and reseal
- Vials and caps available separately
- For storage of powders and solids only
- 1st hydrolytic class glass (Type 1) in clear

Contents	Link
Snap cap vials ND18/ND22 and caps	

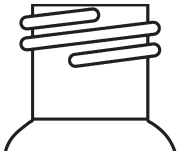
Snap cap vials ND18 + ND22

Snap cap vials ND18/ND22 and caps

Cat. no.	18 09 0906	18 09 0907	20 09 0784	22 09 0908
Size (mL)	5	10	15	25
Dimensions (mm)	40 x 20	50 x 22	48 x 26	65 x 26
Vial type	ND18	ND18	ND22	ND22
Description	Clear	Clear	Clear	Clear
TFVol. (mL)	9.1	14	19.3	27
UsVol. (mL)	8	12.7	18.5	25
MWVol. (mL)	0.6	1	1	1
Res. vol. (mL)	0.3	0.5	0.6	0.6
Unit size	100/pack	100/pack	100/pack	100/pack

Cat. no.	18 08 0913	22 08 0794
Dimensions (mm)	19.8 x 5.2	23.5 x 5.5
Vial type	ND18	ND22
Description	18 mm PE, transparent	22 mm PE, transparent
Unit size	100/pack	100/pack

Screw neck ND24 (EPA)



Description

- Processed and packaged under a strict registered ISO Quality Management System
- Not certified to EPA standards or pre-cleaned
- Every case of product is labelled with its production number and is custody sealed to ensure reliable chain-of-custody
- Recommended for discrete water sampling under EPA 40 CFR 136 “Guidelines for Establishing Test Procedures for the Analysis of Pollutants” and EPA 40 CFR 141 “National Interim Primary Drinking Water Regulations: Control of Trihalomethanes in Drinking Water”.
- 1st hydrolytic class glass (Type 1) in clear and amber
- Assembled kits include vials with pre-screwed closures
- Unassembled kits available on request

Contents	Link
Screw neck vials ND24 (EPA)	
Screw closures ND24	
Septa 22 mm	
Kits	

Screw neck ND24 (EPA)

Screw neck vials ND24 (EPA)

Cat. no.	24 09 0589	24 09 0927	24 09 0839	24 09 0923	24 09 0402	24 09 0928	24 09 1089	24 09 1090
Size (mL)	20	20	30	30	40	40	60	60
Dimensions (mm)	57 x 27.5	57 x 27.5	72.5 x 27.5	72.5 x 27.5	95 x 27.5	95 x 27.5	140 x 27.5	140 x 27.5
Description	Clear	Amber	Clear	Amber	Clear	Amber	Clear	Amber
TFVol. (mL)	23.3	23.3	31.1	31.1	42.9	42.9	64.4	64.4
UsVol. (mL)	20	20	27.4	27.4	40	40	60	60
MWVol. (mL)	1	1	1.4	1.4	1.4	1.4	1.4	1.4
Res. vol. (mL)	0.5	0.5	0.7	0.7	0.7	0.7	0.7	0.7
Unit size	100/pack	100/pack	100/pack	100/pack	100/pack	100/pack	100/pack	100/pack

Screw neck ND24 (EPA)

Screw closures ND24

- Ready to use combination closures; no time-consuming and “tricky” assembly
- No contamination of the liner with sweat/fat that normally is caused by manual assembly
- Available as closed top screw closures or with centre hole in white 24-400 caps
- Broad variety of different septum materials for almost all applications
- Also UltraBond closures ND24 are offered, i.e. that the cap and the silicone/PTFE liner of these closures form an inseparable unit avoiding the problem of liners falling out of the cap. This 100% firm fit of the liner is achieved by a special process that requires no adhesives, but instead changes the molecular structure of both components to achieve the fixation.
- Also pre-sealed vials are available

PP screw closures ND24 (assembled)

Cat. no.	24 15 1394	24 15 1395	24 15 1163
Description cap	PP, white	PP, white	PP, white
Hole (mm)	12.5	Closed top	12.5
Septum material	Butyl red/PTFE grey	Butyl red/PTFE grey	Silicone white/PTFE beige (EPA quality)
Durometer	55° shore A	55° shore A	45° shore A
Thickness (mm)	2.5	2.5	3.2
Unit size	100/pack	100/pack	100/pack

Cat. no.	24 15 1540	24 15 1007	24 15 2160	24 15 2967
Description cap	PP, white	PP, white	PP, white	PP, white
Hole (mm)	Closed top	Closed top	Closed top	12.5
Septum material	Silicone white/PTFE beige (EPA quality)	PTFE/EPDM/PTFE	Silicone white/ aluminium foil silver	Silicone white/ aluminium foil silver
Durometer	45° shore A	65° shore A	50° shore A	50° shore A
Thickness (mm)	3.2	2.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack	100/pack

Screw neck ND24 (EPA)

Screw closures ND24

Bonded closures ND24

Cat. no.	24 04 0842	24 04 0841
Description cap	PP, white	PP, white
Hole (mm)	14.9	Closed top
Septum material	Silicone natural/PTFE beige (EPA quality)	Silicone natural/PTFE beige (EPA quality)
Durometer	45° shore A	45° shore A
Thickness (mm)	3.2	3.2
Unit size	100/pack	100/pack

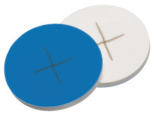
PP screw caps ND24

Cat. no.	24 08 0403	24 08 0592
Description cap	PP, white	PP, white
Hole (mm)	12.5	Closed top
Unit size	100/pack	100/pack

Screw neck ND24 (EPA)

Septa 22 mm

Cat. no.	22 02 1390	22 02 1393	22 02 1108
Septum material	Butyl red/PTFE grey	Butyl red/PTFE grey	Silicone white/PTFE beige
Durometer	55° shore A	55° shore A	45° shore A
Thickness (mm)	1.6	2.5	3.2 (EPA quality)
Unit size	1000/pack	1000/pack	1000/pack



Cat. no.	22 02 0409	22 02 0487
Septum material	Silicone white/PTFE blue, cross-slit	Silicone white/aluminum foil silver
Durometer	55° shore A	50° shore A
Thickness (mm)	1.5	3.0
Unit size	1000/pack	1000/pack

Screw neck ND24 (EPA)

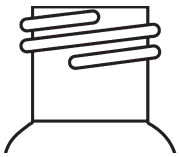
Kits

Assembled EPA vials with screw closures ND24

Cat. no.	24 14 1513	24 14 0976	24 14 1621	24 14 1538
Vial cat. no.	24 09 0589	24 09 0402	24 09 0402	24 09 0402
Size (mL)	20	40	40	40
Dimensions (mm)	57 x 27.5	95 x 27.5	95 x 27.5	95 x 27.5
Description	Clear	Clear	Clear	Clear
Closure cat. no.	24 04 0842	24 15 1163	24 04 0842	24 04 0841
Description	UltraBond closure, white, centre hole, silicone natural/PTFE beige (EPA quality)	PP screw cap, white, centre hole, silicone white/ PTFE beige	UltraBond closure, white, centre hole, silicone natural/PTFE beige (EPA quality)	UltraBond closure, white, closed top, silicone natural/ PTFE beige (EPA quality)
Durometer	45° shore A	45° shore A	45° shore A	45° shore A
Thickness (mm)	3.2	3.2	3.2	3.2
Unit size	100/pack	100/pack	100/pack	100/pack

Cat. no.	24 14 1094	24 14 1278	24 14 1354
Vial cat. no.	24 09 0928	24 09 1089	24 09 1089
Size (mL)	40	60	60
Dimensions (mm)	95 x 27.5	140 x 27.5	140 x 27.5
Description	Amber	Clear	Clear
Closure cat. no.	24 15 1163	24 15 1163	24 04 0842
Description	PP screw cap, white, centre hole, silicone white/PTFE beige	PP screw cap, white, centre hole, silicone white/PTFE beige	UltraBond seal, white, centre hole, silicone natural/PTFE beige (EPA quality)
Durometer	45° shore A	45° shore A	45° shore A
Thickness (mm)	3.2	3.2	3.2
Unit size	100/pack	100/pack	100/pack

Screw neck vials for storage purposes



Description

- Capacity ranges from 1.5-60 mL
- Provide consistent pH for the duration of sample storage life
- PTFE lined solid top storage closures
- 1st hydrolytic class glass (Type 1) in clear and amber

Contents	Link
Screw neck vials for storage vials	
Screw closures for storage vials	

Screw neck vials for storage purposes

Screw neck vials for storage purposes




Cat. no.	11 09 0210	11 09 0259	13 09 0222	13 09 0280
Size (mL)	1.5	1.5	4	4
Dimensions (mm)	32 x 11.6	32 x 11.6	45 x 14.7	45 x 14.7
Thread	8-425	8-425	13-425	13-425
Description	Clear	Amber	Clear	Amber
TFVol. (mL)	1.9	1.9	5	5
UsVol. (mL)	1.5	1.5	4.1	4.1
MWVol. (µL)	200	200	800	800
Res. vol. (µL)	<110	<110	<400	<400
Unit size	100/pack	100/pack	100/pack	100/pack


Cat. no.	15 09 1703 15 09 1774	15 09 1657 15 09 1800
Size (mL)	8	12
Dimensions (mm)	61 x 16.6	66 x 18.5
Thread	15-425	15-425
Description	Clear/amber	Clear/amber
TFVol. (mL)	8.9	12
UsVol. (mL)	8	11
MWVol. (µL)	1500	1500
Res. vol. (µL)	800	800
Unit size	100/pack	100/pack

Screw neck vials for storage purposes

Screw neck vials for storage purposes

Cat. no.	18 09 1704	20 09 1705
Size (mL)	16	20
Dimensions (mm)	71 x 20.6	86 x 22.7
Thread	18-400	20-400
Description	Clear	Clear
TFVol. (mL)	17.4	24.5
UsVol. (mL)	16	23
MWVol. (µL)	1500	1500
Res. vol. (µL)	800	800
Unit size	100/pack	100/pack

Cat. no.	24 09 0589 24 09 0927	24 09 0839 24 09 0923	24 09 0402 24 09 0928	24 09 1089 24 09 1090
Size (mL)	20	30	40	60
Dimensions (mm)	57 x 27.5	72.5 x 27.5	95 x 27.5	140 x 27.5
Thread	24-400	24-400	24-400	24-400
Description	Clear/amber	Clear/amber	Clear/amber	Clear/amber
TFVol. (mL)	23.3	31.1	42.9	64.4
UsVol. (mL)	20	27.4	40	60
MWVol. (mL)	1	1.4	1.4	1.4
Res. vol. (mL)	0.5	0.7	0.7	0.7
Unit size	100/pack	100/pack	100/pack	100/pack

Screw neck vials for storage purposes

Screw closures for storage vials

- Corresponding centre hole versions are partially available
- Closures with different septa material are available

PP screw closures for ND8 vials



Cat. no.	08 15 0654	08 15 1653	08 15 1040
Description cap	PP, black, closed top	PP, black, closed top	PP, black, closed top
Thread	8-425	8-425	8-425
Septa material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.3	1.3
Unit size	100/pack	100/pack	100/pack

PP screw closures for ND13 vials



Cat. no.	13 15 0439	13 15 1638	13 15 0648
Description cap	PP, black, closed top	PP, black, closed top	PP, black, closed top
Thread	13-425	13-425	13-425
Septa material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone cream/PTFE red
Durometer	60° shore A	55° shore A	55° shore A
Thickness (mm)	1.3	1.3	1.5
Unit size	100/pack	100/pack	100/pack

Screw neck vials for storage purposes

Screw closures for storage vials

PP screw closures for ND15



Cat. no.	15 15 0793	15 15 1748	15 15 1083
Description cap	PP, black	PP, black	PP, black
Thread	15-425	15-425	15-425
Hole (mm)	Closed top	Closed top	Closed top
Septa material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.6	1.3
Unit size	100/pack	100/pack	100/pack



Cat. no.	15 15 1938	15 15 1932	15 15 1989
Description cap	PP, black	PP, black	PP, black
Thread	15-425	15-425	15-425
Hole (mm)	9	9	9
Septa material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.6	1.3
Unit size	100/pack	100/pack	100/pack

Screw neck vials for storage purposes

Screw closures for storage vials

PP Screw closures for ND18



Cat. no.	18 15 1387	18 15 1132	18 15 2069
Description cap	PP, black	PP, black	PP, black
Thread	18-400	18-400	18-400
Hole (mm)	Closed top	Closed top	Closed top
Septa material	Butyl red/PTFE grey	Silicone blue transparent/PTFE white	Silicone white/PTFE red
Durometer	55° shore A	45° shore A	55° shore A
Thickness (mm)	1.6	1.7	1.5
Unit size	100/pack	100/pack	100/pack

PP screw closures for ND20



Cat. no.	20 15 1803	20 15 1805	20 15 1804
Description cap	PP, white	PP, white	PP, white
Thread	20-400	20-400	20-400
Hole (mm)	Closed top	Closed top	Closed top
Septa material	Natural rubber red-orange/ TEF transparent	Butyl red/PTFE grey	Silicone white/PTFE red
Durometer	60° shore A	55° shore A	45° shore A
Thickness (mm)	1.3	1.3	1.3
Unit size	100/pack	100/pack	100/pack

Screw neck vials for storage purposes

Screw closures for storage vials

PP screw closures for ND24

Cat. no.	24 15 1395	24 15 1540
Description cap	PP, white	PP, white
Hole (mm)	Closed top	Closed top
Septa material	Butyl red/PTFE grey	Silicone white/PTFE beige
Durometer	55° shore A	45° shore A
Thickness (mm)	2.5	3.2
Unit size	100/pack	100/pack

Cat. no.	24 15 1007	24 04 0841
Description cap	PP, white	UltraBond, white
Hole (mm)	Closed top	Closed top
Septa material	PTFE/EPDM/PTFE	Silicone natural/PTFE beige
Durometer	65° shore A	45° shore A
Thickness (mm)	2.0	3.2
Unit size	100/pack	100/pack

Special products

Description
• Special products are non-stock items and may require a minimum order quantity

Contents	Link
Special vials	
Other crimp neck vials ND20 and screw neck vial ND18	
Special closures	
Special septa	

Special products

Special vials

Cat. no.	11 09 0831	13 09 0236	13 09 2574
Size (mL)	2.5	3	4
Dimensions (mm)	41 x 11.6	32 x 16	45 x 14.7
Description	Clear, crimp, wide opening	Clear, crimp	Clear, crimp
TFVol. (mL)	2.7	3.6	5
UsVol. (mL)	2.4	3	4.1
MWVol. (µL)	200	800	800
Res. vol. (µL)	<100	<400	<400
Unit size	100/pack	100/pack	100/pack

Cat. no.	40 09 0678
Size (mL)	50
Dimensions (mm)	69.5 x 44
Description	Clear, cylindrical jar, 3rd hydrol. class with screw neck ND40
TFVol. (mL)	65.5
UsVol. (mL)	50
MWVol. (mL)	5
Res. vol. (mL)	2.5
Unit size	125/pack

Special products

Other crimp neck vials ND20 and crew neck vial ND18

Cat. no.	20 09 0289	18 09 0864
Size (mL)	50	20
Dimensions (mm)	101 x 31	75.5 x 23
Description	Clear, crimp	Clear, headspace, rounded bottom, with screw thread ND18
TFVol. (mL)	58	21.2
UsVol. (mL)	50	20
MWVol. (µL)	3080	1500
Res. vol. (µL)	1500	800
Unit size	100/pack	100/pack

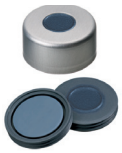
Cat. no.	20 09 0343
Size (mL)	100
Dimensions (mm)	94.5 x 51.6
Description	Clear, crimp, 3rd hydrol. class glass
TFVol. (mL)	118.8
UsVol. (mL)	100
MWVol. (mL)	10
Res. vol. (mL)	6
Unit size	88/pack

Special products

Special closures

13 mm aluminum special closures

Cat. no.	13 03 1381	13 03 1382
Description cap	Aluminum, clear lacquered	Aluminum, clear lacquered, complete tear-off
Hole (mm)	6	-
Septum material	Butyl red/PTFE grey	Butyl red/PTFE grey
Durometer	55° shore A	55° shore A
Thickness (mm)	2.0	2.0
Unit size	100/pack	100/pack



Cat. no.	13 03 0307	13 03 0308
Description cap	Aluminum, clear lacquered	Aluminum, clear lacquered, centre tear-off
Hole (mm)	6	-
Septum material	Pharma-Fix septa (butyl/PTFE)	Pharma-Fix septa (butyl/PTFE)
Durometer	50° shore A	50° shore A
Thickness (mm)	2.0	2.0
Unit size	100/pack	100/pack

Special products

Special closures

PE special closures

Cat. no.	22 15 1824	22 15 1869
Description cap	PE cap, transparent	PE cap, transparent
Size (mm)	22 x 9.1	22 x 9.1
Hole (mm)	4.3	8.0
Septum material	Silicone blue transparent/PTFE white, Y-slit	Silicone blue transparent/PTFE white, Y-slit
Durometer	45° shore A	45° shore A
Thickness (mm)	1.3	1.3
Unit size	100/pack	100/pack

PP special closures

Cat. no.	40 15 0674
Description cap	PP, black, closed top
Size (mm)	40
Septum material	PTFE virginal
Durometer	53° shore D
Thickness (mm)	0.5
Unit size	100/pack

Special products

Special septa

Septa for DURAN™ laboratory bottles



Cat. no.	12 02 0468	16 02 0469	23 02 0470
Septum material	Silicone cream/PTFE beige	Silicone cream/PTFE beige	Silicone cream/PTFE beige
Size (mm)	12.9	16.8	23.4
For	DURAN screw cap GL14	DURAN screw cap GL18	DURAN screw cap GL25
Durometer	55° shore A	55° shore A	55° shore A
Thickness (mm)	3.2	3.2	3.2
Unit size	1000/pack	1000/pack	1000/pack



Cat. no.	30 02 0471	43 02 0413	43 02 2095
Septum material	Silicone cream/PTFE beige	Silicone cream/PTFE beige	Butyl red/PTFE grey
Size (mm)	30.3	43.2	43.2
For	DURAN screw cap GL32	DURAN screw cap GL45	DURAN screw cap GL45
Durometer	55° shore A	55° shore A	55° shore A
Thickness (mm)	3.2	3.2	2.5
Unit size	1000/pack	500/pack	500/pack

Septa 13 mm


Cat. no.	13 02 1380	13 02 0261
Septum material	Butyl red/PTFE grey	Pharma-Fix septa (butyl/PTFE)
Size (mm)	13	13
Durometer	55° shore A	50° shore A
Thickness (mm)	2.0	2.0
Unit size	1000/pack	1000/pack

96 and 384 well plates and mats

Description

- Comprehensive range of 96- and 384- well plates for routine and complex analyses
- SBS and ANSI standard footprint design for broad instrument compatibility
- Chromatography tested for solvent compatibility and inertness
- Low-leachable, high-purity materials and manufacturing processes
- U- and V- bottom wells for optimal sample recovery
- Ideal for pharmaceutical applications, sample collection and storage, combinatorial chemistry and high throughput screening

Contents	Link
96 well plates	
384 well plates	
Sealmats	

96 and 384 well plates

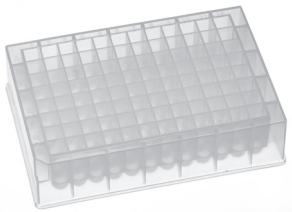
96 well plates

Standard 96 well plates

- Standard well plates, plastic, non-coated, non-sterile, chromatography tested
- GC/MS tested polypropylene material
- Chemically and thermally resistant, temperature range from -80 °C to +121 °C
- For routine applications using water, water + polar solvents or polar solvents; high sample concentrations; MS single ion mode; non-regulated labs



Cat. no.	08 05 2898	08 05 3643	08 05 2900
Description	Round well, 8 mm	Round well, 8 mm	Round well, 8 mm
Material	PP	PP	PP
Plate height (mm)	14.4	26.5	31.6
Bottom	V-shape	U-shape	U-shape
TFVol. (µL)	450	1100	1300
UsVol. (µL)	10-400	50-900	50-1000
Unit size	20/pack	50/pack	5/pack

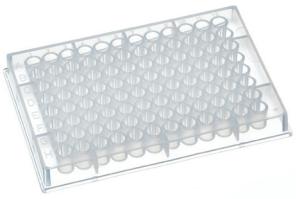
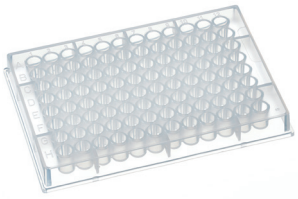

Cat. no.	08 05 4454	08 05 3644	08 05 2902
Description	Round well, 8 mm	Square well	Square well
Material	PP	PP	PP
Plate height (mm)	44	31	44
Bottom	U-shape	U-shape	V-shape
TFVol. (µL)	2000	1600	2000
UsVol. (µL)	50-1900	50-1300	50-1900
Unit size	50/pack	96/pack	5/pack

96 and 384 well plates

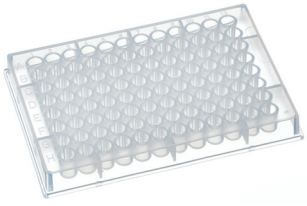
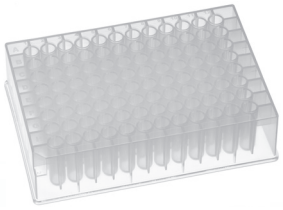
96 well plates

Certified 96 well plates

- Certified well plates, plastic, non-coated, non-sterile, chromatography tested
- Manufactured from ultra-low bleed high purity PP resin
- GC/MS and LC/MS tested for organic extractables
- Chemically and thermally resistant, temperature range from -80 °C to +121 °C
- For sensitive applications using water, water + polar solvents or polar solvents; lower sample concentrations; TIC and full chromatograms; regulated labs

Cat. no.	08 05 3646	08 05 2924	08 05 2925
Description	Round well, 5.6 mm	Round well, 7 mm	Round well, 7 mm
Material	PP	PP	PP
Plate height (mm)	15.0	14.75	14.75
Bottom	Total V-shape	Flat bottom	U-shape
TFVol. (µL)	100	400	380
UsVol. (µL)	5-80	10-350	10-300
Unit size	50/pack	10/pack	10/pack

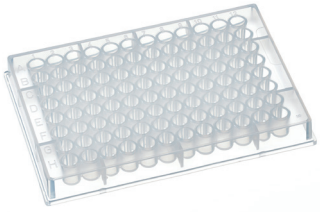
Cat. no.	08 05 4460	08 05 4402	08 05 4457	08 05 2921
Description	Round well, 7 mm	Round well, 7 mm	Round well, 7 mm	Square well
Material	PP	PP	PP	PP
Plate height (mm)	14.7	33.0	41.6	44.4
Bottom	V-shape	U-shape	U-shape	V-shape
TFVol. (µL)	340	1000	1000	2000
UsVol. (µL)	10-250	50-900	50-900	50-1900
Unit size	100/pack	50/pack	50/pack	5/pack

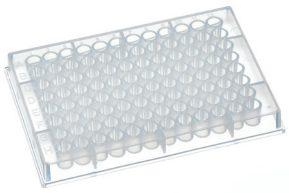
96 and 384 well plates

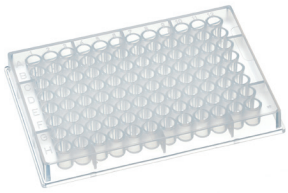
96 well plates

Glass coated 96 well plates

- High quality PP well plates coated with 200 nm thick layer of silicon dioxide
- Well plates with a chemical resistance similar to glass while retaining the advantages of PP
- Cost-effective alternative to inserted glass vials
- Excellent for applications where plastic plates are not suitable
- Chemically and thermally resistant, temperature range from -80 °C to +80 °C
- For very sensitive applications using all solvent types; hydrophobic samples (inc. proteins); lowest sample concentrations; MSCERT level; regulated labs







Cat. no.	08 05 4064	08 05 4065	08 05 4067
Description	Round well, 7 mm	Round well, 7 mm	Round well, 7 mm
Material	PP, glass coated	PP, glass coated	PP, glass coated
Plate height (mm)	14.6	14.6	14.6
Bottom	U-shape	V-shape	Flat bottom
TFVol. (µL)	320	350	400
UsVol. (µL)	250	300	350
Unit size	10/pack	10/pack	10/pack

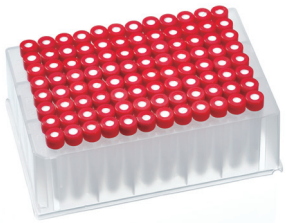
Cat. no.	08 05 4068	08 05 4069
Description	Round well, 7 mm	Square well
Material	PP, glass coated	PP, glass coated
Plate height (mm)	41.5	44
Bottom	U-shape	V-shape
TFVol. (mL)	1.2	2.4
UsVol. (mL)	1	2
Unit size	10/pack	10/pack

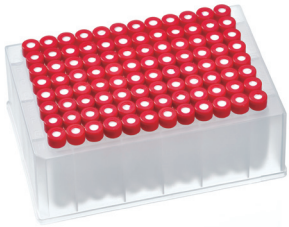
96 and 384 well plates

96 well plates

96 well plates with glass inserts, sealed individually

- 96 well plates with glass inserts are used in combinatorial chemistry when the pure PP plate is not inert enough
- These inserts that are custom-tailored to fit a broad variety of 96 well plates. They can either be sealed individually with a PE cap closure or over the whole block with a Sealmat block cover.
- The products can be obtained as individual components or as completely assembled, ready-to-use convenience plates





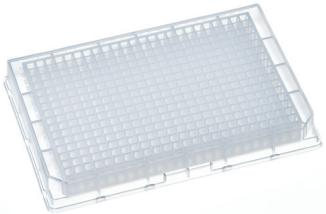
Cat. no.	08 20 0897	08 20 0911
Description	Deep well block 96 position	Square well block 96 position
Material	PP	PP
Description	Filled with 0.35 mL micro-inserts	Filled with 1 mL micro-inserts
Material	Clear glass	Clear glass
Dimensions (mm)	42.5 x 6	49.9 x 7.6
Shape	Conical bottom	Rounded bottom
TFVol. (µL)	410	1200
UsVol. (µL)	350	1000
Description	Assembled with 9 mm PE cap, red, 4 mm hole, silicone white/PTFE red, 45° shore A, 1.5 mm, slit	Assembled with 9 mm PE cap, red, 4 mm hole, silicone white/PTFE red, 45° shore A, 1.5 mm, slit
Unit size	1/pack	1/pack

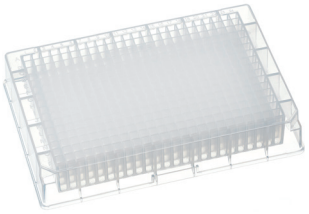
96 and 384 well plates

384 well plates

Standard 384 well plates, plastic, non-coated, non-sterile, chromatography tested

- Standard well plates, plastic, non-coated, non-sterile, chromatography tested
- GC/MS tested polypropylene material
- Chemically and thermally resistant, temperature range from -80 °C to +121 °C
- For routine applications using water, water + polar solvents or polar solvents; high sample concentrations; MS single ion mode; non-regulated labs





Cat. no.	08 05 4456	08 05 4455
Description	Square well	Square well
Material	PP	PP
Plate height (mm)	15.4	22
Bottom	V-shape	U-shape
TFVol. (µL)	145	252
UsVol. (µL)	4-120	5-240
Unit size	100/pack	100/pack

96 and 384 well plates

384 well plates

Certified 384 well plates

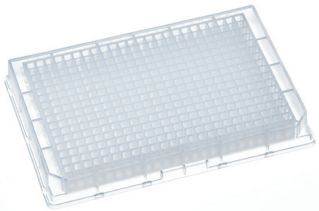
- Certified well plates, plastic, non-coated, non-sterile, chromatography tested
- Manufactured from ultra-low bleed high purity PP resin
- GC/MS and LC/MS tested for organic extractables
- Chemically and thermally resistant, temperature range from -80 °C to +121 °C
- For sensitive applications using water, water + polar solvents or polar solvents; lower sample concentrations; TIC and full chromatograms; regulated labs

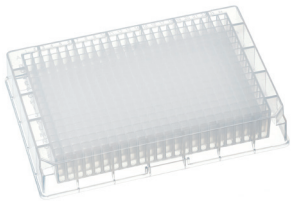
Cat. no.	08 05 4458	08 05 4459
Description	Square well	Square well
Material	PP	PP
Plate height (mm)	14.4	30.2
Bottom	U-shape	V-shape
TFVol. (µL)	58	300
UsVol. (µL)	2-35	5-240
Unit size	60/pack	48/pack

384 well plates

Glass coated 384 well plates

- High quality PP well plates coated with 200nm thick layer of silicon dioxide
- Well plates with a chemical resistance similar to glass while retaining the advantages of PP
- Cost-effective alternative to inserted glass vials
- Excellent for applications where plastic plates are not suitable
- Chemically and thermally resistant, temperature range from -80 °C to +80 °C
- For very sensitive applications using all solvent types; hydrophobic samples (inc. proteins); lowest sample concentrations; MSCERT level; regulated labs





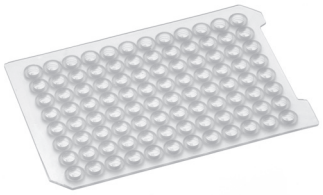
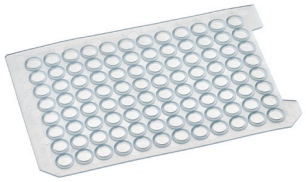
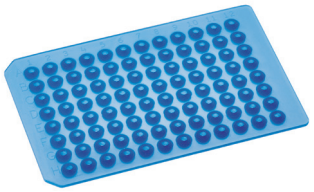
Cat. no.	08 05 4070	08 05 4072
Description	Square well	Square well
Material	PP, glass coated	PP, glass coated
Plate height (mm)	14.4	22
Bottom	Flat	U-shape
TFVol. (µL)	120	240
UsVol. (µL)	90	180
Unit size	10/pack	6/pack

96 and 384 well plates

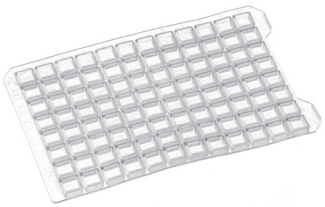
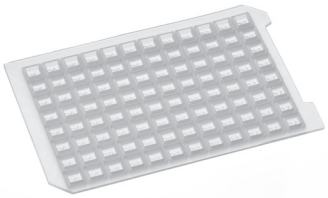
Sealmats

For plates with round and square wells of 8 mm

- Sealmats manufactured of EVA (Ethylene-vinyl acetate) or silicone with or without PTFE coating
- Footprint permits plates to be securely stacked without robotic arm interface
- Eliminates cross-contamination of samples
- Silicone sealmats are dry heat autoclavable, offer excellent chemical compatibility, and withstand low temperature to -80 °C
- Resists coring and tearing
- Superior resealability after multiple injections
- Available pre-slit for easy penetration and reduced vacuum formation

Cat. no.	08 29 3639	08 29 2929	08 29 2930
Slit cat. no.	-	-	08 29 4461
Description	Sealmat, 96 well	Sealmat, 96 well	Sealmat, 96 well
Color	Clear	Clear	Blue
Material	Silicone with cross	EVA	Silicone/PTFE
Shape	Round	Round	Round
For (mm)	8	8	8
Unit size	50/pack	5/pack	5/pack

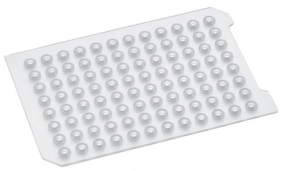
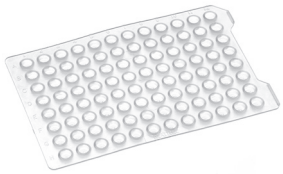
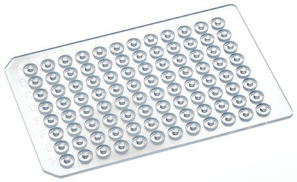
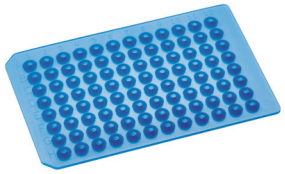
Cat. no.	08 29 3637	08 29 3640
Description	Sealmat, 96 well	Sealmat, 96 well
Color	Clear	Clear
Material	EVA	Silicone
Shape	Square	Square
For (mm)	8	8
Unit size	50/pack	50/pack

96 and 384 well plates

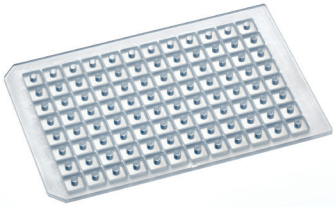
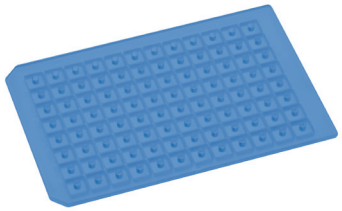
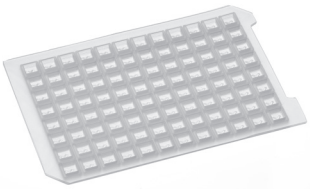
Sealmats

For plates with round wells of 7 mm, square wells of 8 mm

- Sealmats manufactured of EVA (Ethylene-vinyl acetate) or silicone with or without PTFE coating
- Footprint permits plates to be securely stacked without robotic arm interface
- Eliminates cross-contamination of samples
- Silicone sealmats are dry heat autoclavable, offer excellent chemical compatibility, and withstand low temperature to -80 °C
- Resists coring and tearing
- Superior resealability after multiple injections
- Available pre-slit for easy penetration and reduced vacuum formation

Cat. no.	08 29 3642	08 29 3813	08 29 4470	08 29 2933
Slit cat. no.	-	-	08 29 2935	08 29 4463
Description	Sealmat, 96 well	Sealmat, 96 well	Sealmat, 96 well	Sealmat, 96 well
Color	Clear	Clear	Clear	Blue
Material	Silicone with cross	EVA	Silicone	Silicone/PTFE
Shape	Round	Round	Round, flat base, step	Round
For (mm)	5.6	7	7	7
Unit size	50/pack	100/pack	5/pack	5/pack

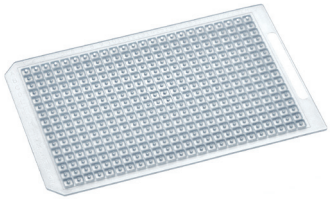
Cat. no.	08 29 4466	08 29 4465	08 29 3640
Slit cat. no.	08 29 2941	08 29 2940	-
Description	Sealmat, 96 well	Sealmat, 96 well	Sealmat, 96 well
Color	Clear	Blue	Clear
Material	Silicone	Silicone/PTFE	Silicone with cross
Shape	Square	Square	Square
For (mm)	8	8	8
Unit size	5/pack	5/pack	50/pack

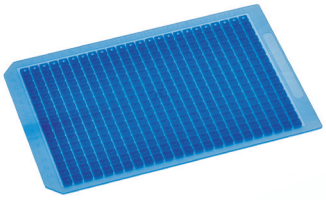
96 and 384 well plates

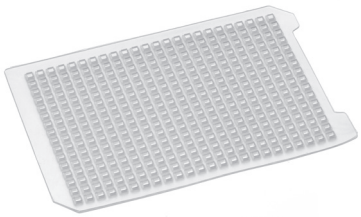
Sealmats

For plates with 384 wells

- Sealmats manufactured silicone with or without PTFE coating
- Footprint permits plates to be securely stacked without robotic arm interface
- Eliminates cross-contamination of samples
- Silicone sealmats are dry heat autoclavable, offer excellent chemical compatibility, and withstand low temperature to -80 °C
- Resists coring and tearing
- Superior resealability after multiple injections
- Available pre-slit for easy penetration and reduced vacuum formation







Cat. no.	08 29 4468	08 29 4467	08 29 3641
Slit cat. no.	08 29 4471	08 29 4469	-
Description	Sealmat, 384 well	Sealmat, 384 well	Sealmat, 384 well
Color	Clear	Blue	Clear
Material	Silicone	Silicone/PTFE	Silicone with cross
Shape	Square	Square	Square
Unit size	5/pack	5/pack	50/pack

Syringe filters

Description

Our high-quality syringe filters ensure reliable elimination of both particles and microorganisms in the sample preparation process, providing consistent and reliable experimental results for a range of samples and applications. Syringe filters protect chromatography columns by preventing the accumulation of fine particles in the column, which forms premature blockages. Ultrasonic welding and over moulding with color coding ensure sample safety and correct membrane selection.

Typical applications

Nylon (PA)

Hydrophilic membrane with a broad range of applications for aqueous or organic samples

- HPLC and organic solvent sample preparation and clean up
- Dissolution sample analysis
- General sample preparation prior to analytical analysis
- Mixed sample matrix of aqueous or organic dissolved analytes

Cellulose acetate (CA)

Filtering of aqueous solutions or biological samples

- Protein-based samples with high nonspecific binding
- Sample analysis which require maximum recoveries

PTFE (hydrophobic)

For use with organic matrices. PTFE hydrophobic membranes require pre-treatment with alcohol before being suitable for aqueous or high aqueous/organic samples.

- HPLC and organic solvent sample preparation and clean up
- Dissolution sample analysis
- General sample preparation prior to analytical analysis

PTFE (hydrophilic)

For use with organic matrices, does not require pretreatment

- HPLC and organic solvent sample preparation and clean up
- Dissolution sample analysis
- General sample preparation prior to analytical analysis

PVDF-L (Hydrophobic)

For use with aqueous samples

- HPLC and organic solvent sample preparation and clean up
- Protein based samples with high non-specific binding
- Environmental water samples

PES

For the analysis of ionic analytes

- IC sample preparation and analysis
- Dissolution testing

Syringe filters

17 mm syringe filters

- For small sample volumes up to 10 mL
- Female Luer Lock inlet, male Luer Slip outlet
- Retention volume <0.030 mL, operating pressure up to 8 bar
- Injection moulded neck with color code, print of membrane type

Cat. no.	17 16 2076	17 16 2077	17 16 2078	17 16 2079
Pore size (µm)	0.2	0.45	0.2	0.45
Membrane	PTFE	PTFE	Regenerated cellulose (RC)	Regenerated cellulose (RC)
Prefilter	No	No	No	No
Color code	Blue	Yellow	Grey	Brown
Unit size	100/pack	100/pack	100/pack	100/pack

Cat. no.	17 16 2080	17 16 2081	17 16 2082	17 16 2083
Pore size (µm)	0.2	0.45	0.2	0.45
Membrane	Nylon (PA)	Nylon (PA)	PVDF	PVDF
Prefilter	No	No	No	No
Color code	Purple	Green	Black	Red
Unit size	100/pack	100/pack	100/pack	100/pack

Syringe filters

25 mm syringe filters

- Best option for laboratories using sample sizes from 1.5 mL to 100 mL
- Retention volume >0.1 mL, operating pressure up to 15 bar
- Female Luer Lock inlet, male Luer Slip outlet
- Ultrasonic welded housing with color code



Cat. no.	25 16 0346	25 16 0347	25 16 0348
Pore size (µm)	0.2	0.45	0.2
Membrane	PTFE	PTFE	Regenerated cellulose (RC)
Prefilter	No	No	No
Color code	Green	Natural	Blue
Unit size	100/pack	100/pack	100/pack



Cat. no.	25 16 0349	25 16 0350	25 16 0351
Pore size (µm)	0.45	0.20	0.45
Membrane	Regenerated cellulose (RC)	Nylon (PA)	Nylon (PA)
Prefilter	No	No	No
Color code	Yellow	Bright blue	Bright green
Unit size	100/pack	100/pack	100/pack

Syringe filters

30 mm syringe filters

- Retention volume <0.140 mL, operating pressure up to 15 bar
- Female Luer Lock inlet, male Luer Slip outlet
- Injection moulded neck with color code, print of membrane type

Cat. no.	30 16 2086	30 16 2087	30 16 2088	30 16 2089
Pore size (µm)	0.2	0.45	0.2	0.45
Membrane	PTFE	PTFE	Regenerated cellulose (RC)	Regenerated cellulose (RC)
Prefilter	No	No	No	No
Color code	Blue	Yellow	Grey	Brown
Unit size	100/pack	100/pack	100/pack	100/pack

Cat. no.	30 16 2090	30 16 2091	30 16 2092	30 16 2093	30 16 2094
Pore size (µm)	0.20	0.45	0.2	0.45	1.2
Membrane	Nylon (PA)	Nylon (PA)	PVDF	PVDF	GMF
Prefilter	No	No	No	No	No
Color code	Purple	Green	Black	Red	Orange
Unit size	100/pack	100/pack	100/pack	100/pack	100/pack

Plastic disposable syringes

Description

- The non-sterile disposable syringes made of solvent robust polypropylene for all syringe filter applications
- Syringes manufactured according to ISO 13485
- Free of latex, free of plasticizers, free of PVC
- Two-part, all-plastic construction made of a chemically resistant, inert polypropylene
- No rubber plunger closures or silicone lubricants that may cause sample contamination
- Easy to read permanent graduations
- All Luer Lock syringes have centered tips

Contents	Link
Plastic disposable syringes with Luer Lock	
Plastic disposable syringes with Luer Slip	

Plastic disposable syringes

Plastic disposable syringes with Luer Lock

Cat. no.	02 36 2399	05 36 2400	10 36 2401	20 36 2402
Size (mL)	2	5	10	20
Description	Non-sterile	Non-sterile	Non-sterile	Non-sterile
Connection	Luer Lock	Luer Lock	Luer Lock	Luer Lock
Unit size	100/pack	100/pack	100/pack	100/pack

Plastic disposable syringes with Luer Slip

Cat. no.	02 36 2403	05 36 2404	10 36 2405	20 36 2406
Size (mL)	2	5	10	20
Description	Non-sterile	Non-sterile	Non-sterile	Non-sterile
Connection	Luer Slip	Luer Slip	Luer Slip	Luer Slip
Unit size	100/pack	100/pack	100/pack	100/pack

GC capillary connectors

Description

- For precise connections of fused-silica capillary columns in GC
- Universal capillary connectors connect all columns with an inner diameter of 0.20 - 0.53 mm and an outer diameter of 0.30 - 0.75 mm

Contents	Link
GC capillary connectors	

GC capillary connectors

Cat. no.	02 17 0472	02 17 0473
Use for	2 columns	3 columns
Description	Universal capillary connector	Universal Y-capillary connector
Unit size	10/pack	1/pack

Crimpers and decappers

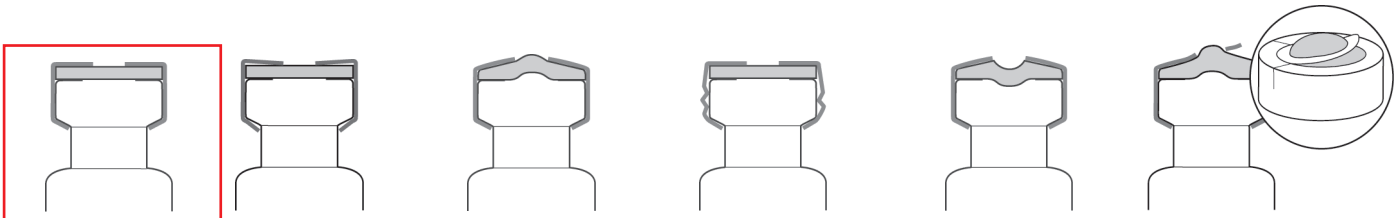
Description

- Crimpers and decappers to attach and remove crimp caps
- Manual, pneumatic and electronic options available
- Secure, repeatable crimps or remove caps with minimized risk of damage
- Tools for 8 mm, 11 mm, 13 mm and 20 mm crimp caps
- Further specials available on request
- Repair service available

Contents	Link
Manual crimping tools	
Manual decapping tools	
Staineless steel clean environment crimping tools	
Pneumatic crimper	
Electronic crimpers and decappers	
Electronic high power crimp station	

Crimpers and decappers

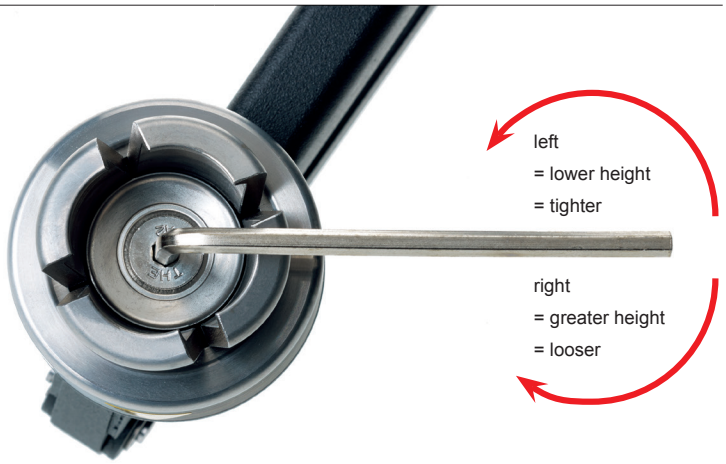
An inappropriate crimp can be recognized by:



Flat cap surface Flat septa surface	Untight aluminum edge	Upward bulge of the crimp cap	Deformation of the crimp cap sides	Convex looking liner	Rounded edges/upward bulge of the cap/liner
Tight fitting of the Aluminum edge Plain + undeformed cap sides	Adjust crimping pressure with the screw in the handle + Adjust crimping height with the hexogen key (s. below)	Adjust crimping pressure with the screw in the handle + Adjust crimping height with the hexogen key (s. below)	Adjust crimping height with the hexogen key (s. below)	Adjust crimping pressure with the screw in the handle	Especially with headspace caps it is important not to overcrimp them. If the aluminum is stretched too much under the crimp neck, the bridges of the scorelines suffer too much stress and can break open at even low pressure (below 3 bars) or - in worst case - can even tear apart beside the scorelines.
Good	Undercrimped	Overcrimped	Overcrimped	Overcrimped	Overcrimped

An inappropriate crimp cannot be recognized by trying to turn the seal, as completely PTFE-laminated liners have a very slippery surface on the glass rim, which allows anyone to turn the cap, if the right torque is used.

The turning of the cap is even easier when the liner is sitting on a headspace (bevelled top) glass rim, as it then only has very small surface to rest on.



Crimpers and decappers

Manual crimping tools

- Crimping tools provide a reproducible, secure vial closure
- Easy and convenient handling
- High quality construction for durability and long life
- Painted, plated and coated for maximum corrosion resistance
- Textured handle surface provides an assured grip
- Special sizes and crimpers for pump spray closures on request

Cat. no.	08 06 0005	11 06 0006	13 06 0007	20 06 0008	28 06 0320	32 06 0135
Description	Crimper for 8 mm aluminum caps	Crimper for 11 mm aluminum caps	Crimper for 13 mm aluminum caps	Crimper for 20 mm aluminum caps	Crimper for 28 mm aluminum caps	Crimper for 32 mm aluminum caps
Unit size	1/pack	1/pack	1/pack	1/pack	1/pack	1/pack

Cat. no.	13 06 0069	20 06 0043	20 06 0170	28 06 0190
Description	Crimper for 13 mm flip top/ flip off closures	Crimper for 20 mm flip top/ flip off closures	Crimper for 20 mm flip tear up closures	Crimper for 28 mm flip top/ flip off closures
Unit size	1/pack	1/pack	1/pack	1/pack

Manual decapping tools

Cat. no.	08 07 0001	11 07 0002	13 07 0003
Description	Decapper for 8 mm aluminum caps	Decapper for 11 mm aluminum caps	Decapper for 13 mm aluminum caps
Unit size	1/pack	1/pack	1/pack

Cat. no.	20 07 0004	28 07 0092	32 07 0078
Description	Decapper for 20 mm aluminum caps	Decapper for 28 mm aluminum caps	Decapper for 32 mm aluminum caps
Unit size	1/pack	1/pack	1/pack

Crimpers and decappers

Stainless steel clean environment crimping tools

- The crimping/decapping mechanism is corrosion and heat resistant while the stainless steel construction removes the need for any protective coating on the handle or crimp head
- Can withstand repeated sterilization for clean environment use without the risk of damaging the tool
- Available in 11 mm,13 mm and 20 mm sizes
- Crimping tools are adjustable in crimping pressure and height to offer optimal crimping results on varying vial styles
- As no lubricant is used and the handles are from non-lacquered stainless steel, the crimper can be used in clean environment without limitation

Manual crimping tools

Cat. no.	11 06 2225	13 06 2227	20 06 2229
Description	11 mm crimper made of stainless steel, sterilizable, for clean environment applications	13 mm crimper made of stainless steel, sterilizable, for clean environment applications	20 mm crimper made of stainless steel, sterilizable, for clean environment applications
Unit size	1/pack	1/pack	1/pack

Manual decapping tools

Cat. no.	11 07 2226	13 07 2228	20 07 2230
Description	11 mm decapper made of stainless steel, sterilizable, for clean environment applications	13 mm decapper made of stainless steel, sterilizable, for clean environment applications	20 mm decapper made of stainless steel, sterilizable, for clean environment applications
Unit size	1/pack	1/pack	1/pack

Crimpers and decappers

Electronic crimpers and decappers

- LCD display for convenient crimp force adjustment, fault monitoring and 8 different languages built in
- Electronic crimpers and decappers provide secure, reproducible crimps and quick and easy removal of aluminum closures with the push of a button
- Ergonomic design and push button operation eliminates wrist strain
- Built in long life lithium ion rechargeable battery
- Brush-less technology for a longer lifetime and less particle emission
- Universal 100V–240V charger includes plug adaptors for most power outlets
- Crimpers and decappers can be operated while plugged in and recharging
- Crimp force sensing assures consistent proper sealing

Electronic crimping tools

Cat. no.	08 00 3946	11 00 3947	13 00 3948	20 00 3949
Description	8 mm electronic crimper, 110 - 240V	11 mm electronic crimper, 110 - 240V	13 mm electronic crimper, 110 - 240V	20 mm electronic crimper, 110 - 240V
Unit size	1/pack	1/pack	1/pack	1/pack

Electronic decapping tools

Cat. no.	11 00 3950	13 00 3951	20 00 3952
Description	11 mm electronic decapper, 110 - 240V	13 mm electronic decapper, 110 - 240V	20 mm electronic decapper, 110 - 240V
Unit size	1/pack	1/pack	1/pack

Replacement battery for electronic crimpers and decappers

Cat. no.	00 00 3217
Description	Replacement battery, 6.4V lithium Ion for electronic crimpers and decapper
Unit size	1/pack

Crimpers and decappers

Electronic high power crimp station

- LCD display for convenient crimp force adjustment, fault monitoring and 8 different languages built in
- High power, perfect for magnetic steel caps
- Adjustable crimp settings for compatibility with most vial/septum/seal combinations including aluminum, steel and bi-metal closures
- Exchangeable crimp and decapping heads can be removed or installed in seconds
- Brush-less technology for a longer lifetime and less particle emission
- Crimp-force sensing automatically determines when a proper closure has been formed and opens the jaws to release the vial

Programmable electronic high power crimp station (basic tool)

Cat. no.	00 00 3953
Description	Programmable electronic high power crimp station. Including the basic high power crimper and the 12 volt DC supply with the power cord. (Accessory is not included)
Unit size	1/pack

11 mm and 20 mm programmable electronic high power crimp station

Cat. no.	11 00 3954	20 00 3955
Description	Programmable electronic high power crimp station with variable accessory base, external power supply and two exchangeable jaw sets (11 mm crimp and 11 mm decrimp), 110 - 240V	Programmable electronic high power crimp station with variable accessory base, external power supply and two exchangeable jaw sets (20 mm crimp and 20 mm decrimp), 110 - 240V
Unit size	1/pack	1/pack

Crimping heads for programmable electronic high power crimp station

Cat. no.	08 06 3200	11 06 3202	13 06 3204	20 06 3206
Description	Crimping head for 8 mm crimp caps	Crimping head for 11 mm crimp caps	Crimping head for 13 mm crimp caps	Crimping head for 20 mm crimp caps
Unit size	1/pack	1/pack	1/pack	1/pack

Decapping heads for programmable electronic high power crimp station

Cat. no.	11 07 3203	13 07 3205	20 07 3207
Description	Decapping head for 11 mm aluminum caps	Decapping head for 13 mm aluminum caps	Decapping head for 20 mm aluminum caps
Unit size	1/pack	1/pack	1/pack

Vial racks and storage boxes

Description

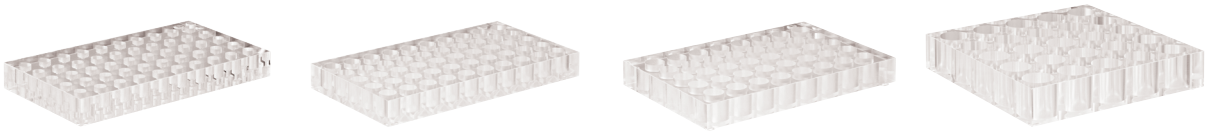
- Selection of racks and storage boxes
- Suitable for vials from 0.3 mL to 4 0mL

Contents	Link
Vial racks	
PP storage boxes	

Vial racks and storage boxes

Vial racks

- Easy handling and transportation of sample vials
- Filling visible because of transparent acrylic material
- Stable standing position because of solid construction
- Stack stability because of silicone base
- Racks with 8.5mm cavity used for round or conical bottom vials
- Custom vial racks can be manufactured according to customer's specifications



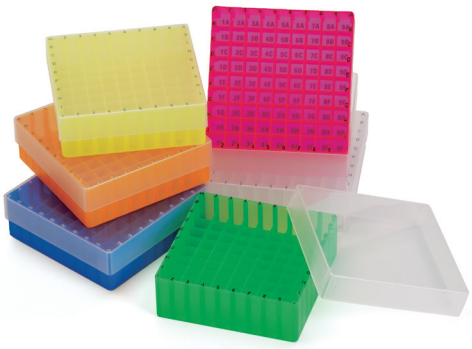
Cat. no.	08 21 1000	12 21 1001	15 21 1664	24 21 1002
Description	Vial rack, acrylic	Vial rack, acrylic	Vial rack, acrylic	Vial rack, acrylic
Size (mm)	173 x 95 x 20	173 x 95 x 20	175.8 x 115.5 x 20	160 x 160 x 30
Cavities	50 with a diameter of 8.5 mm	50 with a diameter of 12 mm	40 with a diameter of 15.1 mm	25 with a diameter of 24 mm
Vial type	Conical cavity for round or conical bottom ND8 crimp vials	For 1.5 and 2 mL vials	For 4 mL vials	For EPA and storage vials
Unit size	1/pack	1/pack	1/pack	1/pack

Cat. no.	12 21 2187	15 21 2480
Color	Blue	Blue
Description	PP vial rack, for 1.5 mL vials, stackable	PP vial rack, for 4 mL vials, stackable
Size (mm)	200 x 105 x 17	230 x 117 x 28
Cavities	50	50
Unit size	1/pack	1/pack

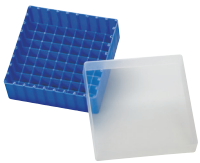
Vial racks and storage boxes

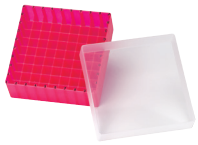
PP storage boxes

- Safe standing position on the laboratory table and during transport due to specific cavities related to the vial diameter
- Ideal for space-saving storage in fridges, as the transparent lid prevents condensations on the closures and thus avoids a possible contamination in the cooling unit
- Temperature resistant from -80 °C up to +100 °C
- Alpha numeric coding (1.5 mL, 4 mL) for clear sample identification
- Unbreakable polypropylene bottom and lid, stackable
- Chemically resistant and fairly robust; autoclavable



PP storage boxes for 1.5 mL sample vials





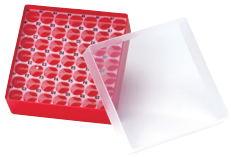
Cat. no.	12 21 2420	12 21 2421	12 21 2422
Color	Blue	Orange	Pink
Description	PP storage box for 1.5 mL (1.8 mL, 2 mL) vials or 2 mL shell vials, with cover		
Size (mm)	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45
Cavities	81 with alphanumeric coding of all 4 margins as well as the cavities at the bottom		
Unit size	1/pack	1/pack	1/pack

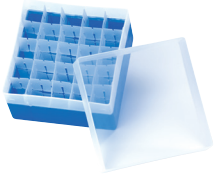
Cat. no.	12 21 2423	12 21 2424	12 21 2425
Color	Yellow	Green	Transparent
Description	PP storage box for 1.5 mL (1.8 mL, 2 mL) vials or 2 mL shell vials, with cover		
Size (mm)	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45
Cavities	81 with alphanumeric coding of all 4 margins as well as the cavities at the bottom		
Unit size	1/pack	1/pack	1/pack

Vial racks and storage boxes

PP storage boxes

PP storage boxes for 4 mL sample vials





Cat. no.	15 21 2426	24 21 2427
Color	Red	Blue
Description	PP storage box for 4 mL vials or 4 mL shell vials, with cover	PP storage box for 5 mL, 10 mL and 20 mL headspace-vials, with cover
Size (mm)	130 x 130 x 52	130 x 130 x 102
Cavities	49 with alphanumeric coding at the cavities	25
Unit size	1/pack	1/pack

PP storage boxes for 5 mL, 10 mL and 20 mL headspace vials

Cat. no.	28 21 2428
Color	Violet
Description	PP storage box for 20 mL EPA vials, with cover
Size (mm)	130 x 130 x 80
Cavities	16
Unit size	1/pack

PP storage boxes for 20 mL, 30 mL and 40 mL EPA vials with cover

Cat. no.	28 21 2429
Color	Violet
Description	PP storage box for 30 mL and 40 mL EPA vials, with cover
Size (mm)	130 x 130 x 105
Cavities	10
Unit size	1/pack

Solutions for PFAS testing

Description
Per- and polyfluorinated alkyl substances (PFAS) are manufactured chemicals that have been used in a wide variety of consumer and industrial products. They are known as “forever chemicals” because they do not break down and can bioaccumulate. As such, there is an increasing need for robust, reliable methods that can detect PFAS at trace levels in the environment, food and clinical samples. We offer the following sample handling solutions which are suitable for PFAS analysis.

Solutions for PFAS testing

Short thread plastic vials ND9, wide opening


Cat. no.	11 19 1205	11 19 1706	11 19 0932
Size (mL)	1.5	0.7	0.3
Dimensions (mm)	32 x 11.6	32 x 11.6	32 x 11.6
Description	PP, transparent, filling lines	PP, transparent	PP, transparent
TFVol. (mL)	1.9	0.9	0.4
UsVol. (mL)	1.5	0.7	0.3
MWVol. (µL)	200	150	30
Res. vol. (µL)	<110	<80	<4
Unit size	100/pack	100/pack	100/pack

Short thread closure ND9

Cat. no.	09 15 4440
Septum material	Silicone white/polyimide red
Hole (mm)	6
Durometer	40° shore A
Thickness (mm)	1.0
Unit size	100/pack

Short thread PP cap ND9

Cat. no.	09 08 2771
Septum material	PP, clear
Unit size	100/pack

Solutions for PFAS testing

Plastic snap neck vials ND11

Cat. no.	11 19 0933	11 19 1707
Size (mL)	0.3	0.7
Dimensions (mm)	32 x 11.6	32 x 11.6
Description	PP, transparent	PP, transparent
TFVol. (mL)	0.4	0.9
UsVol. (mL)	0.3	0.7
MWVol. (µL)	30	50
Res. vol. (µL)	<4	<25
Unit size	100/pack	100/pack

Snap closures ND11

Cat. no. hard cap	11 15 4441
Septum material	Silicone white/polyimide red
Hole (mm)	6
Durometer	40° shore A
Thickness (mm)	1.0
Unit size	100/pack

Cat. no.	11 08 3961
Description cap	PE snap cap, transparent
Septum material	PE with thinned penetration area
Unit size	100/pack

Solutions for PFAS testing

Crimp closures ND20

Cat. no.	20 03 0327	20 03 0326	20 03 1457
Description cap	Aluminum, clear lacquered	Headspace, clear lacquered	Magnetic, gold
Hole (mm)	10	8	8
Septum material	Silicone white/aluminum foil silver	Silicone white/aluminum foil silver	Silicone white/aluminum foil silver
Durometer	50° shore A	50° shore A	50° shore A
Thickness (mm)	3.0	3.0	3.0
Unit size	100/pack	100/pack	100/pack

Universal screw closure ND18

Cat. no.	18 03 1874
Description cap	Magnetic screw, silver
Hole (mm)	8
Septum material	Silicone white/aluminium foil silver
Durometer	50° shore A
Thickness (mm)	1.3
Unit size	100/pack

Solutions for PFAS testing

Septa 22 mm

Cat. no.	22 02 0487
Septum material	Silicone white/aluminum foil silver
Durometer	50° shore A
Thickness (mm)	3.0
Unit size	1000/pack

Screw closure ND24

Cat. no.	24 15 2160	24 15 2967
Description cap	PP, white	PP, white
Hole (mm)	Closed top	12.5
Septum material	Silicone white/aluminium foil silver	Silicone white/aluminium foil silver
Durometer	50° shore A	50° shore A
Thickness (mm)	3.0	3.0
Unit size	100/pack	100/pack

Descriptions

Product and brand names

UltraBond

In the UltraBond closure system the screw cap and the septum form an inseparable unit. Through a special processing technique, the molecular structure of the contact areas of the PP screw cap and the septum are changed in such a way that without the use of any glue or adhesive the components form a firm unit. These closures are often used instead of an assembled cap/septum combination where:

- Instruments use very thick and blunt needles, to avoid the risk of pushing the septum into the vial (9 mm UltraBond closures for short thread vials).
- Screw caps have a wide diameter, and a septum cannot always achieve a good press-fit in the cap (24 mm UltraBond closures for EPA vials).

Pharma-Fix

A Pharma-Fix septum is a moulded butyl/PTFE liner. Its PTFE lamination is only in the centre of the liner where the sample can get into contact with it. However, on the glass rim the very elastic butyl achieves a very tight closure which is essential especially in headspace analysis. A completely laminated butyl/PTFE septa has a much more slippery surface on the glass rim, so that the tightness is not as good as with a Pharma-Fix septa.

RedRubber

RedRubber/PTFE is a synthetic rubber which is softer than natural rubber/TEF and shows less fragmentation. It has a better cleanliness, although it is not comparable with the analytical purity of silicone. RedRubber is a cost-effective septum material for routine analysis in GC and HPLC with a temperature resistance of -40 °C up to 110 °C. However, due to a different molecular structure it does not have the outstanding resealability properties like natural rubber for multiple injections.

Descriptions

Explanations

Headspace cap
A headspace cap is a safety cap for headspace analysis, which should avoid explosion of the vial in case of too much internal pressure. The headspace cap has special score-lines with bridges that break open at an inner pressure of 3.0 ± 0.5 bar. Thus, the excess pressure escapes and the risk of vial explosion is avoided.

Insert
An insert, in contrast to a micro-vial, cannot be sealed on its own. It is neckless and always must be used within a vial. The diameter of the insert is dependent on the size of the vial opening. An insert reduces the volume, so that a needle can pick up smaller sample quantities. The longer the top of an insert the more the volume can be reduced.

Pre-cut septa
With slit liners used in HPLC the complete septum is cut through, in order to aid penetration of the needle. In contrast, pre-cut septa are only cut through the silicone layer, but not through the PTFE giving the same support to the needle without the risk of concentration changes due to solvent loss or contamination/septum material disruption from the solvent in the vial.

Closure
A closure is the assembled combination of a cap and a septum.

Durometer
Durometer is the hardness of a septum and is expressed in ° shore. The higher the grade the harder the septum; the lower the grade, the softer the septum. The softest liner is 35° shore A and the hardest 70° shore A. Besides the thickness of a septum the hardness is an essential indication when deciding which septum is suitable for the penetration of a certain type of needle (fragile needles, thin or thick needles, sharp or blunt needles, etc.)

Headspace neck (bevelled top)
A headspace neck or headspace vial with bevelled top has a crimp neck whose outer edges are bevelled. In contrast to a flat DIN crimp neck the septum only has a very small surface to sit on which could be a disadvantage regarding tightness (except for Pharma-Fix septa).

Micro-vial
Micro-vials can be sealed, but often need an adapter to run in the autosampler. In case they have a conical bottom, they cannot stand by themselves.

Silanized
Silanized vials are used to reduce the adsorption of polar compounds onto the normally polar surface of the glass container. Some compounds like amino-acids, proteins or phenols tend to react with the OH-groups of the glass, even if – as is common for chromatography – 1st hydrolytic class glass is used. Through the silanization process the glass surface is deactivated and so possible reactions between the polar compounds and the glass are eliminated.

UltraClean
Very clean silicone/PTFE septa for high sensitivity HPLC, GC and headspace analysis

Virginal (PTFE)
Untreated PTFE

Descriptions

Abbreviations

Title	Description
EPA	Environmental Protection Association
EPDM	Ethylene propylene diene monomer
EVA	Ethylene-vinyl acetate
GC	Gas chromatography
GMF	Glass microfibre
HPLC	High performance liquid chromatography
HS	Headspace
ND	Nominal diameter
NR	Natural rubber
PE	Polyethylene
PP	Polyproylene
PTFE	Polytetrafluorethylene
PVDF	Polyvinylidenfluoride
RR	RedRubber
SPME	Solid-phase micro extraction
TEF	Teflon (special type of PTFE)
TPX	TPX (methylpentene)
TFVol.	Total filling volume
USVol.	Usable volume
MWVol.	Minimum working volume
Res. Vol.	Residual volume

Vial volume examples

TFVol. = total volume
(filled until the top of the vial)

UsVol. = usable volume
(maximum recommended volume for normal usage)

MWVol. = minimum required volume for reproducible injections

Res. Vol. = residual volume
(where under normal autosampler performance the volume is not accessible any longer)

Vials

Vials

In chromatography a broad variety of glass or plastic vials are used as sample containers for analysis. As they are mainly used within autosamplers and other automatic instrumentation, strict conformity of all dimensions is crucial for trouble-free operation. Besides these physical properties, vials also must fulfil requirements regarding inertness and cleanliness, as otherwise analysis results may be incorrect.

The majority of our all vials are made from 1st hydrolytic class glass. 1st hydrolytic class glass is very hard and has a low expansion coefficient even at high temperature variations. It shows an excellent chemical resistance to acidic and neutral solutions, and even to alkaline solutions due to its relatively low alkali content. The higher density of the glass surface offers better hydrolytic resistance. Clear glass of 1st hydrolytic class is differentiated by 33 expansion (Type 1, Class A) and 51 expansion (Type 1, Class B), whereas amber glass is generally only available as 51 expansion. The lower expansion coefficient of 33 implies that this harder clear glass has been processed at higher temperatures. This is approx. 1,200 °C for 33 expansion glass in comparison to approx. 1,000 °C for 51 expansion glass. In the USA typically clear glass in 33 expansion and amber glass in 51 expansion is used, whereas in Europe only 51 expansion glass is processed. From a quality point of view, both types of glass are equally suitable for use in chromatography, as they both are glasses of 1st hydrolytic class.

All vials that carry a CleanPack™ label on the front side of the PP box have been packed in a clean environment after having passed the annealing oven at approx. 600 °C.

Specification certified

This is obtained by the following measures:

- During the manufacturing process opto-electronic devices at the machines check within fractions of a second, if the processed vials meet the physical specifications (dimensions, etc.). In case of mismatch the vial is automatically rejected.
- 100% automatic control, manual in-process controls as well as a final inspection according to DIN/ISO standards further ensure functionality and perfect fit in the instrument.
- Regular functional tests further ensure that the vial not only fits in the instrument, but also all components that might be connected to it, such as inserts, closures, etc. A correct and reproducable analysis can only be carried out, if the whole unit of the vial (insert) and closure correctly match with each other and achieve a tight seal.

Silanized glass products

Besides standard glass vials, we also supply some silanized glass products. Silanized glass products are used to reduce the adsorption of polar compounds onto the surface of the glass container (e.g. protein analysis). Some compounds like amino-acids, proteins or phenols tend to react with the glass, and the silanization process prevents this by deactivating the glass surface.

In some specific applications like atomic absorption, water and protein analysis, capillary electrophoresis, etc., even plastic vials have to be used. We offer a broad range of plastic vials and plastic micro-vials of different materials (PP, TPX).

Technical information

Vials

Design of the neck

Description	
Standard screw neck Threads run down to the shoulder of the vial	
Short thread ND9 Thread ends in the middle of the neck, so that there is still some space between the edge of the cap and shoulder of the vial for robotic arms	
Short thread ND9 Vials with sure screw-stop-function	
Crimp Neck 11 mm crimp vial	
Snap neck Can be used with snap neck caps ND11 or crimp caps ND11	

Description	
Headspace neck Bevelled neck	
DIN crimp neck Flat crimp neck	
Special neck for SPME vial Thicker crimp neck	
Precision thread ND18 for headspace and SPME	
Snap cap neck Sample storage containers, not autosampler vials	

Technical information

Vials

Design of the bottom

Description	
Flat bottom	
Rounded bottom HS-bottom	
Round bottom	

Description	
Conical bottom	
Solid glass bottom of a microliter vial with inner cone	
Conical bottom Maximum recovery	

Technical information

Closures

Closures are the assembled combination of a cap and a septum. To carry out a correct analysis, it is important that besides the vial the closure is also inert and uncontaminated. We assemble and pack our closures in a fully automated process, guaranteeing that they are not contaminated by human contact as would be the case with manual assembly. Photocells check the side-orientation of the septum, so that the PTFE lamination is always directed towards the sample to provide an inert barrier between sample and carrier material of the septa.

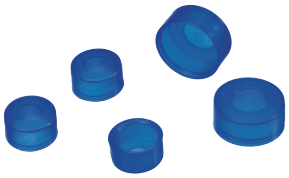
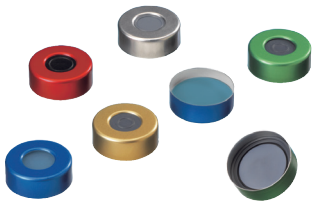
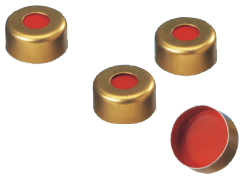
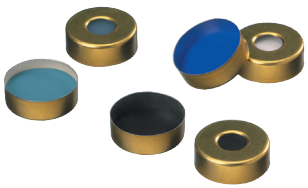
A gauge control ensures that only one septum is inserted. The final closures are automatically counted – and not weighed – to guarantee consistent quantities. They are packed in tamper-proof evident zip-lock bags that allow easy identification of the contents due to the transparent PE material. The zip-lock enables resealing of the bag to minimize contamination of the closures once opened. The batch number of the manufactured closure is printed on each PE-bag for traceability.

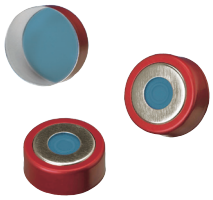
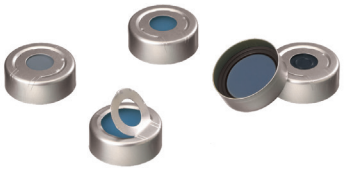
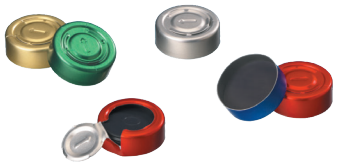
Description	
Screw caps Open top/closed top	
Short thread caps Open top/closed top	
Snap caps Hard or soft PE	

Description	
Magnetic short thread caps Only as open top	
Various UltraBond closures ND9 + ND24	
PE plugs For shell vials; inserts can be installed in the plug	

Technical information

Closures

Description	
Snap caps For sample storage containers	
PE push-on caps **ND8 + ND11**	
PE caps For crimp necks ND8, ND11 + ND20	
Aluminum caps Centre hole	
Magnetic crimp caps 5 mm centre hole	
Magnetic crimp caps 8 mm centre hole	

Description	
Magnetic screw caps 8 mm centre hole, closed top	
Magnetic bimetal crimp cap 8 mm centre hole	
Headspace caps Pressure release caps	
Complete tear-off caps	
Crimp caps with roll grove	

Technical information

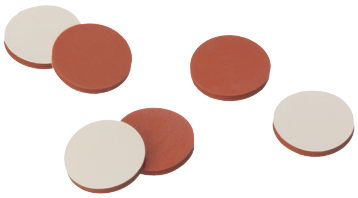
Septa

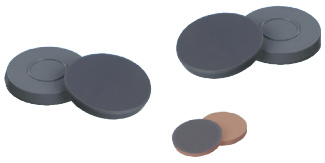
The right choice of septa depends on the application. Almost all septa are laminated on one side with PTFE, which has a high chemical resistance and forms an inert barrier between sample and carrier material of the septa. The carrier materials have different physical and chemical properties, such as temperature resistance, resealability properties, cleanliness, hardness, thickness, etc.

The chart below provides a quick guide to selecting the right septum material type for your experimental and application requirements.

Multiple injection?	Temperature?			Thin, fragile needle?	Blunt, thick needle?	Critical analysis?	Low coring?
Good resealability required	–40 °C to 120 °C	–40 °C to 110 °C	–60 °C to 200 °C	Soft and thin septa required	Pre-slit/pre-cut liner as penetration aid (HPLC)	Very clean liner required/ low-extractables	Double-sided PTFE laminated liners required
↓	↓	↓	↓	↓	↓	↓	↓
Silicone/PTFE Natural rubber/TEF	Natural rubber/ TEF Butyl/PTFE	Red Rubber/ PTFE	Silicone/PTFE	Silicone/PTFE	Silicone/PTFE, pre-slit	Silicone/PTFE	PTFE/silicone/ PTFE

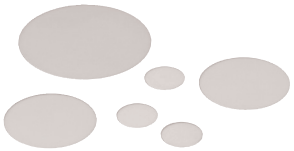
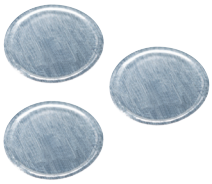
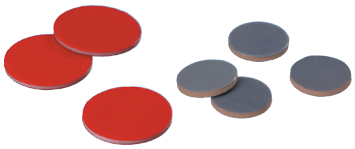
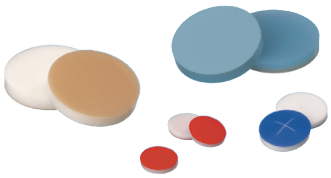
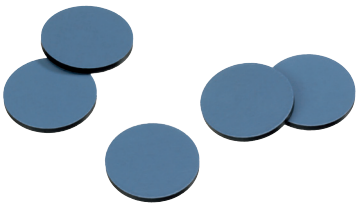
In order to visualize the most common liners on the market, please see photos below. However, please note that colors of the liners are no exact indication for the identification of a liner material.

Description	
Natural rubber/TEF	
RedRubber/PTFE	

Description	
Butyl	
Butyl/PTFE	

Technical information

Septa

Description		Description	
PharmaFix septa Butyl/PTFE		**PTFE**	
Silicone/ aluminum foil		**Aluminum**	
PTFE/silicone/PTFE **Butyl/PTFE**		**Septa for DURAN screw caps** Silicone with slit, PTFE layer untouched	
Silicone/PTFE		**PTFE/EPDM/PTFE**	
Pre-cut liners silicone/PTFE		**High temperature silicone/PTFE**	
Thinned penetration area silicone/PTFE			

Chemical resistance reference chart

This chart provides a guideline for the chemical resistance of materials used for vials and closures.

Because so many factors can affect chemical resistance, it may be necessary to test your product under your actual conditions of use.

Plastic resin code	Description	Appereance	Temp. max °C	Temp. min °C	Autoclavable	Dry heat	Gamma	Microwavable	Ethylene oxide	Analytical purity	Fragmentation*	Hardness†	Resealability‡
HDPE	High-density polyethylene	Opaque	120	-35	No	No	Yes	Yes	Yes	Method dependent	Medium	Hard	No resealability
EVA	Ethylene-vinyl acetate	Translucent	75	-75	No	No	Yes	No	Yes	Medium high	Low	Hard	No resealability
LDPE	Low-density polyethylene	Translucent	100	-40	No	No	Yes	Yes	Yes	Method dependent	Low	Medium hard	No resealability
TPX	Polymethyl-pentene	Transparent	175	0	Yes	No	Yes	Yes	Yes	Method dependent	Low	Very hard	N/A
PP	Polypropyl-ene	Translucent	135	-20	Yes	No	No	Yes	Yes	Method dependent	Low	Medium hard	No resealability
PTFE	Polytetra-fluorethylene	White	260	-200	Yes	Yes	Yes	Yes	Yes	Very high	Low	Very hard (Very thin)	No resealability
RR	RedRubber/ PTFE	Red/beige	110	-30	No	No	No	No	No	Medium	Medium	Medium hard	Medium
Butyl	Grey butyl	Opaque grey	125	-20	Yes	No	Yes	Yes	Yes	Method dependent	Low to medium	Soft to medium	Highly resealable
T/S	Silicone/ PTFE	White/red	200	-60	Yes	Yes	Yes	Yes	Yes	High	Low to medium	Soft	Highly resealable
T/S/T	PTFE/sili-cone/ PTFE	Red/white/ red	200	-60	Yes	Yes	Yes	Yes	Yes	High	Very low	Medium hard	Good
	Viton	Black	230	-30	Yes	Yes	Yes	Yes	Yes	Medium	Medium	Hard	Low to medium

* Due to hardness and molecular structure (coring)
† Needle penetration
‡ In case of multiple injections

Chemical resistance reference chart

For vials and closures

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
1,2 Dichloroethane	NN	NN	NN	EE	NN	EE
1,2,4-Trichlorobenzene	NN	NN	NN	EE	GF	EE
1,4-Dioxane	GF	GG	GF	EE	GF	EE
2,2,4-Trimethylpentane	FN	FN	FN	EE	FN	EE
2,4 Dichlorophenol	NN	NN	NN	EE	FN	EE
2-Butanol	EE	EE	EE	EE	EG	EE
2-Methoxyethanol	EG	EE	EE	EE	EE	EE
2-Propanol	EE	EE	EE	EE	EE	EE
Acetaldehyde	GN	GF	GN	EE	GN	EE
Acetamide, sat.	EE	EE	EE	EE	EE	EE
Acetic acid, 5%	EE	EE	EE	EE	EE	EE
Acetic acid, 50%	EE	EE	EE	EE	EE	EE
Acetic acid, glacial	EG	EE	EG	EE	EG	EE
Acetic anhydride	NN	FF	GF	EE	EG	EE
Acetone	NN	NN	EG	EE	EE	EE
Acetonitrile	EE	EE	FN	EE	FN	EE
Acetophenone	NN	FF	FF	EE	GN	EE
Acrylonitrile	EE	EE	FN	EE	FN	EE
Adipic acid	EG	EE	EE	EE	EE	EE
Allyl alcohol	EE	EE	EE	EE	EG	EE
Aluminum hydroxide	EG	EE	EG	EE	EG	SS
Amino acids	EE	EE	EE	EE	EE	EE
Ammonia	EE	EE	EE	EE	EE	SS
Ammonia, 25%	EE	EE	EE	EE	EE	SS
Ammonium glycolate	EG	EE	EG	EE	EG	EE
Ammonium hydroxide, 30%	EG	EE	EG	EE	EG	SS
Ammonium hydroxide, 5%	EE	EE	EE	EE	EE	SS
Ammonium oxalate	EG	EE	EG	EE	EG	EE
Ammonium salts	EE	EE	EE	EE	EE	EE
Amyl alcohol	EE	EE	EE	EE	EE	EE
Amyl chloride	NN	FN	NN	EE	NN	EE
Aniline	EG	EG	GF	EE	GF	EE
Aqua Regia	NN	NN	NN	EE	NN	SS
Arsenic acid	GF	EG	EE	EE	EE	EE
Benzaldehyde	EG	GN	EG	EE	EG	EE
Benzenamine	EG	EG	GF	EE	GF	EE
Benzene	NN	NN	NN	EE	GF	EE
Benzoic acid, sat.	EE	EE	EG	EE	EG	EE

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Benzyl acetate	EG	EE	EG	EE	EG	EE
Benzyl alcohol	NN	FN	NN	EE	NN	EE
Boric acid	EE	EE	EE	EE	EE	EE
Bromine	NN	FN	NN	EE	NN	EE
Bromobenzene	NN	NN	NN	EE	NN	EE
Bromoform	NN	NN	NN	EE	NN	EE
Butadiene	NN	FN	NN	EE	NN	EE
Butyl acetate	NN	FF	FF	EE	GF	EE
Butyl chloride	NN	NN	NN	EE	FN	EE
Butyric acid	NN	FN	NN	EE	NN	EE
Calcium hydroxide	EE	EE	EE	EE	EE	SS
Calcium hypochlorite	EE	EE	EE	EE	EG	EE
Carbazole	EE	EE	EE	EE	EE	EE
Carbon disulphide	NN	NN	NN	EE	NN	EE
Carbon tetrachloride	FN	GF	GF	EE	NN	EE
Cellosolve acetate	EG	EE	EG	EE	EG	EE
Chlorine water	GN	GF	FN	EE	GF	EE
Chlorine, 10% (moist)	GN	GF	FN	EE	GN	EE
Chlorine, 10% in air	GN	EF	GN	EE	GN	EE
Chlorine, wet gas	GN	GF	FN	EE	GN	EE
Chloro acetic acid	EE	EE	EG	EE	EG	EE
Chlorobenzene	NN	NN	NN	EE	FN	EE
Chloroform	FN	FN	NN	EE	NN	EE
Chromic acid, 10%	EE	EE	EE	EE	EE	EE
Chromic acid, 20%	EE	EE	GG	EE	EE	EE
Chromic acid, 50%	EE	EE	GF	EE	GF	EE
Chromic:Surfuric acid Mixture, 96%	NN	NN	NN	EE	NN	EE
Citric acid, 10%	EE	EE	EE	EE	EE	EE
Cresol	NN	FN	GF	EE	NN	EE
Cyclohexane	FN	FN	FN	EE	NN	EE
Cyclohexanone	NN	FN	FN	EE	GF	EE
Cyclopentane	NN	FN	FN	EE	FN	EE
Decahydronaphtalene	GF	EG	GF	EE	FN	EE
Diacetone	NN	NN	GF	EE	FF	EE
Diacetone alcohol	FN	EE	EF	EE	EE	EE
Di butylphthalate	--	-N	NN	EE	GG	EE
Diethyl benzene	NN	FN	NN	EE	NN	EE
Diethyl ether	NN	FN	NN	EE	NN	EE

Chemical resistance reference chart

For syringe filter

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Diethyl ketone	NN	NN	GG	EE	GF	EE
Diethyl malonate	EE	EE	EE	EE	EG	EE
Diethylamine	NN	FN	GN	EE	FF	EE
Diethylene dioxide	GF	GG	GF	EE	FN	EE
Diethylene glycol	EE	EE	EE	EE	EE	EE
Dimethyl acetamide	FN	EE	EE	EE	FG	EE
Dimethyl formamide	EE	EE	EE	EE	EE	EE
Dimethylsulphoxide (DMSO)	EE	EE	EE	EE	EE	EE
Dioxane	GF	GG	GF	EE	FN	EE
Dipropylene glycol	EE	EE	EE	EE	EE	EE
Ethanol, 40%	EG	EE	EG	EE	EG	EE
Ether	NN	FN	NN	EE	NN	EE
Ethyl acetate	EE	EE	EG	EE	FN	EE
Ethyl alcohol (absolute)	EG	EE	EG	EE	EG	EE
Ethyl alcohol, 40%	EG	EE	EE	EE	EG	EE
Ethyl alcohol, 96%	EG	EG	EE	EE	EG	EE
Ethyl benzene	NN	NN	NN	EE	NN	EE
Ethyl Benzoate	FF	GG	GF	EE	GF	EE
Ethyl Butyrate	GN	GF	GN	EE	FN	EE
Ethyl chloride	FN	FF	FN	EE	FN	EE
Ethyl chloride, liquid	FN	FF	FN	EE	FN	EE
Ethyl cyanoacetate	EE	EE	EE	EE	EE	EE
Ethyl lactate	EE	EE	EE	EE	EE	EE
Ethylene chloride	GN	GF	FN	EE	NN	EE
Ethylene glycol	EE	EE	EE	EE	EE	EE
Ethylene oxide gas	FF	GF	FF	EE	FN	EE
Ethylene oxide, 100%	FF	GF	FF	EE	FN	EE
Fatty acids	EG	EE	EG	EE	EG	EE
Fluorine	FN	GN	FN	EG	FN	EE
Formaldehyde, 10%	EE	EE	EE	EE	EG	EE
Formaldehyde, 40%	EG	EE	EG	EE	EG	EE
Formalin, 10%	EE	EE	EE	EE	EG	EE
Formalin, 40%	EG	EE	EG	EE	EG	EE
Formic acid	EG	EE	EG	EE	EF	EE
Formic acid, 100%	EG	EE	EG	EE	EF	EE
Formic acid, 3%	EG	EE	EG	EE	EG	EE
Formic acid, 50%	EG	EE	EG	EE	EG	EE
Formic acid, 85%	EE	EE	EG	EE	EF	EE

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Freon TF	EG	EG	EG	EE	FN	EE
Glutaraldehyde	EG	EE	EE	EE	FF	EE
Glycerine (glycerol)	EE	EE	EE	EE	EE	EE
Hexane	NN	GF	GF	EE	FN	EE
Hydrazine	NN	NN	NN	EE	NN	EE
Hydrobromic acid, 4%	EG	EE	EG	EE	EG	EE
Hydrobromic acid, 48%	EE	EE	EE	EE	EE	EE
Hydrobromic acid, 69%	--	-N	EG	EE	EE	EE
Hydrochloric acid, 20%	EE	EE	EE	EE	EG	EE
Hydrochloric acid, 35%	EE	EE	EG	EE	EG	EE
Hydrochloric acid, 5%	EE	EE	EE	EE	EG	EE
Hydrogen peroxide, 3%	EE	EE	EE	EE	EE	EE
Hydrogen peroxide, 30%	EG	EE	EG	EE	EG	EE
Hydrogen peroxide, 90%	EG	EE	EG	EE	EG	EE
Isobutanol	EE	EE	EE	EE	EG	EE
Isopropanol, 100%	EE	EE	EE	EE	EE	EE
Isopropyl acetate	GF	EG	GF	EE	GF	EE
Isopropyl benzene	FN	GF	FN	EE	NN	EE
Isopropyl ether	NN	NN	NN	EE	EE	EE
Lactic acid, 3%	EG	EE	EG	EE	EG	EE
Lactic acid, 85%	EG	EE	EG	EE	EG	EE
Lodine crystals	NN	NN	FN	EE	GN	EE
Mercury	EE	EE	EE	EE	EE	EE
Methanol, 100%	EE	EE	EE	EE	EE	EE
Methoxyethyl oleate	EG	EE	EG	EE	EG	EE
Methyl acetate	FN	FF	GF	EE	EE	EE
Methyl ethyl ketone	NN	NN	EG	EE	NN	EE
Methyl iso butyl ketone	NN	NN	GF	EE	FF	EE
Methyl propyl ketone	GF	EG	GF	EE	FF	EE
Methylene chloride	FN	FN	FN	EE	FN	EE
Methyl-t- butyl ether	NN	FN	FN	EE	EE	EE
n-Amyl acetate	GF	EG	GF	EE	GF	EE
n-Butanol	EE	EE	EE	EE	EG	EE
n- butyl acetate	GF	EG	GF	EE	GF	EE
n-Decane	FN	FN	FN	EE	FN	EE
n-Heptane	FN	GF	FF	EE	FF	EE
Nitric acid, 10%	EE	EE	EE	EE	EE	EE
Nitric acid, 20%	EG	GF	FF	EE	GF	EE

Chemical resistance reference chart

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Nitric acid, 50%	GN	GN	FN	EE	FN	EE
Nitric acid, 70%	FN	GN	NN	EE	FN	EE
Nitrobenzene	NN	FN	NN	EE	NN	EE
Nitromethane	NN	FN	FN	EE	EF	EE
n-Octane	EE	EE	EE	EE	EE	EE
o-Dichlorobenzene	FN	FF	FN	EE	FN	EE
Oil, mineral	GN	EE	EE	EE	EG	EE
Oxalic acid, 10%	EE	EE	EE	EE	EE	EE
Ozone	EG	EE	EG	EE	EE	EE
p-Chloroacetophenone	EE	EE	EE	EE	EE	EE
p-Dichlorobenzene	FN	GF	GF	EE	GF	EE
Perchloric acid	GN	GN	GN	GF	GN	EE
Perchloric acid, 70%	GN	GN	GN	GF	GN	EE
Perchloroethylene	NN	NN	NN	EE	NN	EE
Phenol, 100%	NN	NN	NN	EE	NN	EE
Phenol, 50%	NN	NN	NN	EE	NN	EE
Phenol, crystals	GN	GF	GN	EE	FG	EE
Phenol, liquid	NN	NN	NN	EE	NN	EE
Phosphoric acid, 5%	EE	EE	EE	EE	EE	EE
Phosphoric acid, 85%	EE	EE	EG	EE	EG	EE
Picric acid	NN	NN	NN	EE	EE	EE
Potassium hydroxide, 1%	EE	EE	EE	EE	EE	SS
Potassium hydroxide, 30%	EE	EE	EE	EE	EE	SS
Potassium permanganate	EE	EE	EE	EE	EE	EE
Propane gas	NN	FN	NN	EE	NN	EE
Proprionic acid	FN	EF	EG	EE	EF	EE
Propylene glycol	EE	EE	EE	EE	EE	EE
Propylene oxide	EG	EE	EG	EE	EG	EE
Pyridine	NN	NN	NN	EE	NN	EE
Resorcinol, 5%	EE	EE	EE	EE	EE	EE
Resorcinol, sat.	EE	EE	EE	EE	EE	EE
Salicylaldehyde	EG	EE	EG	EE	EG	EE
Salicylic acid, sat.	EE	EE	EE	EE	EE	EE
Salt solutions, metallic	EE	EE	EE	EE	EE	SS
Silicone oil	EG	EE	EE	EE	EE	EE
Silver nitrate	EG	EE	EG	EE	EE	EE
Sodium dichromate	EE	EE	EE	EE	EE	EE
Sodium hydroxide, 50%	GG	GF	EE	EE	EE	SS

Chemical	LDPE	HDPE	PP	PTFE	TPX	Glass
Sodium hydroxide, 1%	EE	GF	EE	EE	EE	SS
Sodium hydroxide, 10%	EE	GF	EE	EE	EE	SS
Sodium hypochlorite, 15%	EE	EE	GF	EE	EE	EE
Stearic acid	EE	EE	EE	EE	EE	EE
Sulfur dioxide	NN	FN	NN	EE	NN	EE
Sulfur dioxide, wet or dry	EE	EE	EE	EE	EE	EE
Sulfur salts	FN	GF	FN	EE	FN	EE
Sulfuric acid, 96%	GG	GG	FN	EE	GG	EE
Sulfuric acid, 20%	EE	EE	EG	EE	EG	EE
Sulfuric acid, 30%	EE	EE	GG	EE	EG	EE
Sulfuric acid, 6%	EE	EE	EE	EE	EE	EE
Sulfuric acid, 60%	EG	EE	EG	EE	EG	EE
Sulfuric acid, 98%	GG	GG	FN	EE	GG	EE
Tartaric acid	EE	EE	EE	EE	EE	EE
Tetrahydrofuran	FN	GF	GF	EE	FF	EE
Thionyl chloride	NN	NN	NN	EE	NN	EE
Tincture of Iodine	EG	EG	GG	EE	NN	EE
Toluene	FN	FN	FN	EE	FF	EE
Tri butyl citrate	GF	EG	GF	EE	GF	EE
Trichloroacetic acid (TCA)	FN	FF	FN	EE	EE	EE
Trichloroethane	NN	FN	NN	EG	NN	EE
Trichloroethylene	NN	FN	NN	EE	NN	EE
Triethylene glycol	EE	EE	EE	EE	EE	EE
Tripropylene glycol	EE	EE	EE	EE	EE	EE
Tris buffer, solution	EG	EG	EG	EE	EG	EE
Urea	EE	EE	EE	EE	EE	EE
Xylene	GN	GF	FN	EE	NN	EE

Key to chart

E - No damage after 30 days of constant exposure.
G - Little or no damage after 30 days of constant exposure.
F - Some effect after 7 days of constant exposure.
N - I mmediate damage may occur. Not reco mmended for continous use.
S- Surface.

The first letter of each pair applies to minimum temperature conditions; the second to maximum temperature conditions.

Chemical resistance reference chart

	Chemical	CA	GMF	NY	PES	PP	PTFE	PVDF	RC
Acids	Acetic, glacial	IC	C	LC	C	C	C	C	C
	Acetic, 25%	C	C	C	C	C	C	C	C
	Hydrochloric, concentrated	IC	C	IC	C	C	C	C	IC
	Hydrochloric, 25%	IC	C	IC	C	C	C	C	IC
	Sulfuric, concentrated	IC	C	IC	IC	C	C	IC	IC
	Sulfuric, 25%	IC	C	IC	C	C	C	C	LC
	Nitric, concentrated	IC	LC	IC	IC	C	C	C	IC
	Nitric, 25%	IC	LC	IC	C	C	C	C	IC
	Phosphoric, 25%	C	ND	IC	ND	C	C	ND	LC
	Formic, 25%	LC	C	IC	ND	C	C	ND	C
	Trichloroacetic, 10%	C	ND	IC	ND	C	C	ND	C
Alcohols	Methanol, 98%	C	C	C	C	C	C	C	C
	Ethanol, 98%	C	C	C	C	C	C	C	C
	Ethanol, 70%	C	C	LC	C	C	C	C	C
	Isopropanol	C	C	C	C	C	C	C	C
	n-Propanol	C	C	C	C	C	C	C	C
	Amyl alcohol (butanol)	C	C	C	C	C	C	C	C
	Benzyl alcohol	LC	IC	C	ND	C	C	C	C
	Ethylene glycol	C	C	C	C	C	C	C	C
	Propolene glycol	LC	C	C	C	C	C	C	C
	Glycerol	C	C	C	C	C	C	C	C
Amines and amides	Dimethyl formamide	IC	C	LC	IC	C	C	IC	LC
	Diethylacetamide	IC	C	C	ND	ND	C	ND	C
	Triethanolamine	C	ND	C	ND	ND	C	ND	C
	Aniline	IC	ND	ND	ND	ND	C	ND	C
	Pyridine	IC	C	C	IC	IC	C	IC	C
	Acetonitrile	IC	C	C	LC	C	C	C	C
Esters	Ethyl acetate/methyl acetate	IC	C	C	IC	LC	C	C	C
	Amyl acetate/butyl acetate	LC	C	C	IC	LC	C	IC	C
	Propyl acetate	LC	ND	C	IC	LC	C	IC	C
	Propylene glycol acetate	IC	ND	ND	IC	C	C	ND	C
	2-Ethoxyethyl acetate	LC	ND	ND	IC	ND	C	ND	C
	Methyl cellusolve	IC	C	ND	IC	C	C	ND	C
	Benzyl benzoate	C	ND	C	IC	ND	C	ND	C
	Isopropyl myristate	C	ND	C	IC	ND	C	ND	C
	Tricresyl phosphate	C	ND	ND	IC	ND	C	ND	C

Chemical resistance reference chart

	Chemical	CA	GMF	NY	PES	PP	PTFE	PVDF	RC
Halogenated hydrocarbons	Methylene chloride	IC	C	LC	IC	LC	C	C	C
	Chloroform	IC	C	C	IC	LC	C	C	C
	Trichloroethylene	C	C	C	IC	C	C	C	C
	Chlorobenzene	C	C	C	LC	C	C	C	C
	Freon	C	C	C	LC	C	C	C	C
	Carbon tetrachloride	LC	C	C	IC	LC	C	C	C
Hydro carbons	Hexane/xylene	C	C	C	IC	IC	C	C	C
	Toluene/benzene	C	C	C	IC	IC	C	C	C
	Kerosene/gasoline	C	ND	C	LC	LC	C	C	C
	Tetralin/decalin	C	ND	ND	ND	ND	C	C	C
Ketones	Acetone	IC	C	C	IC	C	C	IC	C
	Cyclohexanone	IC	C	C	IC	C	C	IC	C
	Methyl ethyl ketone	LC	C	C	IC	LC	C	LC	C
	Isopropylacetone	C	C	C	IC	ND	C	IC	C
	Methyl iso butyl ketone	ND	C	ND	IC	LC	C	LC	C
Organic oxides	Ethyl ether	C	ND	C	C	LC	C	C	C
	Dioxane	IC	C	C	IC	C	C	LC	C
	Tetrahydrofuran	IC	C	C	IC	C	C	LC	C
	Triethanolamine	C	ND	C	ND	ND	C	ND	C
	Dimethylsulfoxide (DMSO)	IC	C	C	IC	C	C	IC	C
	Isopropyl ether	C	ND	ND	C	C	C	C	C
Misc.	Phenol, aqueous solution, 10%	IC	C	ND	IC	C	C	LC	IC
	Formaldehyde aqueous solution, 30%	C	C	C	C	C	C	C	LC
	Hydrogen peroxide, 30%	C	ND	C	ND	ND	C	ND	C
	Silicone oil/mineral oil	C	C	ND	C	C	C	C	C
	A mmonium hydroxide, 25%	C	C	C	C	C	C	LC	LC
	Sodium hydroxide, 3N	IC	IC	C	C	C	C	C	LC

C - compatible
LC - limited compatible
IC - incompatible
ND - no data available

NOVALENT GENETEC KOVALENT

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