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Glastechnik Gräfenroda GmbH

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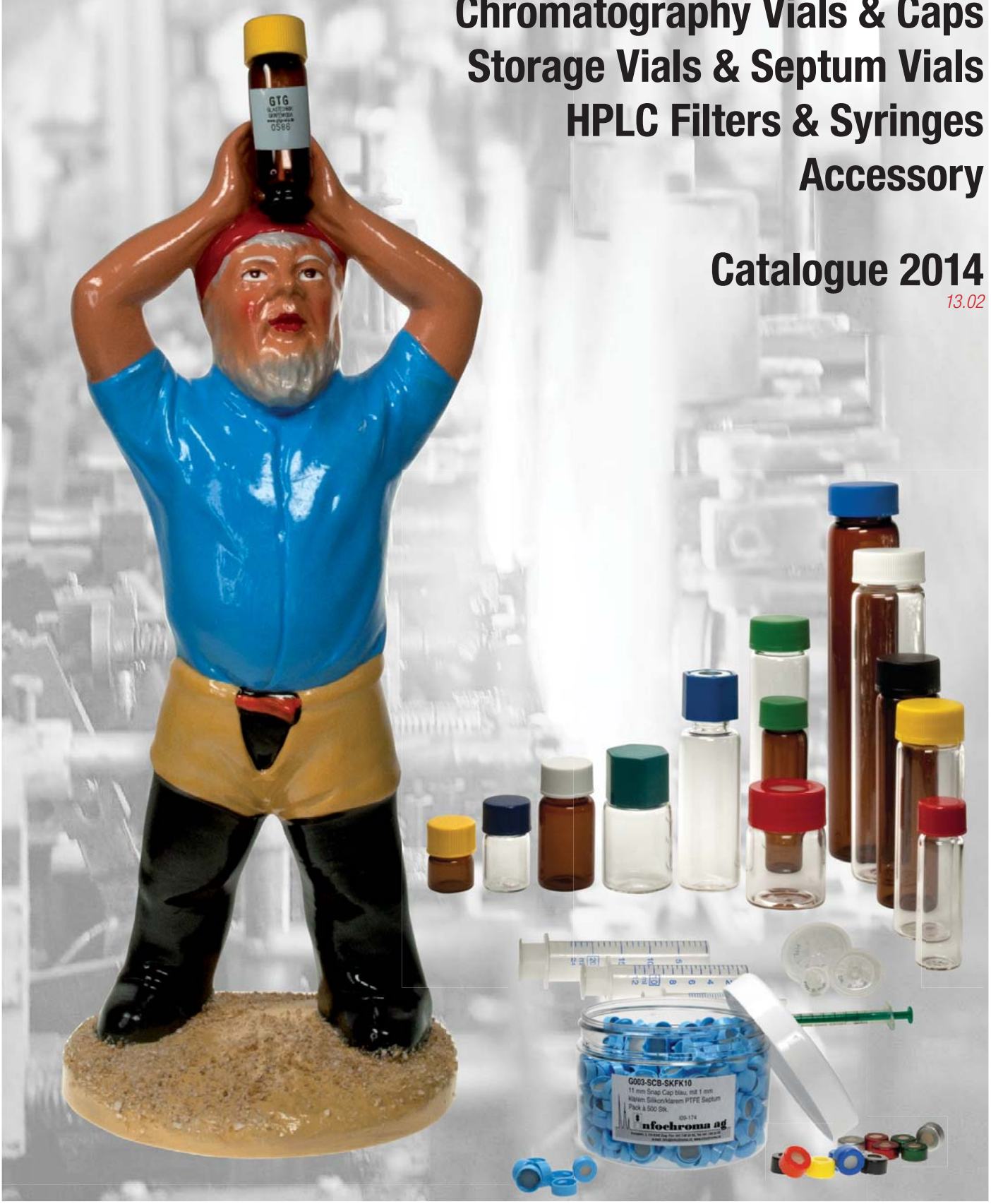
Chromatography Vials & Caps
Storage Vials & Septum Vials
HPLC Filters & Syringes
Accessory

Catalogue 2014

13.02



What have Garden Gnomes and Vials in common?

**We often hear this question, the answer is simple:
Both are from Gräfenroda.**

Gräfenroda is considered the birthplace of the Garden Gnomes, where, since 1874, the Philipp Griebel Garden Gnome Manufactory produces the familiar Garden Gnome from terra cotta. The manufactory survived two World Wars and the nationalisation in GDR times to VEB Terrakotta; today it is run in 4. generation by the great grandson of the founder. The garden gnomes are hand crafted by Reinhard Griebel and lovingly painted by hand by his team. Thus each gnome is unique and an evidence of the Thuringia craftsmanship.
Gnomes are considered to represent the miners and symbolise diligence, honesty, hard work and modesty by their shortness. The gnome lives in dualism of reality and virtuality and perceptive people call him patron of home and yard. That's why the gnome, perceived as virtual personality, is given a name.

Glastechnik Gräfenroda GmbH was founded after the „Wende" (reunification) and produces laboratory vials for Chromatography and chemical analysis. It is a small, traditional, family owned producer, attached to its home county Thuringia.
infochroma ag and Glastechnik Gräfenroda GmbH look back on a co-operation of many years and we both want more than just produce and offer products in our field: we are consistently questioning and optimising every step from the development to the final control of a product, in order to supply you with useful vials as a solution for your daily chemical analysis. Our focus is to achieve a consistently high quality and to maintain it. With deliberate lateral thinking we are looking for solutions, to develop products for new applications.

With the garden gnome, we have found a symbol for our efforts. After Rosa Maria, the Thuringia patron saint of the laboratory who watches over the correctness and accuracy of your analysis and Yetino Rodowitch who guards the purity of your samples, Fläschli Joseph (Vial Joseph) the Swiss Schwinger (Swiss wrestler) joined the two in 2012. Schwingen (Swiss wrestling) is a traditional Swiss contest that does not know weight categories. The strongest wrestlers are called «die Bösen» (the wicked). Before the match in the sawdust ring, the opponents shake hands and the winner brushes the sawdust off the loser's back after the match. A contest of strength between tradition, strength, technique, friendship, ambition and fairness.

Attributes we are confronted with daily at home and at work. Often our personal aims and wishes are in competition with the aims of the community. Like a Swiss wrestler we have to master this friction or free after Apostle Paul: «Fight the good fight ...:»

Thus our Fläschli Joseph stands for the good fight in fairness and respect.

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International
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Gnomes from the Garden Gnome manufactory Philipp Griebel, Gräfenroda, D
www.zwergen-griebel.de

in Switzerland: www.zwergshop.ch

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Chromatography vials for optimised microsampling

Most chromatography autosamplers use vials with the dimension 12 x 32 mm. An optimised solution is asked for, if only a small amount of sample is available or full recovery of the sample is required.

Most chromatography autosamplers use vials with the dimension 12 x 32 mm. These vials take 2 ml of sample. If only a small amount of sample is available or full recovery of the sample is required, an optimised solution is asked for. At the same time the vial should not require a support and the standard dimension of the vial should be kept to fit standard autosamplers.

We have 3 different microsampling vials that meet these requirements. There is one important question you have to ask yourself in order to find the right vial for your requirement. How much sample do you have and how much sample do you need for your analysis. The difference between those two, the sample volume that remains in the vial, we call residual volume. And this residual volume tells you which vial you need.

Many competitors talk about the so called dead volume, the amount of sample that cannot be retrieved from the vial but this volume cannot be easily defined. How far the needle descends into the vial, the geometry of the needle, how much sample is required to cover the needle hole so that no air is retrieved with the sample, all these aspects define the actual dead volume of an application. We find that giving the dead volume without exact specifications of these parameters does not make any sense.

The residual volume of our vials is defined by the following parameters: the remaining fluid level is at 4 mm from the bottom of the vial given that normally the needle descends to about 1 - 2 mm above the bottom of the vial and the needle should be covered with at least 2 mm of sample in order to guarantee a reliable sample taking. The actual dead volume of our vials is generally much lower than the assumed fluid level at the bottom of the vial but if you are using a needle with side hole 4 mm may be too little.

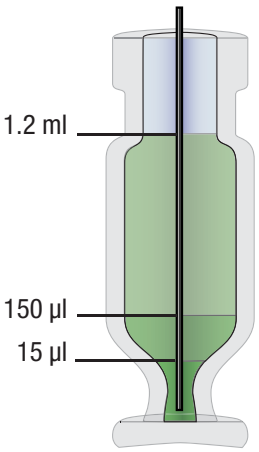
A standard 12 x 32 mm Vial for example has a residual volume of 400 µl.

When to use which one of our 3 micro vials?

the 1.5 ml Vµ-Vial our „Vase Vial“

Our Vase Vial - the Vµ-Vial - has the largest volume. It takes 1.4 ml if filled to the shoulder and it's residual volume is 15 µl.

As the Vase Vial is the most economic solution, we recommend it for all applications with a residual volume of ≥ 15 µl. The Vase Vial is also the most universal of our three microsampling vials as it is available with all common closure types including the 8-425 screw thread which we call «NM» or «Narrow Mouth» as it has a small opening. The Vase Vial is our own invention and the form as well as the production process is protected by an European patent.



- **small Residual Volume**
- **no support required**
- **can be used with large and small volumes of sample**
- **available in clear (H) or amber (D) borosilicate glass**

Vµ-Vial: EP 0860365

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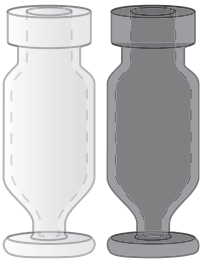
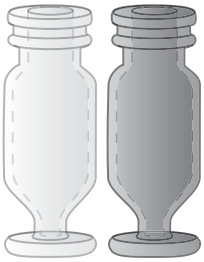
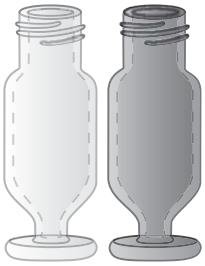
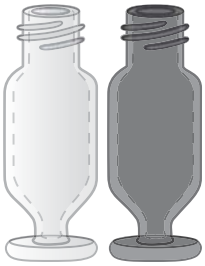
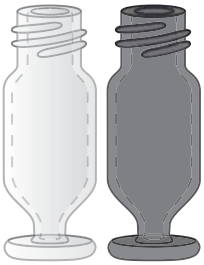
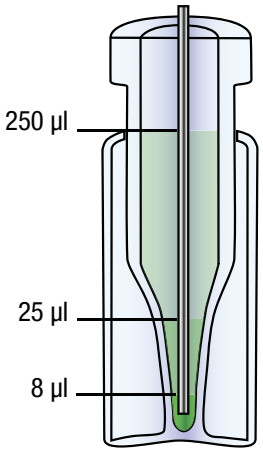
Chromatography vials for optimised micro-sampling

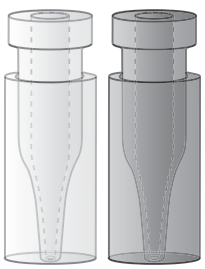
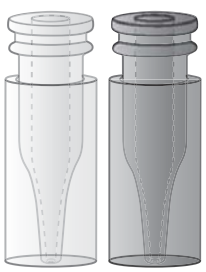
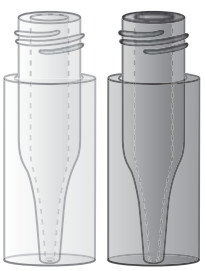
Crimp Vμ-Vial	Snap/Crimp Vμ-Vial	Agilent compatible Screw Vμ-Vial	Narrow Mouth Screw Vμ-Vial	Wide Mouth Screw Vμ-Vial
				
8002-CV-H/V15μ 8002-CV-D/V15μ	8002-SC-H/V15μ 8002-SC-D/V15μ	8004-HP-H/V15μ 8004-HP-D/V15μ	8004-NM-H/V15μ 8004-NM-D/V15μ	8004-WM-H/V15μ 8004-WM-D/V15μ

the 250 µl Insert Vial iV2µ - also ideal for volatile samples and micro-reactions

Our most recent development is the iV2µ-Vial where the vial head is on the insert. Thus the insert itself is closed with the cap so that no sample can volatilise into the outer shell of the vial. The body of the vial is a simple shell which is fused with the insert at the bottom. We produce these vials on a one-station machine of our own design which allows us to draw the insert longer and more narrow than with common techniques. The total volume is 250 µl and the residual volume is 8 µl. The iV2µ-Vial is especially suited for volatile micro samples and gas chromatography applications and completes our programme at the bottom end volume vise.

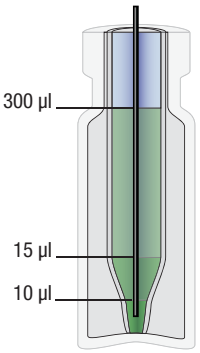


- **insert itself closed with cap**
  the sample can't escape into the space between insert and outer shell; ideal for micro reactions, for volatile samples and lyophilisation
- **long narrow pointed insert**
  also suitable for side-hole needles
  very small dead volume (< 5µl)
- **established design**
  outer shell matches 12 x 32 mm standard, no support needed
  very robust design

Crimp iV2µ-Vial	Snap/Crimp iV2µ-Vial	Agilent kompatibles Screw iV2µ-Vial
		
8002-CV-H/iV2µ 8002-CV-D/iV2µ	8002-SC-H/iV2µ 8002-SC-D/iV2µ	8004-HP-H/iV2µ 8004-HP-D/iV2µ

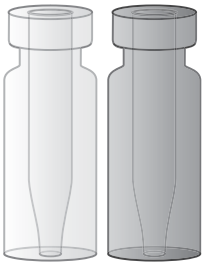
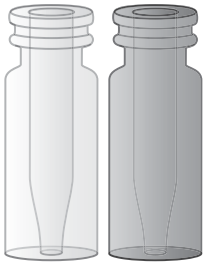
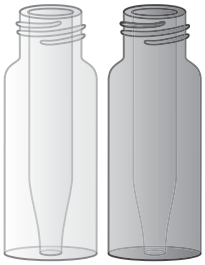
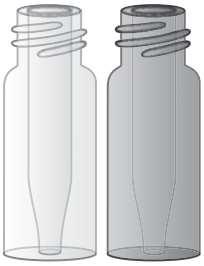
the µ-Vial with fused 350 µl insert

Our first microvial, historically, is the i3µ type with a fused insert which forms a common base with the outer vial. In its functionality it is like using vial and insert only that the insert of the µ-Vial is firmly fused with the supporting vial which has the advantage that the insert fits snug into the vial opening and stands upright without extra support. The total volume is 350 µl with a residual volume of 10 µl.



- **350 µl insert fused into a standard 12 x 32 mm vial**
- **centred and upright insert**
- **robust design**
- **available in clear (H) or amber (D) borosilicate glass**

µ-Vial: Patent No. 196 12 265

Crimp µ-Vial	Snap/Crimp µ-Vial	Agilent compatible Screw µ-Vial	Wide Mouth Screw µ-Vial
			
8002-CV-H/i3µ **8002-CV-D/i3µ**	**8002-SC-H/i3µ** **8002-SC-D/i3µ**	**8004-HP-H/i3µ** **8004-HP-D/i3µ**	**8004-WM-H/i3µ** **8004-WM-D/i3µ**

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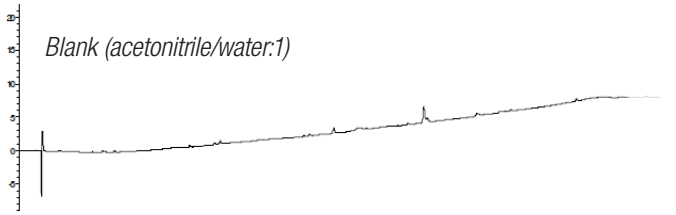
PP-Pure Vial - Polypropylene vial for sample volumes from 100 - 700 µl

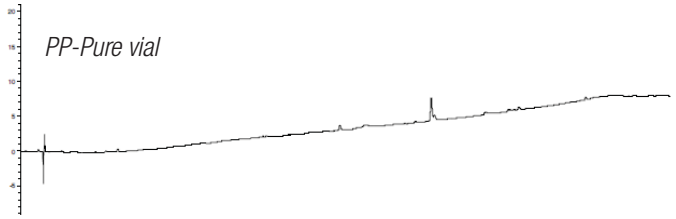
Polypropylene vial which may be used for volumes from 100 - 700 µl.

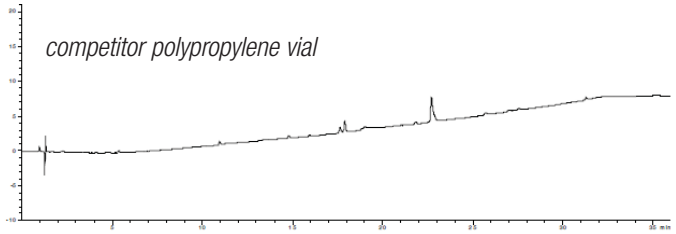
available as
Snap Crimp Vial (see pages 9 & 11)
Agilent Technologies compatible Screw Vial (see page 15).

Test Conditions:
A PP-Pure Vial and a competitor's polypropylene vial were filled with a mixture of 1 : 1 acetonitrile/water. In addition, the pp-Pure Vial was immersed into a container containing the same solvent. After an incubation period of approx. 24h at room temperature, the solvents in the three containers were analysed for UV-active impurities from the containers' material by means of RP-HPLC

HPLC-Method:
The extracts were separated by RP-HPLC and an acetonitrile gradient. Detection was carried out in a low UV-range. This screening method allows the recording of a wide spectrum of potential extractable substances. As comparison served a mixture of lead compounds of often used plastic additives with a concentration of approx. 2.5 mg/L. The sensitivity of the method lies at approx. 0.5 mg/L (0.5 ppm).







lead compounds	class of substances
Diethylphthalate	Phthalate (plasticiser)
Butylhydroxitoluole	Phenolic Antioxidants
Tinuvin 328	nitrogenous UV-stabiliser

Time	Mobile Phase A	Mobile Phase B
0 Min	95 %	5 %
30 Min	5 %	95 %
35 Min	5 %	95 %
36 Min	50 %	50 %

HPLC-Conditions:

Column:	Nucleosil 120-3 C18 125*4 mm
Flow:	1.0 mL/min
Detection:	220 and 340 nm
Temperature:	40°C
Injection Volume:	100 ml
Mobile Phase A:	0.01 M Phosphorous Acid
Mobile Phase B:	Acetonitrile

PP-Pure vial - In comparison with the blank there were no additional signals detected.

competitors's polypropylene vial - In comparison to the blank there was a bigger signal in the retention area of 23 minutes.

KapOni-Pure - the septum free Septum Cap GKP4*-HP-PP

With the wide use of MS Detectors and increasing sensitivity, there is an increased problem with ghost peaks in the daily analysis. These ghost peaks have their source in material with which the sample is coming into contact up to detection. One possibility to avoid this problem is the use of our ms-Pure septum, which is considerably cleaner because it is non-pigmented and was specifically developed to guarantee the best results in Chromatography.

But even the ms-Pure Septum can't perform miracles, it is after all still a silicone/PTFE septum. When the needle penetrates the septum, smallest particles of the septum are scraped off into the sample; these particles from the septum material may interfere in GC showing as depolymerised siloxane peaks.

Our solution is the KapOni-Pure a septum free septum, which is moulded from inert and plasticiser free pp-Pure polypropylene. The sealing element is moulded as a funnel with a thin moulded septum at the bottom end of the funnel which seals the vial; even after the seal has been penetrated by the syringe needle, the funnel functions as re-condensation zone so that evaporation is smaller than with standard one-piece PP caps with moulded septum. In addition the needle is guided by the funnel which lengthens the life span of the needle.

GKP4*-HP-PP
9 mm screw cap with sealing element from inert and plasticiser free pp-Pure polypropylene

replace "" with the cap colour of your choice:*
B = blue, G = green, R = red, S = black, W = white, Y = yellow

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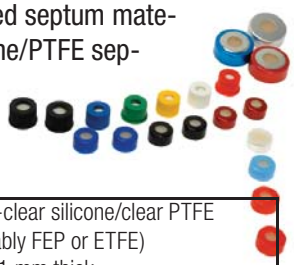
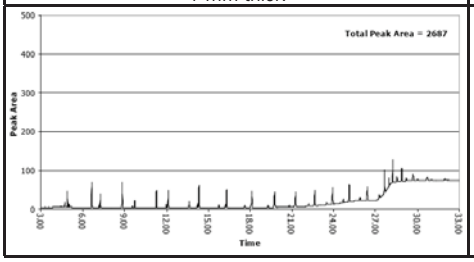
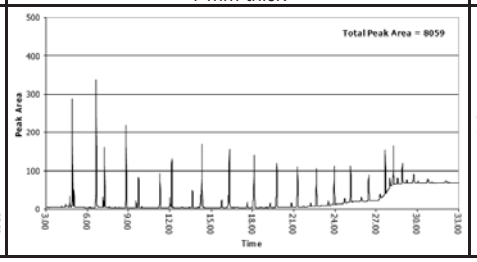
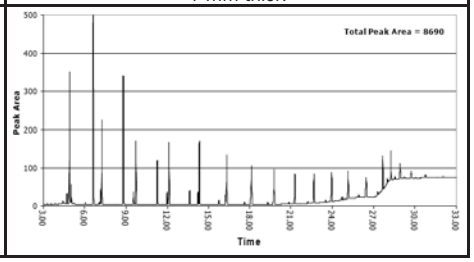
ms-Pure septum - non-pigmented silicone/PTFE septum

With the increasing sensitivity of analytical instruments there is an increasing demand for pure low bleed septum material to prevent sample contamination with extractable substances from the septum. The ms-Pure silicone/PTFE septum is produced from natural non-pigmented silicone/PTFE. Tests show that it is over 60 % cleaner than „standard“ silicone/PTFE septums on the market.



Evaluation of overall bleed characteristics using gas chromatography

ms-Pure septum non-pigmented silicone/PTFE 1 mm thick	competitor's septum white silicone/red PTFE 1 mm thick	Competitor W-clear silicone/clear PTFE (probably FEP or ETFE) 1 mm thick
		

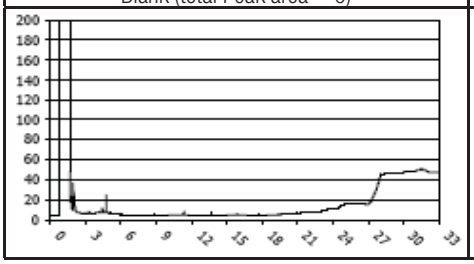
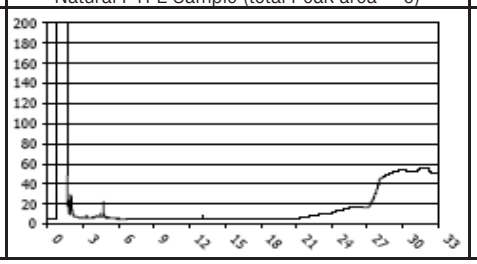
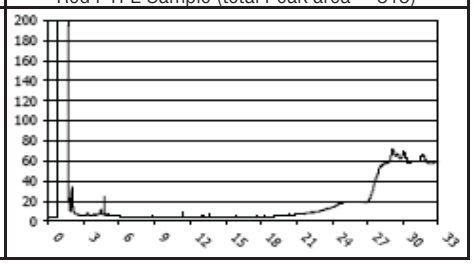
ms-Pure septum ideal for MS applications

- ☛ non-pigmented low-bleed silicone of highest quality
- ☛ resists coring
- ☛ excellent re-seal ability
- ☛ intended for multiple injections
- ☛ low compression set for storage reliability

available as
silicone/PTFE
silicone/PTFE pre-slit
PTFE/silicon/PTFE

Bleed comparison between natural and red PTFE sample using gas chromatography

Intuitively, one would surmise that pigmented materials (i.e. those that are coloured in some way) would be more likely to pose as a contaminant source when compared to materials that are not pigmented. This study compares two (2) 0.01 mm thick samples of PTFE. One is red in colour and the other is non-pigmented or natural. The total peak area illustrates that the natural (non-pigmented) PTFE shows a value of (0) zero, while the red PTFE yielded a total peak area of 315. Using lower bleed materials provides truer readings, eliminates another potential error source, decreases sample contamination, and improves productivity.

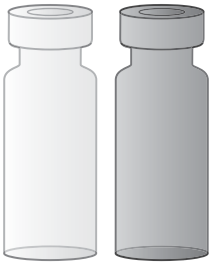
Blank (total Peak area = 0)	Natural PTFE Sample (total Peak area = 0)	Red PTFE Sample (total Peak area = 315)
		

Procedure

GC: the septum was extracted in
(50 mg/ml) dichloromethane: methanol (50:50)
for 24 hours. It was than analysed via GC under the conditions on the right.
For control purposes a blank was carried out after each injection to prevent sample carry over.

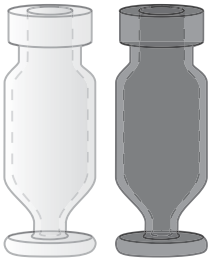
Column	Agilent DB-1 30.0 m x 320 um (19091Z-213)
Detection	FID
Gas flow	30 ml/Min
Air flow	400 ml/Min
Make-up gas	25.0 ml/Min (He)
Detector temperature	300 °C
Injection volume	1.0 uL (splitless)
Oven	50 °C kept for 3 minutes 50-100°C @ 25°C / Min 100-300°C @10°C/Min 300-325°C @25°C/Min (kept for 5 minutes)
Pressure	25 psi during 27 Min., 50 psi during 27-33 Min.

12 x 32 mm Crimp vials & caps



8002-CV-H
8002-CV-D

2 ml crimp vial
clear (H) or amber (D)
borosilicate glass
size: 12 x 32 mm

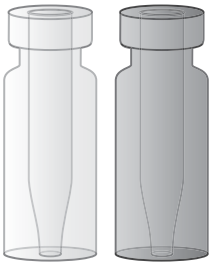


8002-CV-H/V15µ
8002-CV-D/V15µ

1.5 ml crimp Vµ-Vial, clear (H) or amber (D) borosilicate glass,
15 µl residual volume,
size: 12 x 32 mm

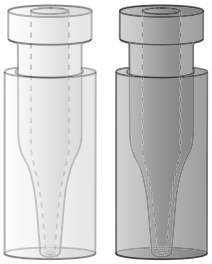
8002-CV-D/V15µ/BLACK
for light sensitive samples

1. 5 ml crimp Vµ-Vial, amber borosilicate glass with black, opaque coating
size: 12 x 32 mm



8002-CV-H/i3µ
8002-CV-D/i3µ

Crimp µ-Vial, clear (H) or amber (D) borosilicate glass,
fused 350 µl insert,
10 µl residual volume
size: 12 x 32 mm



8002-CV-H/iV2µ
8002-CV-D/iV2µ

Crimp iV2µ-Vial, clear (H) or amber (D) borosilicate glass, with pointed narrow 250 µl insert, insert directly closed with cap, 8 µl residual volume
size 12 x 32 mm

G002-CV-H/T11µ

1.1 ml crimp vial tapered,
clear borosilicate glass
size 12 x 32 mm

G002-SC-PP/i17µ

700 µl snap/crimp vial, polypropylene
may be used for 100 µl - 700 µl
size: 12 x 32 mm

CH: infochroma ag · e-mail: info@infochroma.ch · Tel. +41 41 748 50 60
DE: Glastechnik Gräfenroda GmbH · e-mail: info@gtgvials.de · Tel. +49 36205 77 229

Aluminium crimp caps

Aluminium crimp caps with rubber/PTFE septum for routine analysis should also have the necessary purity and be produced within the necessary tolerances. We noticed that the cheapest types don't necessarily meet the quality requirements of our customers.

Therefore our standard caps are tested for extractable substances in cooperation with Interlaber Belp, CH. For the convenient handling in the laboratory our caps are supplied in a clear PET screw-top box.

	septum material	thickenss	septum colour	cap colour	product no.
ms-Pure silicone	silicone/PTFE	1 mm	clear/clear	clear green red	G003-ACC-SKFK10 G003-ACG-SKFK10 G003-ACR-SKFK10
ms-Pure silicone *pre-slit*	silicone/PTFE	1 mm	clear/clear	clear green red	G003-ACC-Hi-SKFK10 G003-ACG-Hi-SKFK10 G003-ACR-Hi-SKFK10
ms-Pure silicone *multiple injections*	PTFE/silicone/PTFE	1 mm	clear/clear/clear	clear green red	G003-ACC-FKSKFK10 G003-ACG-FKSKFK10 G003-ACR-FKSKFK10
rubber *tested for extractable substances in cooperation with Interlabor Belp (CH)*	rubber/PTFE	1 mm	red/clear	clear blue green red yellow	G003-AC-Ru/Te G003-ACB-Ru/Te G003-ACG-Ru/Te G003-ACR-Ru/Te G003-ACY-Ru/Te
rubber *for GC*	rubber/PTFE	1 mm	red/clear	clear green red	G003-ACC-RRFK10 G003-ACG-RRFK10 G003-ACR-RRFK10
pigmented silicone	silicone/PTFE	1 mm	white/red	clear green red	G003-ACC-SWFR10 G003-ACG-SWFR10 G003-ACR-SWFR10
pigmented silicone *multiple injections*	PTFE/silicone/PTFE	1 mm	red/white/red	clear green red	G003-ACC-FRSWFR10 G003-ACG-FRSWFR10 G003-ACR-FRSWFR10

Crimping and de-capping tools

plain cap manual hand crimper, height adjustable

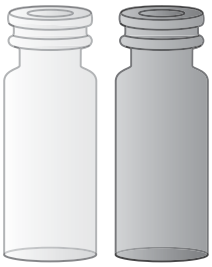
for 11 mm crimp caps G002-CZ
for 20 mm crimp caps G006-CZ

manual hand de-capper

for 11 mm crimp caps G002-DCZ
for 20 mm crimp caps G006-DCZ

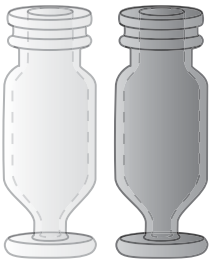
further crimping and de-capping tools see page 25

Snap/crimp vials & caps



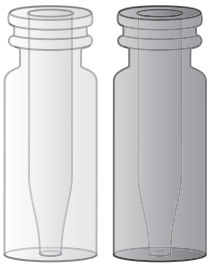
G002-SC-H
G002-SC-D

2 ml snap/crimp Vial
clear (H) or amber (D)
borosilicate glass
size: 12 x 32 mm



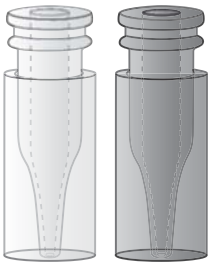
8002-SC-H/V15µ
8002-SC-D/V15µ

Vµ-Vial, 1. 5 ml snap/crimp Vial,
clear (H) or amber (D)
borosilicate glass, 15 µl residual volume,
size: 12 x 32 mm



8002-SC-H/i3µ
8002-SC-D/i3µ

Snap/crimp µ-Vial, clear (H)
or amber (D) borosilicate glass,
with fused 350 µl insert,
10 µl residual volume,
size: 12 x 32 mm



8002-SC-H/iV2µ
8002-SC-D/iV2µ

Snap/crimp iV2µ-Vial, clear (H) or amber (D) borosilicate glass, with pointed narrow 250 µl insert, insert directly closed with cap, 8 µl residual volume
size 12 x 32 mm

G002-SC-PP/i17µ

700 µl snap/crimp Vial, polypropylene
may be used for 100 µl - 700 µl
size: 12 x 32 mm

CH: infochroma ag · e-mail: info@infochroma.ch · Tel. +41 41 748 50 60
DE: Glastechnik Gräfenroda GmbH · e-mail: info@gtgvials.de · Tel. +49 36205 77 229

Snap caps

ms-Pure non-pigmented silicone/PTFE septum
The ms-Pure silicone/PTFE septum is produced from natural non-pigmented silicone/ PTFE. Tests show that it is 60 % purer than „standard“ silicone/PTFE septa from other producers. With an increasing sensitivity of analytical instruments, there is an increasing demand for extra pure septum material to prevent a contamination of the sample with extractable substances from the septum.
For the convenient handling in the laboratory, autosampler vial caps from the infochroma production are supplied in a clear screw-top pet box.

	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone	silicone/PTFE	1 mm	clear/clear	clear blue red	G003-SCC-SKFK10 G003-SCB-SKFK10 G003-SCR-SKFK10
ms-Pure silicone *pre-slit*	silicone/PTFE	1 mm	clear/clear	clear blue red	G003-SCC-Hi-SKFK10 G003-SCB-Hi-SKFK10 G003-SCR-Hi-SKFK10
ms-Pure silicone *multiple injections*	PTFE/silicone/PTFE	1 mm	clear/clear/clear	clear blue red	G003-SCC-FKSKFK10 G003-SCB-FKSKFK10 G003-SCR-FKSKFK10
rubber *for GC*	rubber/PTFE	1 mm	red/clear	clear blue red	G003-SCC-RRFK10 G003-SCB-RRFK10 G003-SCR-RRFK10
pigmented silicone	silicone/PTFE	1 mm	white/red	clear blue red	G003-SCC-SWFR10 G003-SCB-SWFR10 G003-SCR-SWFR10
pigmented silicone *multiple injections*	PTFE/silicone/PTFE	1 mm	red/white/red	clear blue red	G003-SCC-FRSWFR10 G003-SCB-FRSWFR10 G003-SCR-FRSWFR10

Metallic marker for the labelling of glass vials

A test showed, that the Edding 780 Paint Marker is best suited for labelling vials.

blue	red	silver	white
80PM-E780B	80PM-E780R	80PM-E780A	80PM-E780W

the next winter will be coming...

Hoody «overreaction»

80% cotton (325 g/m²) and 20% Polyester

www.chemoline.ch

Storage Vials G095 & G195

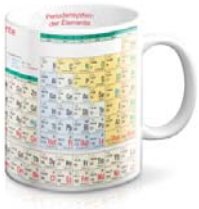
Type «HP» with PTFE lined closed-top glass-fibre enforced polyamide screw cap

caps available in our standard six colours

Coffee mug «PSE»

460 ml coffee mug
porcelain
microwave and dishwasher safe

www.chemoline.ch



iV2µ-Vial: micro vial for smallest, volatile samples

borosilicate glass,
insert itself closed with cap,
long narrow pointed insert

Yeti HPLC syringe filter

with diameters 13, 25 & 33 mm

pore sizes from 0.1 µm - 10 µm

10 & 20 ml Storage Vials

for the long-term storage of volatile samples

Hex head EXP fittings for «Extreme Pressure» Chromatography

EXP hex head nut,
hand tight, 10-32 standard
mit titan hybrid ferrule
15-20-03834

Fläschli Joseph

the Swiss wrestler stands for the good fight in fairness and respect.

What have garden gnomes & vials in common?

HALO-5

high efficiency and fast flow rates like a UHPLC column with particles < 3µm, durability and ease of use of an HPLC column with 5 µm particles,
low back pressure
allowing the use of legacy HPLC instruments

Depyrogenated, sterile glass vials

borosilicate glass, with closed-top screw cap with septum
incl. certificate of sterility and endotoxine test (LAL Test)

Wash Vials

with coloured screw caps with snap-in diffusion insert

4 ml Kit as well
10 ml for CTC/PAL

pp-Pure Vial

Polypropylene vial for sample volumes from 100 - 700 µl

Weather house Taunus

traditional form of a hygrometer, depending on humidity one figure or the other swings out of the house

www.chemoline.ch

Crimptronic - electronic crimper

for the effortless and reproducible crimping and de-capping of crimp vials

Manual stainless steel crimper for the clean room

may be sterilised and autoclaved

CH: infochroma ag · e-mail: info@infochroma.ch · Tel. +41 41 748 50 60
DE: Glastechnik Gräfenroda GmbH · e-mail: info@gtgvials.de · Tel. +49 36205 77 229

Information for the selection of screw vials and caps

Description of the screw threads and the nomenclature that goes with it

Most autosampler screw threads are GPI (Glass Packaging Institute) threads, an US standard for screw threads of glass vials. The following screw threads are used for 2 ml autosampler vials:

Agilent Technologies compatible (HP) screw caps (Pages 16 - 17)
This 9 mm screw thread was especially developed for the use with Agilent autosamplers, which require Agilent compatible screw caps (HP) because of the robotic arm.

Agilent Technologies compatible screw vials have a vial opening of 5 to 6 mm

Narrow Mouth (NM) screw caps 8-425 (Pages 18 - 19)
The first number defines the outer diameter of the cap (8 mm). The second number defines the screw thread which in this case is a relatively short thread.

Narrow Mouth vials with an 8-425 screw thread have a vial opening of approx. 5.3 mm

For Japanese autosamplers where the cap hangs in the rack by the cap, the 8 mm cap has a flange (see below)

Wide Mouth (WM) screw caps 10-425 (Page 20)
The first number defines the outer diameter of the cap (10 mm) The second number defines the screw thread which in this case is a relatively short thread.

Wide Mouth vials with a 10-425 screw thread have a vial opening of approx. 6.1 mm

Generally we recommend the Agilent compatible screw cap with the 9 mm thread as it is the best sealing of the three threads. To our knowledge the 9 mm cap can be used on all modern samplers.

Agilent compatible (HP)
9-425

G004-HP-CR

Narrow Mouth (NM)
8-425

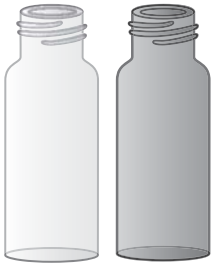
G004-NM-CB

G004-NM-CJY

Wide Mouth (WM)
10-425

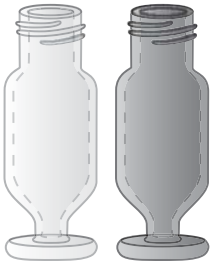
G004-WM-CS

Agilent compatible (HP) screw vials & caps



G004-HP-H
G004-HP-D

2 ml Agilent compatible screw vial, clear (H) or amber (D) borosilicate glass;
size: 12 x 32 mm

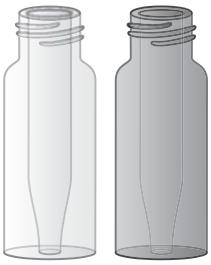


8004-HP-H/V15µ
8004-HP-D/V15µ

1.5 ml Agilent compatible screw Vµ-Vial, clear (H) or amber (D) borosilicate glass; 15 µl residual volume,
size: 12 x 32 mm

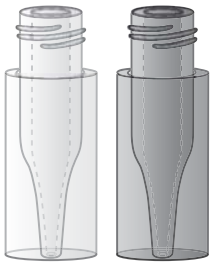
8004-HP-D/V15µ/Black
for light sensitive samples

Agilent compatible screw µ-Vial, amber borosilicate glass with black opaque coating
size: 12 x 32 mm



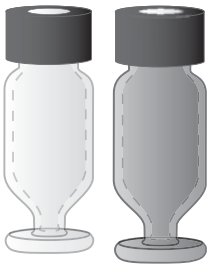
8004-HP-H/i3µ
8004-HP-D/i3µ

Agilent compatible screw µ-Vial with fused 350 µl insert, clear (H) or amber borosilicate glass (D);
10 µl residual volume,
size: 12 x 32 mm



8004-HP-H/iV2µ
8004-HP-D/iV2µ

250 µl Agilent compatible screw iV2µ-Vial, clear (H) or amber (D) borosilicate glass, with narrow pointed 250 µl insert, insert directly closed with cap,
8 µl residual volume
size 12 x 32 mm



GHP4*-SKFK10-H/V15µ
GHP4*-SKFK10-D/V15µ

Screw vial kit:
1.5 ml Agilent compatible screw Vµ-Vial, clear (H) or amber borosilicate glass (D), size 12 x 32 mm
9 mm screw cap*
9 mm non-pigmented ms-Pure silicone/PTFE septum

* *four different cap colours available; replace * with the cap colour of your choice B= blue, R = red, S = black, Y = yellow*

G004-HP-PP/i17µ

750 µl Agilent compatible screw vial, polypropylene, can be used for 100 µl - 700 µl
size: 12 x 32 mm

CH: infochroma ag · e-mail: info@infochroma.ch · Tel. +41 41 748 50 60
DE: Glastechnik Gräfenroda GmbH · e-mail: info@gtgvials.de · Tel. +49 36205 77 229

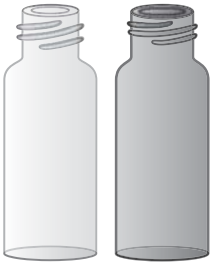
Agilent compatible 9 mm screw cap

ms-Pure non-pigmented silicone/PTFE septum

The ms-Pure silicone/PTFE septum is produced from natural non-pigmented silicone/PTFE. Tests show that it is 60 % purer than „standard“ silicone/PTFE septa from other producers. With an increasing sensitivity of analytical instruments, there is an increasing demand for extra pure septum material to prevent a contamination of the sample with extractable substances from the septum.
For the convenient handling in the laboratory, autosampler vial caps from the infochroma production are supplied in a clear screw-top pet box.

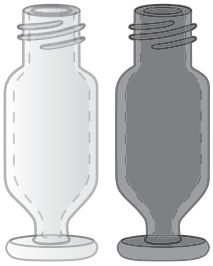
	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone	silicone/PTFE	1 mm	clear/clear	blue yellow red black	G004-HP-CB-SKFK10 G004-HP-CY-SKFK10 G004-HP-CR-SKFK10 G004-HP-CS-SKFK10
ms-Pure silicone *pre-slit*	silicone/PTFE	1 mm	clear/clear	blue yellow red black	G004-HP-CB-Hi-SKFK10 G004-HP-CY-Hi-SKFK10 G004-HP-CR-Hi-SKFK10 G004-HP-CS-Hi-SKFK10
ms-Pure silicone *multiple injections*	PTFE/silicone/PTFE	1 mm	clear/clear/clear	blue yellow red black	G004-HP-CB-FKSKFK10 G004-HP-CY-FKSKFK10 G004-HP-CR-FKSKFK10 G004-HP-CS-FKSKFK10
rubber	rubber/PTFE	1 mm	red/clear	blue yellow black	G004-HP-CB-RRFK10 G004-HP-CY-RRFK10 G004-HP-CS-RRFK10
pigmented silicone	silicone/PTFE	1 mm	white/red	blue yellow red black	G004-HP-CB-SWFR10 G004-HP-CY-SWFR10 G004-HP-CR-SWFR10 G004-HP-CS-SWFR10
pigmented silicone *multiple injections*	PTFE/silicone/PTFE	1 mm	red/white/red	blue yellow red black	G004-HP-CB-FRSWFR10 G004-HP-CY-FRSWFR10 G004-HP-CR-FRSWFR10 G004-HP-CS-FRSWFR10

Narrow Mouth (NM) screw vial & caps



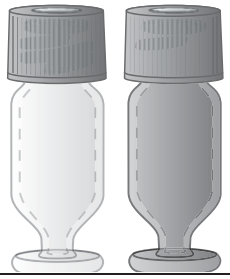
8004-NM-H
8004-NM-D

2 ml Narrow Mouth screw vial,
clear (H) or amber (D)
borosilicate glass;
size: 12 x 32 mm



8004-NM-H/V15µ
8004-NM-D/V15µ

Vµ-Vial, 1.5 ml Narrow Mouth screw vial,
clear (H) or amber (D)
borosilicate glass, 15 µl residual volume
size: 12 x 32 mm



GNM4*-SKFK10-H/V15µ
GNM4*-SKFK10-D/V15µ

1.5 ml Narrow Mouth screw Vµ-Vial,
clear (H) or amber borosilicate glass (D)
8 mm screw cap*
8 mm non-pigmented ms-Pure
silicone/PTFE septum

Screw vial kits

Our kits are supplied in white card board boxes with a grit divider for 100 vials.
Customised kits are also available.

For Japanese autosamplers which require screw caps with flange please order GNM4J*-SKFK10-H or GNM4J*-SKFK10-D (caps see next page)

* *Narrow Mouths screw caps are available in 6 colours, please replace * with the cap colour of your choice: B= blue, G = green, R = red, S = black, W = white, Y = yellow*

Narrow Mouth screw caps with silicone/PTFE septum

	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone	silicone/PTFE	1 mm	clear/clear	blue	G004-NM-CB-SKFK10
				yellow	G004-NM-CY-SKFK10
				green	G004-NM-CG-SKFK10
				red	G004-NM-CR-SKFK10
				black	G004-NM-CS-SKFK10
				white	G004-NM-CW-SKFK10
ms-Pure silicone	PTFE/silicone/PTFE	1 mm	clear/clear/clear	blue	G004-NM-CB-FKSKFK10
				yellow	G004-NM-CY-FKSKFK10
				green	G004-NM-CG-FKSKFK10
				red	G004-NM-CR-FKSKFK10
				black	G004-NM-CS-FKSKFK10
				white	G004-NM-CW-FKSKFK10
pigmented silicone	silicone/PTFE	1 mm	white/red	blue	G004-NM-CB-Si/Te
				yellow	G004-NM-CY-Si/Te
				green	G004-NM-CG-Si/Te
				red	G004-NM-CR-Si/Te
				black	G004-NM-CS-Si/Te
				white	G004-NM-CW-Si/Te

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	septum Material	thickness	septum colour	cap colour	product no.
pigmented silicone *pre-slit*	silicone/PTFE	1 mm	white/red	blue yellow green red black white	G004-NM-CB-Hi-Si/Te G004-NM-CY-Hi-Si/Te G004-NM-CG-Hi-Si/Te G004-NM-CR-Hi-Si/Te G004-NM-CS-Hi-Si/Te G004-NM-CW-Hi-Si/Te

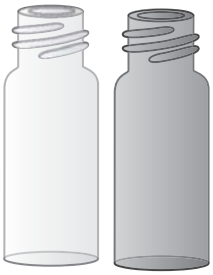
for Japanese autosamplers: Narrow Mouth screw caps with flange

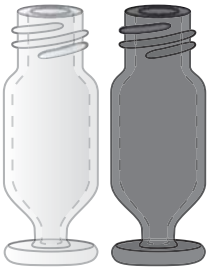
	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone	silicone/PTFE	1 mm	clear/clear	blue yellow green red black white	G004-NM-CJB-SKFK10 G004-NM-CJY-SKFK10 G004-NM-CJG-SKFK10 G004-NM-CJR-SKFK10 G004-NM-CJS-SKFK10 G004-NM-CJW-SKFK10
ms-Pure silicone	PTFE/silicone/PTFE	1 mm	clear/clear/clear	blue yellow green red black white	G004-NM-CJB-FKSKFK10 G004-NM-CJY-FKSKFK10 G004-NM-CJG-FKSKFK10 G004-NM-CJR-FKSKFK10 G004-NM-CJS-FKSKFK10 G004-NM-CJW-FKSKFK10
pigmented silicone	silicone/PTFE	1 mm	white/red	blue yellow green red black white	G004-NM-CJB-Si/Te G004-NM-CJY-Si/Te G004-NM-CJG-Si/Te G004-NM-CJR-Si/Te G004-NM-CJS-Si/Te G004-NM-CJW-Si/Te
pigmented silicone *pre-slit*	silicone/PTFE	1 MM	white/red	blue yellow green red black white	G004-NM-CJB-Hi-Si/Te G004-NM-CJY-Hi-Si/Te G004-NM-CJG-Hi-Si/Te G004-NM-CJR-Hi-Si/Te G004-NM-CJS-Hi-Si/Te G004-NM-CJW-Hi-Si/Te

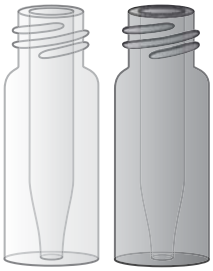
PTFE lined closed-top screw cap

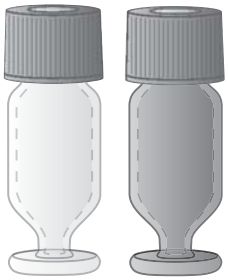
	septum material	thickness	septum colour	cap colours	product no.
PTFE lined closed-top screw cap		-	white	blue yellow green red black white	G075-CB/08 G075-CY/08 G075-CG/08 G075-CR/08 G075-CS/08 G075-CW/08

Wide Mouth (WM) screw vials & caps









G004-WM-H **G004-WM-D** 2 ml Wide Mouth screw vial, clear (H) or amber (D) borosilicate glass; size: 12 x 32 mm	**8004-WM-H/V15µ** **8004-WM-D/V15µ** 1.5 ml Wide Mouth screw Vµ-Vial, clear (H) or amber(D) borosilicate glass; 15 µl residual volume size: 12 x 32 mm	**8004-WM-H/i3µ** **8004-WM-D/i3µ** Wide Mouth screw µ-Vial with fused 350 µl insert, clear (H) or amber borosilicate glass(D); 10 µl residual volume size: 12 x 32 mm	**GWM4S-SKFK10-H/V15µ** **GWM4S-SKFK10-D/V15µ** Screw vial kit: 2 ml Wide Mouth screw vial clear (H) or amber (D) borosilicate glass 10 mm screw cap 10 mm non-pigmented ms-Pure silicone/PTFE septum

Screw vial kits

Our kits are supplied in white card board boxes with grit divider for 100 vials.
Customised kits are also available.

	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone	silicone/PTFE	1 mm	clear/clear	black	G004-WM-CS-SKFK10
ms-Pure silicone	PTFE/silicone/PTFE	1 mm	clear/clear/clear	black	G004-WM-CS-FKSKFK10
pigmented silicone	silicone/PTFE	1 mm	white/red	black	G004-WM-CS-SWFR10
pigmented silicone	PTFE/silicone/PTFE	1 mm	red/white/red	black	G004-WM-CS-FRSWFR10

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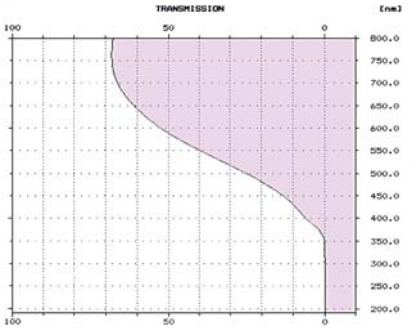
Black Vμ-Vial

Vμ-Vial with black opaque coating for light sensitive samples;
the coating prevents the light from penetrating the glass.

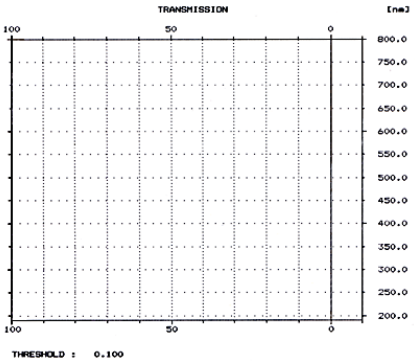
- ☛ small residual volume
- ☛ no support required
- ☛ standard size: 12 x 32 mm

8002-CV-D/V15μ/BLACK 1. 5 ml crimp Vμ-Vial with black opaque coating, residual volume 15μl size: 12 x 32 mm	**8004-HP-D/V15μ/BLACK** 1. 5 ml Agilent compatible screw Vμ-Vial with black opaque coating, residual volume 15μl size: 12 x 32 mm

amber vial transmission



black vial transmission



Silanised autosampler vials

Silanised 250 μl Agilent compatible screw iV2μ-Vial, clear (H) or amber (D) borosilicate glass, with pointed narrow 250 μl insert, insert directly closed with cap, 8 μl residual volume size 12 x 32 mm	Silanised 1.5 ml Vμ-Vial with 15 μl residual volume, clear (H) or amber (D) borosilicate glass, size: 12 x 32 mm	Silanised 2 ml vial, clear (H) or amber (D) borosilicate glass, size: 12 x 32 mm

crimp-top 8002-CV-H/iV2μ/SZ 8002-CV-D/iV2μ/SZ	**crimp-top** 8002-CV-H/V15μ/SZ 8002-CV-D/V15μ/SZ	**crimp-top** 8002-CV-H/SZ 8002-CV-D/SZ
snap/crimp-top 8002-SC-H/iV2μ/SZ 8002-SC-D/iV2μ/SZ	**snap/crimp-top** 8002-SC-H/V15μ/SZ 8002-SC-D/V15μ/SZ	**snap/crimp-top** G002-SC-H/SZ G002-SC-D/SZ
Agilent compatible screw-top 8004-HP-H/iV2μ/SZ 8004-HP-D/iV2μ/SZ	**Agilent compatible screw-top** 8004-HP-H/V15μ/SZ 8004-HP-D/V15μ/SZ	**Agilent compatible screw-top** G004-HP-H/SZ G004-HP-D/SZ

4 ml Waters vials & caps

G004-W-H **G004-W-D**	**G0W4*-Si/Te-H** **G0W4*-Si/Te-D**	**G0W4*-Hi-Si/Te-H** **G0W4*-Hi-Si/Te-D**	**G052-14/045-H**
4 ml screw vial, clear (H) or amber (D) borosilicate glass; size: 15 x 45 mm	4 ml screw vial kit: 4 ml screw vial, clear (H) or amber (D) borosilicate glass 13 mm screw cap*with white silicone/ red PTFE septum	4 ml screw vial kit: 4 ml screw vial, clear (H) or amber (D) borosilicate glass 13 mm screw cap*with pre-slit white silicone/ red PTFE septum	3.5 ml round bottom screw vial, clear (H) borosilicate glass size: 15 x 45 mm

** replace „*“ with the cap colour of your choice B = blue, G = green, R = red, S = black, W = white, Y = yellow*

Waters screw cap with septum

	septum material	**thickness**	**septum colour**	**cap colour**	**product no.**
ms-Pure silicone	silicone/PTFE	1.5 mm	clear/clear	yellow	G004-W-CY-SKFK10
				blue	G004-W-CB-SKFK10
				green	G004-W-CG-SKFK10
				red	G004-W-CR-SKFK10
				black	G004-W-CS-SKFK10
				white	G004-W-CW-SKFK10
clear silicone	silicone/PTFE	1.6 mm	clear/white	yellow	G074Y-SKFW16/13
				blue	G074B-SKFW16/13
				green	G074G-SKFW16/13
				red	G074R-SKFW16/13
				black	G074S-SKFW16/13
				white	G074W-SKFW16/13
pigmented silicone	silicone/PTFE	1 mm	white/red	yellow	G004-W-CY-Si/Te
				blue	G004-W-CB-Si/Te
				green	G004-W-CG-Si/Te
				red	G004-W-CR-Si/Te
				black	G004-W-CS-Si/Te
				white	G004-W-CW-Si/Te
pigmented silicone *pre-slit*	silicone/PTFE	1 mm	white/red	yellow	G004-W-CY-Hi-Si/Te
				blue	G004-W-CB-Hi-Si/Te
				green	G004-W-CG-Hi-Si/Te
				red	G004-W-CR-Hi-Si/Te
				black	G004-W-CS-Hi-Si/Te
				white	G004-W-CW-Hi-Si/Te

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Wash vials with clip-in diffusion insert

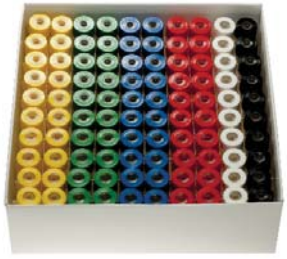
Autosamplers extracting the sample from the vial with a syringe, need to have the syringe rinsed after each injection to keep sample carryover at a minimum. With increasing sensitivity of the analytical instruments, the rinsing process becomes increasingly important, especially when different or viscous samples are analysed. The vial which holds the rinsing solvent is the so called wash vial.

Wash vials are in fact normal 4 ml screw vials which are filled with a rinsing solvent. Instead of a septum, the wash vial's screw cap has a funnel, the diffusion insert. The diffusion insert serves three purposes: it closes the vial, it reduces evaporation of the solvent and guides the needle. Common diffusion inserts are loose in the cap and when the vial is opened for filling, the diffusion insert ever so often jumps from the cap, disappearing into a dark corner of the laboratory where it is hard to be found. Our wash vials have a diffusion insert that clips into the screw cap staying in place when the vial is opened to be filled.

A standard vial is 32 mm in height while the wash vial is 45 mm, therefore a good part of the solvent in the wash vial cannot be used; for naturally the syringe descends to the same depth in both the standard vial and the wash vial. Therefore the minimum filling level is marked on the wash vial. On the side of the waste solvent this is in reverse. The syringe should not dip into the waste solvent and the maximum filling level is marked.

2 mL of one wash vial filling can be used, which means if the syringe is rinsed 3 times using 10 µl for each rinse, there is enough rinsing solvent for 65 injections. Even though the wash vial contains clean solvent only, the repeated insertion of the syringe will contaminate the vial and the diffusion insert. Therefore we recommend to exchange the wash vial regularly, latest after 100 injections.
The same applies for the waste vial, which however can be used longer. Our wash vials are supplied in practical sets of 100 pcs, the screw caps of the solvent vials are yellow, red, green and blue, those for the waste vial are black and white.

4 ml Wash vial kit



Our wash vials are supplied in a practical kit of 100 pcs, the solvent vials have screw caps in yellow, red, green and blue; the waste vials have screw caps in black and white.

GWMB4X-GTG-H

4 ml Wash vial kit

4 x 20 Solvent vials with screw caps in the colours blue, yellow, green and red

2 x 10 Waste vials with screw caps in the colours black and white screw caps are complete with clip-in diffusion insert

10 ml Wash vial kit for CTC/PAL

GWMB10X-GTG-H

10 ml Wash vial kit

4 x 20 Solvent vials with screw caps in the colours blue, yellow, green and red

2 x 10 Waste vials with screw caps in the colours black and white screw caps are complete with clip-in diffusion insert

Crimptronic - Electronic crimper

for the effortless and reproducible crimping of crimp vials

The Crimptronic is an electronic crimper, in which the vial is placed with cap in place. The crimp head descends onto the vial and an electronic cylinder crimps the cap with a predefined pressure. As the Crimptronic crimps with a predefined pressure rather than against a mechanical stop, which is the case with manual crimping tools, the Crimptronic even compensates the tolerance of the glass and the septum thickness. This guarantees that one closure is identical to the next.

The Crimptronic is not faster than a manual crimper but produces much more reproducible and uniform results particularly when working with difficult closures like lyophilisation stoppers or magnetic metal caps.

Crimp heads are available for all standard cap sizes and are exchangeable by hand.

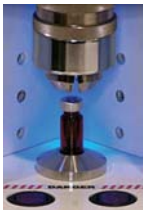
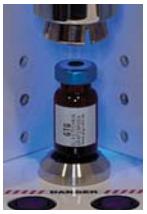
De-crimp heads for the opening of vials are also available.

For clean room applications, the Crimptronic is also available in stainless steel and the crimping can be certified.

NEW:
now also available
with rotary disc

We recommend the use of the Crimptronic if:

- ☛ for reproducible crimping
- ☛ when the quality of the crimping is critical
- ☛ for closures that are difficult to crimp such as lyophilisation stoppers or magnetic steel caps
- ☛ if tenosynovitis has been an issue

	**GWCR-4C11** Crimptronic complete with 11 mm crimp head & positioning module for vials with 12 mm diameter		**GWCR-4C20** Crimptronic complete with 20 mm crimp head & positioning module for vials with 23 mm diameter
Accessory, may be ordered separately:			
	GACR-4C11 Crimptronic Crimp head 11 mm		**GACR-4C20** Crimptronic Crimp head 20 mm
no image	**GACR-4D11** Crimptronic De-capper 11 mm		**GACR-4D20** Crimptronic De-Capper 20 mm
	GACR-4P11 Crimptronic Positioning module for vial ø 12 mm		**GACR-4P20** Crimptronic Positioning module for vial ø 23 mm

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Manual crimping & de-capping tools

	8 mm Crimper **G002(8)-CZ**	11 mm Crimper **G002-CZ**	13 mm Crimper **G002(13)-CZ**	20 mm Crimper **G006-CZ**
	8 mm Crimper **8002(8)-CZ**	11 mm Crimper **8002-CZ**	13 mm Crimper **8002(13)-CZ**	20 mm Crimper **8006-CZ**
	8 mm De-capper G002(8)-DCZ	11 mm De-capper **G002-DCZ**	20 mm De-capper **G002(13)-DCZ**	20 mm De-capper **G006-DCZ**
	8 mm De-crimper **8002(8)-DCZ**	11 mm De-capper **8002-DCZ**	13 mm De-capper **8002(13)-DCZ**	20 mm De-capper **8006-DCZ**
	8 mm De-capper **8002(8)-OZ**	11 mm De-capper **8002-OZ**	13 mm De-capper **8002(13)-OZ**	20 mm De-capper **8006-OZ**

Stainless steel crimper for small series suitable for the clean room

Manual crimper, height adjustable suitable for the clean room, may be sterilised and autoclaved

	-	-	13 mm Crimper **8002(13)-CZRR**	20 mm Crimper **8006-CZRR**

Hard-polyethylene vial racks

When placing an order for vial racks, please quote the vial diameter you are using.

The following maximum number of positions is possible with a vial diameter of:

vial ø	**PEWP** **conforms to well plate**	**PE32** **248 x 114 x 30 mm**	**PE10** **165 x 60 x 30 mm**
up to 16 mm	6 x 4 Positions	max. 13 x 6 Positions	max. 8 x 3 Positions
up to 22 mm	-	max. 10 x 4 Positions	max. 6 x 2 Positions
up to 34 mm	-	max. 6 x 3 Positions	max. 4 x 1 Positions

vial ø	**rack positions**	**rack size**	**product no.**
10 mm	24 Positions	PEWP: 184 x 84 x 30 mm	8230-PEWP-24/10
12 mm	10 Positions	PE10: 165 x 60 x 30 mm	8230-PE10-10/12
12 mm	32 Positions	PE32: 248 x 114 x 30 mm	8230-PE32-32/12
15 mm	32 Positions	PE32: 248 x 114 x 30 mm	8230-PE32-32/15
19 mm	32 Positions	PE32: 248 x 114 x 30 mm	8230-PE32-32/19
23 mm	18 Positions	PE32: 248 x 114 x 30 mm	8230-PE32-18/23
27 mm	18 Positions	PE32: 248 x 114 x 30 mm	8230-PE32-18/27

Headspace screw vial with magnetic screw cap

Headspace chromatography requires the vial to be tightly sealed and the closure to withstand pressure. This requires some effort, and is tiring when closing larger series. Our screw-top headspace vial only requires a torque < 1 Nm for a pressure tight seal while common solutions require a torque > 8 Nm.

Our screw caps not only close smoothly, they also have a smaller diameter than aluminium crimp caps for Headspace. Because of the smaller diameter the septum, which is the cost defining factor, is therefore less expensive.

Design Registration No. DE 20 2007 008 595.8;
Priority Date 15. June 2007

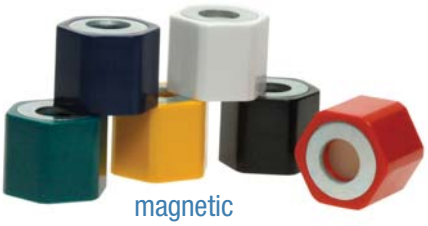
GHS6 *	-	**R	-	S * F ***	-	*

cap colour

	yellow = Y
	blue = B
	green = G
	red = R
	black = S
	white = W

vial volume

10 ml	= 10R
23 x 45 mm	
20 ml	= 20R
23 x 75 mm	



magnetic
screw caps
may be used up to 150°C

septum

	3 mm grey butyl rubber / grey PTFE septum, max. temp 125 °C **Vial kit code** = BZFZ31 **Product code septum** = GHS8-BZ30FZ01/14
	3 mm blue silicone / grey PTFE septum max. temp 150 °C **Vial kit code** = SBFZ31 **Product code septum** = GHS8-SB30FZ01/14
	3 mm clear silicone / white PTFE Septum max. temp 150 °C **Vial kit code** = SKFW32 **Product code septum** = GHS8-SK30FW02/14
	3 mm white silicone / red PTFE septum max. temp 150 °C **Vial kit code** = SWFR31 **Product code septum** = GHS8-SW15FR01/14
	1.6 mm white silicone / red PTFE septum max. temp 120 °C **Vial kit code** = SWFR16 **Product code septum** = GHS8-SW30FR01/14

borosilicate glass

clear glass = H

also available graduated
GHS6-20R-S*F***-H/G*

10 ml **23 x 45 mm**
GHS6*-10R-BZFZ31-H
GHS6*-10R-SBFZ31-H
GHS6*-10R-SKFW32-H
GHS6*-10R-SWFR31-H
GHS6*-10R-SWFR16-H

20 ml **23 x 75 mm**
GHS6*-20R-BZFZ31-H
GHS6*-20R-SBFZ31-H
GHS6*-20R-SKFW32-H
GHS6*-20R-SWFR31-H
GHS6*-20R-SWFR16-H

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Headspace crimp vials & caps

G006-10-H/FL **G006-10-D/FL** 10 ml Headspace crimp vial, flat base, clear (H) or amber (D) borosilicate glass size 23 x 45 mm	**G006-10-H/Ru** 10 ml Headspace crimp vial, rounded base, clear (H) borosilicate glass size 23 x 45 mm	**G006-20-H/FL** **G006-20-D/FL** 20 ml Headspace crimp vial, flat base clear (H) or amber (D) borosilicate glass size 23 x 75 mm	**G006-20-H/Ru** 20 ml Headspace crimp vial, rounded base, clear (H) borosilicate glass size 23 x 75 mm
Instrument compatibility:		**Instrument compatibility:**	
Agilent Technologies, CTC/Leap, Dani Fisons HS500, Shimadzu AOC5000		Agilent Technologies, CTC/Leap, Dani, Dani Purge & Trap Fisons HS850, PerkinElmer (with rounded bottom), Shimadzu AOC5000	

magnetic steel plate

Aluminium crimp collar

Magnetic cap for CTC/Leap

septum type	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone septum	silicone/PTFE	3 mm	clear/clear	blue red	G007-MACB-SKFK30 G007-MACR-SKFK30

Aluminium cap

septum type	septum material	thickness	septum colour	cap colour	product no.
ms-Pure silicone septum	silicone/PTFE	3 mm	clear/clear	clear	G007-ACC-SKFK30

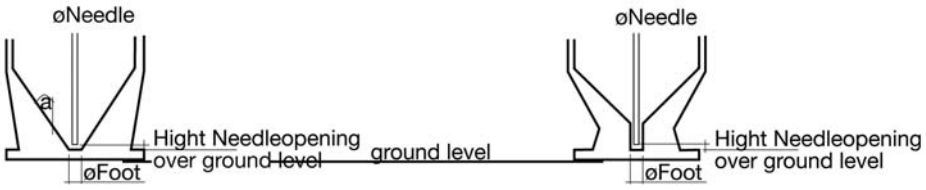
VMax-Vial - the big „Vase“ for optimised microsampling

We can produce any standard vial up to 60 ml with our patented „Vase“ foot for optimised microsampling.

The VMax-Vial has a cylindrical foot. We chose a „cylindrical foot“ over a „cone foot“ as we think a cylindrical foot is technically superior for the sample taking in an autosampler.

A sampler usually pierces the sealing septum with a needle which descends to a defined height to take the sample. The needle has two functions, to pierce the septum and to withdraw the sample. The needle should be formed so that it easily pierces the septum. If the needle has a bevel tip it must not hit the bottom of the vial or the needle tip will be bent which will negatively influence the further piercing of the septum. If the needle has a cone tip it must not hit the bottom of the vial either as the needle whole could become sealed by the vial bottom so that no sample is taken. If a needle with side hole is used the system may be adjusted so that the needle tip rests on the bottom of the vial but still the needle hole is above the bottom of the vial. Independent of the needle geometry, the highest point at which the sample enters the needle defines the death volume of a vial.

In order to get the maximum sample return, air should usually not be sucked into the needle with the sample. This requires minimal sample coverage over the needle hole. For most samplers, it can be said that the needle descends to a defined level above the intended withdrawing level (commonly 2.5 mm above withdrawing level). As the withdrawing level is at the bottom of the vial, the vial producer must assure that the vial bottom has a reproducible inner height. The dead volume can be derived with the measure that the bottom of the vial has a radius r (=ø foot/2) and the needle hole is above the bottom at height h.



The death volume of the cone version forms a cone stump with the side angle a; the cylindrical version, as produced by GTG, forms a cylinder.

The death volume of the cone version results in VKS= π*r2*h + (r*h2*tan(a) + h3/*tan2(a))
The death volume of the cylindrical version results in: Vzyl = π*r2*h

in this example applies: death volume to needle hole r = 1.5 mm, h = 1.5 mm and a = 45° -> tan(a) = 1
VKS= 17.4 µl
VZyl = 10.6 µl

This means that the dead volume of the cone version is bigger by a share of (r*h2*tan(a) + h3/*tan2(a)). With an angle a bigger 45°, tan(a) > 1 and increases considerably. The same results when the needle hole has to be covered with sample. In this case height h = height h (needle above base) + c (coverage with sample).

in this example applies:
death volume to coverage r = 1.5 mm, h = h + c = 1.5 mm + 2.0 mm = 3.5 mm and a = 45° -> tan(a) = 1
VKS= 86.0 µl
VZyl = 24.7 µl

It can be concluded that in order to minimise death volume tan(a) one has to aim towards zero which means that a cylindrical solution is an advantage. The actual death volume has to be reduced by the displacement volume of the needle but the influence is the same for both cylindrical and conical and therefore is not shown in this calculation.

We are able to form the foot with a thorn such as is required by the geometry of the needle under the adherence of certain measurements.

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VMax-Vial - the big „Vase“ for optimised microsampling

- ☛ big Vase Vials up to 60 ml
- ☛ stand alone, no support required
- ☛ can be produced in any size up to 60 ml, 35 mm min. vial height required
- ☛ with either crimp or screw-top
- ☛ ideal for automated sample preparation

Screw-top VMax-Vial

G072-14/045-H/VMµ **G072-14/045-D/VMµ** 3.5 ml screw-top VMax-Vial, clear or amber borosilicate glass, size: 14 x 45 mm, screw thread 13-425	**G072-19/065-H/VMµ** **G072-19/065-D/VMµ** 9.5 ml screw-top VMax-Vial, clear or amber borosilicate glass, size: 19 x 65 mm, screw thread 15-425

G072-27/057-H/VMµ **G072-27/057-D/VMµ** 19 ml screw-top VMax-Vial, clear or amber borosilicate glass, size: 27 x 57 mm, screw thread 24-400	**G072-27/095-H/VMµ** **G072-27/095-D/VMµ** 39 ml screw-top VMax-Vial, clear or amber borosilicate glass, size: 27 x 95 mm, screw thread 24-400	**G072-27/140-H/VMµ** **G072-27/140-D/VMµ** 59 ml screw-top VMax-Vial, clear or amber borosilicate glass, size: 27 x 140 mm, screw thread 24-400

Screw caps: refer to page 39 for open-top screw caps with silicone/PTFE septum & page 48 for closed-top, PTFE lined screw caps

20 mm crimp-top headspace VMax-Vial

G006-23/045-H/VMµ 9.5 ml crimp-top VMax-Vial, clear borosilicate glass, size: 23 x 45 mm	**G006-23/075-H/VMµ** 19 ml crimp-top VMax-Vial, clear borosilicate glass, size: 23 x 75 mm

crimp caps see page 27

Screw-top headspace VMax-Vial

GHS6-23/045-H/VMµ 9.5 ml screw-top VMax-Vial, clear borosilicate glass, size: 23 x 45 mm	**GHS6-23/075-H/VMµ** 19 ml screw-top VMax-Vial, clear borosilicate glass, size: 23 x 75 mm

for open-top screw caps with septum refer to page 26, for closed-top screw caps refer to page 50

Septum Vials from 1 - 60 ml complete with open-top screw cap with silicone/PTFE septum

Our Septum Vial programme comprises 6 vial diameters and over 30 different dimensions within the volumes of 1 - 60 ml. The vials come complete with open-top screw cap with silicone/PTFE septum; the caps are available in six different colours.

Septum Vials are supplied in high quality card board boxes with a grit divider for 100 vials. These boxes are also ideally suited for the storing or transportation of the vials.

We can also produce caps in the colour of your choice. Please inquire!

	vial ø 12 mm screw thread 9-425	**vial ø 14 mm screw thread 13-425**	**vial ø 17 mm screw thread 15-425**	**vial ø 19 mm screw thread 15-425**
Kit	**height: 24 mm height: 32 mm V-vial height: 32 mm assorted** G194X-12Kit02-SKFK10-H G194X-12Kit02-SKFK10-D	**height: 26 mm height: 30 mm height: 45 mm height: 50 mm assorted** G074X-14Kit05-SKFW16-H G074X-14Kit05-SKFW16-D	**height: 27 mm height: 35 mm height: 42 mm height: 65 mm height: 85 mm assorted** G074X-17Kit10-SKFW16-H G074X-17Kit10-SKFW16-D	**height: 37 mm height: 50 mm height: 65 mm height: 87 mm assorted** G074X-19Kit15-SKFW16-H G074X-19Kit15-SKFW16-D
1 ml	**height: 24 mm** G194*-12/024-SKFK10-H G194*-12/024-SKFK10-D	**height: 19 mm** G074*-14/019-SKFW16-H G074*-14/019-SKFW16-D		
1.5 ml	**height: 32 mm** G194*-12/032-SKFK10-H/V15µ G194*-12/032-SKFK10-D/V15µ	**height: 22 mm** G074*-14/022-SKFW16-H G074*-14/022-SKFW16-D		
2 ml	**height: 32 mm** G194*-12/032-SKFK10-H G194*-12/032-SKFK10-D	**height: 26 mm** G074*-14/026-SKFW16-H G074*-14/026-SKFW16-D		
2.5 ml		**height: 30 mm** G074*-14/030-SKFW16-H G074*-14/030-SKFW16-D	**height: 27 mm** G074*-17/027-SKFW16-H G074*-17/027-SKFW16-D	
3.75 ml			**height: 50 mm** G074*-17/035-SKFW16-H G074*-17/035-SKFW16-D	
4 ml		**height: 45 mm** G074*-14/045-SKFW16-H G074*-14/045-SKFW16-D		
5 ml		**height: 50 mm** G074*-14/050-SKFW16-H G074*-14/050-SKFW16-D	**height: 42 mm** G074*-17/042-SKFW16-H G074*-17/042-SKFW16-D	**height: 37 mm** G074*-19/037-SKFW16-H G074*-19/037-SKFW16-D

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	vial ø 17 mm screw thread 15-425	**vial ø 19 mm screw thread 15-425**	**vial ø 23 mm screw thread 20-400**	**vial ø 27 mm screw thread 24-400**
Kit	**height: 27 mm height: 35 mm height: 42 mm height: 65 mm height: 85 mm, assorted** G074X-17Kit10-SKFW16-H G074X-17Kit10-SKFW16-D	**height: 37 mm height: 50 mm height: 65 mm height: 87 mm assorted** G074X-19Kit15-SKFW16-H G074X-19Kit15-SKFW16-D	**height: 37 mm height: 45 mm height: 60 mm height: 75 mm height: 85 mm, assorted** G074X-23Kit25-SKFW16-H G074X-23Kit25-SKFW16-D	**height: 37 mm height: 47 mm height: 57 mm height: 68 mm assorted** G074X-27Kit25-SKFW34-H G074X-27Kit25-SKFW34-D **height: 78 mm, height: 95 mm height: 118 mm, height: 140 mm, assortiert** G074X-27Kit60-SKFW34-H G074X-27Kit60-SKFW34-D
7.5 ml	**height: 60 mm** G074*-17/060-SKFW16-H G074*-17/060-SKFW16-D	**height: 50 mm** G074*-19/050-SKFW16-H G074*-19/050-SKFW16-D	**height: 37 mm** G074*-23/037-SKFW16-H G074*-23/037-SKFW16-D	
10 ml	**height: 72 mm** G074*-17/072-SKFW16-H G074*-17/072-SKFW16-D	**height: 65 mm** G074*-19/065-SKFW16-H G074*-19/065-SKFW16-D	**height: 45 mm** G074*-23/045-SKFW16-H G074*-23/045-SKFW16-D	**height: 37 mm** G074*-27/037-SKFW34-H G074*-27/037-SKFW34-D
15 ml		**height: 87 mm** G074*-19/087-SKFW16-H G074*-19/087-SKFW16-D	**height: 60 mm** G074*-23/060-SKFW16-H G074*-23/060-SKFW16-D	**height: 47 mm** G074*-27/047-SKFW34-H G074*-27/047-SKFW34-D
20 ml			**height: 75 mm** G074*-23/075-SKFW16-H G074*-23/075-SKFW16-D	**height: 57 mm** G074*-27/057-SKFW34-H G074*-27/057-SKFW34-D
25 ml			**height: 85 mm** G074*-23/085-SKFW16-H G074*-23/085-SKFW16-D	**height: 68 mm** G074*-27/068-SKFW34-H G074*-27/068-SKFW34-D
30 ml				**height: 78 mm** G074*-27/078-SKFW34-H G074*-27/078-SKFW34-D
40 ml				**height: 95 mm** G074*-27/095-SKFW34-H G074*-27/095-SKFW34-D
50 ml				**height: 118 mm** G074*-27/118-SKFW34-H G074*-27/118-SKFW34-D
60 ml				**height: 140 mm** G074*-27/140-SKFW34-H G074*-27/140-SKFW34-D G054*27/140-SKFW34-H *vial with round base*

Septum Vial Kits

With our Septum Vial Kits you get all the Septum Vials from one diameter in a kit. The vials come complete with the open-top screw cap with silicone/PTFE septum and the cap colours are assorted. Thus you always have the suitable vial for you sample volume. Our Septum Vial kits are packed in high quality card board boxes with a grit divider for 100 vials.

Septum Vial Kit with Vials 12 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap assembled with 1.0 mm thick ms-Pure septum, clear silicone / clear PTFE

clear glass
G194X-12Kit02-SKFK10-H
amber glass
G194X-12Kit02-SKFK10-D

volume	1 ml	1.2 ml*	2 ml	** Vμ-Vial*
height	24 mm	32 mm	32 mm	
quantity	35 pcs.	30 pcs.	35 pcs.	

Septum Vial Kit with Vials 14 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap assembled with 1.6 mm thick septum clear silicone / white PTFE

clear glass
G074X-14Kit05-SKFW16-H
amber glass
G074X-14Kit05-SKFW16-D

volume	2 ml	2.5 ml	4 ml	5 ml
height	24 mm	32 mm	32 mm	50 mm
quantity	25 pcs.	25 pcs.	25 pcs.	25 pcs

Septumvial Kit with Vials 17 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap assembled with 1.6 mm thick septum clear silicone / white PTFE

clear glass
G074X-17Kit10-SKFW16-H
amber glass
G074X-17Kit10-SKFW16-D

volume	2.5 ml	3.75 ml	5 ml	7.5 ml	10 ml
height	27 mm	35 mm	42 mm	60 mm	72 mm
quantity	20 pcs.	20 pcs.	20 pcs.	20 pcs.	20 pcs

Septum Vial Kit with Vials 19 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap assembled with 1.6 mm thick septum clear silicone / white PTFE

clear glass
G074X-19Kit15-SKFW16-H
amber glass
G074X-19Kit15-SKFW16-D

volume	5 ml	7.5 ml	10 ml	15 ml
height	37 mm	50 mm	65 mm	87 mm
quantity	25 pcs.	25 pcs.	25 pcs.	25 pcs.

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Septum Vials

Septum Vial Kit with Vials 23 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap
assembled with 3.4 mm thick septum clear
silicone / white PTFE

clear glass
G074X-23Kit25-SKFW34-H
amber glass
G074X-23Kit25-SKFW34-D

volume	5 ml	7.5 ml	10 ml	15 ml	25 ml
height	37 mm	45 mm	60 mm	75 mm	85 mm
quantity	20 pcs.	20 pcs.	20 pcs.	20 pcs.	20 pcs

Septum Vial Kit with Vials 27 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap
assembled with 3.4 mm thick septum clear
silicone / white PTFE

clear glass
G074X-27Kit25-SKFW34-H
amber glass
G074X-27Kit25-SKFW34-D

volume	10 ml	15 ml	20 ml	25 ml
height	37 mm	47 mm	57 mm	68 mm
quantity	25 pcs.	25 pcs.	25 pcs.	25 pcs.

Septum Vial Kit with Vials 27 mm ø
clear (H) or amber (D)

complete with screw cap cap colours assorted cap
assembled with 3.4 mm thick septum clear
silicone / white PTFE

clear glass
G074X-27Kit60-SKFW34-H
amber glass
G074X-23Kit60-SKFW34-D

volume	30 ml	40 ml	50 ml	60 ml
height	79 mm	95 mm	118 mm	140 mm
quantity	25 pcs.	25 pcs.	25 pcs.	25 pcs.

Please note that the quantity per vial in the kit may vary slightly from the quantities given below due to logistics. Please inquire about the exact quantities when ordering. We thank you for your understanding.

Our Septum Vial screw caps are available in 6 colours. Replace the "*" in product code with the letter code beside the colour table on the right.

	yellow = Y		red = R
	blue = B		black = S
	green = G		white = W

1 - 2 ml Septum Vials: ø 12 mm, screw thread 9-425

Screw cap (screw tread 9-425) assembled with
1 mm thick ms-Pure septum, clear silicone / clear PTFE

1 ml 12 x 24 mm	1.2 ml Vμ -Vial 12 x 32 mm	2 ml 12 x 32 mm
clear glass G194*-12/024-SKFK10-H	clear glass G194*-12/032-SKFK10-H/V15μ	clear glass G194*-12/032-SKFK10-H
amber glass G194*-12/024-SKFK10-D	amber glass G194*-12/032-SKFK10-D/V15μ	amber glass G194*-12/032-SKFK10-D

1 ml - 5 ml Septum Vials: ø 14 mm, screw thread 13-425

Screw cap (screw thread 13-425) assembled with
1.6 mm thick septum, clear silicone / white PTFE

1.5 ml 14 x 22 mm	2 ml 14 x 26 mm	3 ml 14 x 30 mm	4 ml 14 x 45 mm	5 ml 14 x 50 mm
clear glass G074*-14/022-SKFW16-H	clear glass G074*-14/026-SKFW16-H	clear glass G074*-14/030-SKFW16-H	clear glass G074*-14/045-SKFW16-H	clear glass G074*-14/050-SKFW16-H
amber glass G074*-14/022-SKFW16-D	amber glass G074*-14/026-SKFW16-D	amber glass G074*-14/030-SKFW16-D	amber glass G074*-14/045-SKFW16-D	amber glass G074*-14/050-SKFW16-D

** 1 ml vial not shown: clear glass: G074*-14/019-SKFW16-H, amber glass: G074*-14/019-SKFW16-H*

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2.5 ml - 10 ml Septum Vials: ø 17 mm, screw thread 15-425

Screw cap (screw tread 15-425) assembled with
1.6 mm thick septum, clear silicone / white PTFE

2.5 ml 17 x 27 mm	3.75 ml 17 x 35 mm	5 ml 17 x 42 mm	7.5 ml 17 x 60 mm	10 ml 17 x 72 mm
clear glass **G074*-17/027-SKFW16-H**	clear glass **G074*-17/035-SKFW16-H**	clear glass **G074*-17/042-SKFW16-H**	clear glass **G074*-17/060-SKFW16-H**	clear glass **G074*-17/072-SKFW16-H**
amber glass **G074*-17/027-SKFW16-D**	amber glass **G074*-17/035-SKFW16-D**	amber glass **G074*-17/042-SKFW16-D**	amber glass **G074*-17/060-SKFW16-D**	amber glass **G074*-17/072-SKFW16-D**

5 ml - 15 ml Septum Vials: ø 19 mm, screw thread 15-425

Screw cap (screw tread 15-425) assembled with
1.6 mm thick septum, clear silicone / white PTFE

5 ml 19 x 37 mm	7.5 ml 19 x 50 mm	10 ml 19 x 65 mm	15 ml 19 x 87 mm
clear glass **G074*-19/037-SKFW16-H**	clear glass **G074*-19/050-SKFW16-H**	clear glass **G074*-19/065-SKFW16-H**	clear glass **G074*-19/087-SKFW16-H**
amber glass **G074*-19/037-SKFW16-D**	amber glass **G074*-19/050-SKFW16-D**	amber glass **G074*-19/065-SKFW16-D**	amber glass **G074*-19/087-SKFW16-D**

Septum Vials with open-top screw cap and silicone/PTFE septum

Our Septum Vial screw caps are available in 6 colours. Replace the "*" in product code with the letter code beside the colour table on the right.

	yellow = Y		red = R
	blue = B		black = S
	green = G		white = W

5 - 25 ml Septum Vials: ø 23 mm, screw thread 20-400

Screw cap (screw tread 20-400) assembled with 1.6 mm thick septum, clear silicone / white PTFE or

3.4 mm thick septum, clear silicone / white PTFE

5 ml 23 x 37 mm	7.5 ml 23 x 45 mm	15 ml 23 x 60 mm	20 ml 23 x 75 mm	25 ml 23 x 85 mm

with 1.6 mm thick clear silicone/white PTFE septum

clear glass **G074*-23/037-SKFW16H**	clear glass **G074*-23/045-SKFW16-H**	clear glass **G074*-23/060-SKFW16-H**	clear glass **G074*-23/075-SKFW16-H**	clear glass **G074*-23/085-SKFW16-H**
amber glass **G074*-23/037-SKFW16D**	amber glass **G074*-23/045-SKFW16-D**	amber glass **G074*-23/060-SKFW16-D**	amber glass **G074*-23/075-SKFW16-D**	amber glass **G074*-23/085-SKFW16-D**

with 3.4 mm thick clear silicone/white PTFE septum

clear glass **G074*-23/037-SKFW34-H**	clear glass **G074*-23/045-SKFW34-H**	clear glass **G074*-23/060-SKFW34-H**	clear glass **G074*-23/075-SKFW34-H**	clear glass **G074*-23/085-SKFW34-H**
amber glass **G074*-23/037-SKFW34-D**	amber glass **G074*-23/045-SKFW34-D**	amber glass **G074*-23/060-SKFW34-D**	amber glass **G074*-23/075-SKFW34-D**	amber glass **G074*-23/085-SKFW34-D**

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5 - 25 ml Septum Vials: ø 27 mm, screw thread 24-400

Screw cap (screw thread 24-400) assembled with
3.4 mm thick septum, clear silicone / white PTFE or

3.1 mm thick septum, white silicone / red PTFE or

Screw cap (screw thread 24-400) assembled with
1.6 mm thick septum, clear silicone / white PTFE or

1.6 mm thick pre-slit septum, clear silicone / white PTFE

10 ml 27 x 37 mm	15 ml 27 x 47 mm	20 ml 27 x 57 mm	25 ml 27 x 68 mm

with 3.4 mm thick septum, clear silicone / white PTFE

clear glass **G074*-27/037-SKFW34-H** amber glass **G074*-27/037-SKFW34-D**	clear glass **G074*-27/047-SKFW34-H** amber glass **G074*-27/047-SKFW34-D**	clear glass **G074*-27/057-SKFW34-H** amber glass **G074*-27/057-SKFW34-D**	clear glass **G074*-27/068-SKFW34-H** amber glass **G074*-27/068-SKFW34-D**

with 3.1 mm thick septum, white silicone / red PTFE

clear glass **G074*-27/037-SWFR31-H** amber glass **G074*-27/037-SWFR31-D**	clear glass **G074*-27/047-SWFR31-H** amber glass **G074*-27/047-SWFR31-D**	clear glass **G074*-27/057-SWFR31-H** amber glass **G074*-27/057-SWFR31-D**	clear glass **G074*-27/068-SWFR31-H** amber glass **G074*-27/068-SWFR31-D**

with 1.6 mm thick septum, clear silicone / white PTFE

clear glass **G074*-27/037-SKFW16-H** amber glass **G074*-27/037-SKFW16-D**	clear glass **G074*-27/047-SKFW16-H** amber glass **G074*-27/047-SKFW16-D**	clear glass **G074*-27/057-SKFW16-H** amber glass **G074*-27/057-SKFW16-D**	clear glass **G074*-27/068-SKFW16-H** amber glass **G074*-27/068-SKFW16-D**

with 1.6 mm thick pre-slit septum, clear silicone / white PTFE

clear glass **G074*-27/037-SKFW16/HiX-H** amber glass **G074*-27/037-SKFW16/HiX-D**	clear glass **G074*-27/047-SKFW16/HiX-H** amber glass **G074*-27/047-SKFW16/HiX-D**	clear glass **G074*-27/057-SKFW16/HiX-H** amber glass **G074*-27/057-SKFW16/HiX-D**	clear glass **G074*-27/068-SKFW16/HiX-H** amber glass **G074*-27/068-SKFW16/HiX-D**

Septum Vials with open-top screw cap and silicone/PTFE septum

30 - 60 ml Septum Vials: ø 27 mm, screw thread 24-400

for picture of screw cap and septum see page 37

30 ml 27 x 78 mm	40 ml 27 x 95 mm	50 ml 27 x 118 mm	60 ml 27 x 140 mm

with 3.4 mm thick septum, clear silicone / white PTFE

clear glass **G074*-27/078-SKFW34-H**	clear glass **G074*-27/095-SKFW34-H**	clear glass **G074*-27/118-SKFW34-H**	clear glass **G074*-27/140-SKFW34-H**
amber glass **G074*-27/078-SKFW34-D**	amber glass **G074*-27/095-SKFW34-D**	amber glass **G074*-27/118-SKFW34-D**	amber glass **G074*-27/140-SKFW34-D**

with 3.1 mm thick septum, clear silicone / red PTFE

clear glass **G074*-27/078-SWFR31-H**	clear glass **G074*-27/095-SWFR31-H**	clear glass **G074*-27/118-SWFR31-H**	clear glass **G074*-27/140-SWFR31-H**
amber glass **G074*-27/078-SWFR31-D**	amber glass **G074*-27/095-SWFR31-D**	amber glass **G074*-27/118-SWFR31-D**	amber glass **G074*-27/140-SWFR31-D**

with 1.6 mm thick septum, clear silicone / white PTFE

clear glass **G074*-27/078-SKFW16-H**	clear glass **G074*-27/095-SKFW16-H**	clear glass **G074*-27/118-SKFW16-H**	clear glass **G074*-27/140-SKFW16-H**
amber glass **G074*-27/078-SKFW16-D**	amber glass **G074*-27/095-SKFW16-D**	amber glass **G074*-27/118-SKFW16-D**	amber glass **G074*-27/140-SKFW16-D**

with 1.6 mm thick cross-slit septum, clear silicone / white PTFE

clear glass **G074*-27/078-SKFW16/HiX-H**	clear glass **G074*-27/095-SKFW16/HiX-H**	clear glass **G074*-27/118-SKFW16/HiX-H**	clear glass **G074*-27/140-SKFW16/HiX-H**
amber glass **G074*-27/078-SKFW16/HiX-D**	amber glass **G074*-27/095-SKFW16/HiX-D**	amber glass **G074*-27/118-SKFW16/HiX-D**	amber glass **G074*-27/140-SKFW16/HiX-D**

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Septum Vials & Storage Vials with round base

Our Septum Vial & Storage Vial screw caps are available in 6 colours. Replace the "*" in product code with the letter code beside the colour table on the right.

	yellow = Y		red = R
	blue = B		black = S
	green = G		white = W

3.5 ml 14 x 45 mm	8.5 ml 16 x 75 mm *wall thickness 1.2 mm*	10 ml 13 x 100 mm	15 ml 16 x 100 mm *wall thickness 1.2 mm*	15 ml 16 x 125 mm

with open-top screw cap and septum

clear glass 1.6 mm thick septum clear silicone/clear PTFE **G054*-14/045-SKFK16-H**	clear glass 1.6 mm thick septum clear silicone/clear PTFE **G054*-16/075-SKFW16-H/W12**	clear glass 1.6 mm thick septum clear silicone/clear PTFE **8054*-13/100-SKFW16-H**	clear glass 1.6 mm thick septum clear silicone/clear PTFE **G054*-16/100-SKFW16-H/W12**	clear glass 1.6 mm thick septum clear silicone/clear PTFE **8054*-16/125-SKFW16-H**

with closed-top PTFE lined screw cap

clear glass **G055*-14/045-H**	clear glass **G055*-16/075-H/W12**	clear glass **8055*-13/100-H**	clear glass **G055*-16/100-H/W12**	clear glass **8055*-16/125-H**

Septum Vial with round base & open-top screw cap

	60 ml 27 x 140 mm
3.4 mm thick septum from clear silicone / white PTFE	clear glass **G054*-27/140-SKFW34-H**
3.1 mm thick septum from white silicone / red PTFE	clear glass **G054*-27/140-SWFR31-H**
1.6 mm thick septum from clear silicone / white PTFE	**clear glass** **G054*-27/140-SKFW16-H**
1.6 mm thick cross-slit septum from clear silicone / white PTFE	clear glass **G054*-27/140-SKFW16/HiX-H**

Storage Vial with round base & closed-top screw cap

60 ml 27 x 140 mm
clear glass **G055*-27/140-H**

Open-top screw caps with silicone/PTFE septum

Our Septum Vial screw caps are available in 6 colours. Replace the "*" in product code with the letter code beside the colour table on the right.

	yellow = Y		red = R
	blue = B		black = S
	green = G		white = W

Screw caps from glass-fibre enforced polyamide for Septum Vials with 9 mm «HP» screw thread

for Septum Vials with 12 mm ø, 1.5 & 2 ml volume

	screw cap with septum	screw cap only	septum only
screw thread 9-425	9 mm open-top screw cap with smooth cap collar, with 1 mm thick ms-Pure septum, clear silicone/clear PTFE **G094*-SKFK10/09**	9 mm open-top screw cap with smooth cap collar **G094-C*/09**	1 mm thick ms-Pure septum from non-pigmented clear silicone / clear PTFE **G004-HP-SKFK10**
screw thread 9-425	as above but with ribbed cap collar **G194*-SKFK10/09**	as above but with ribbed cap collar **G194*-C*/09**	

Polypropylene screw cap

for Septum Vials with 12 mm ø, 1.5 & 2 ml volume

screw thread 8-425	8 mm open-top screw cap, with 1 mm thick septum from white silicone / red PTFE **G074*-SWFR10/08**	8 mm open-top screw cap **G074-C*/08**	1 mm thick septum from white silicone / red PTFE **G004-NM-Si/Te**

for Septum Vials with 14 mm ø, 1 - 5 ml volume

screw thread 13-425	13 mm open-top screw cap, with 1.6 mm thick septum from clear silicone / white PTFE **G074*-SKFW16/13**	13 mm open-top screw cap **G074-C*/13**	1.6 mm thick septum from clear silicone / white PTFE **G074-SK16FW02/13**

for Septum Vials with 17 mm ø & 19 mm ø, 2.5 - 15 ml volume

screw thread 15-425	15 mm open-top screw cap, with 1.6 mm thick septum from clear silicone / white PTFE **G074*-SKFW16/15**	15 mm open-top screw cap **G074-C*/15**	1.6 mm thick septum from clear silicone / white PTFE **G074-SK16FW02/15**

for Septum Vials with 23 mm ø, 7.5 - 25 ml volume

screw thread 20-400	20 mm open-top screw cap, with 3.4 mm thick septum from clear silicone / white PTFE **G074*-SKFW34/20**	20 mm open-top screw cap 12 mm ø opening, 13 mm collar height **G074-C13*12/20**	3.4 mm thick septum from clear silicone / white PTFE **G074-SK32FW02/20**
screw thread 20-400	20 mm open-top screw cap, with 1.6 mm thick septum from clear silicone / white PTFE **G074*SKFW16/20**	20 mm open-top screw cap 12 mm ø opening, 10 mm collar height **G074-C10*12/20**	1.6 mm thick septum from clear silicone / white PTFE **G074-SK16FW02/20**

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for Septum Vials with 27 mm ø, 10 - 60 ml volume

Screw cap 24-400 with 3.4 mm thick septum

	screw cap with septum	screw cap only	septum only
screw-thread 24-400	24 mm open-top screw cap with 13 mm cap collar and 14 mm ø opening, with 3.4 mm thick septum from clear silicone/ white PTFE **G074*-SKFW34/24**	24 mm screw cap with 14 mm ø opening, 13 mm collar height **G074-C13*14/24**	3.4 mm thick septum from clear silicone / white PTFE **G074-SK32FW02/24**
screw-thread 24-400	24 mm open-top screw cap with 13 mm cap collar and 10 mm ø opening, with 3.4 mm thick septum from white silicone / red PTFE **G074*-SWFR34/24-H13L10**	24 mm screw cap with 10 mm ø opening, 13 mm collar height **G074-C13*10/24**	

Screw cap 24-400 with 3.1 mm thick septum

screw thread 24-400	24 mm open-top screw cap with 13 mm cap collar and 14 mm ø opening, with 3.1 mm thick septum from white silicone / red PTFE **G074*-SWFR31/24**	24 mm screw cap with 14 mm ø opening, 13 mm collar height **G074-C13*14/24**	3.1 mm thick septum from white silicone / red PTFE **G074-SW30FR01/24**
screw thread 24-400	24 mm open-top screw cap with 13 mm cap collar and 10 mm ø opening, with 3.1 mm thick septum from white silicone / red PTFE **G074*-SWFR31/24-H13L10**	24 mm screw cap with 10 mm ø opening, 13 mm collar height **G074-C13*10/24**	

Screw cap 24-400 with 1.6 mm thick septum

screw thread 24-400	24 mm open-top screw cap with 11 mm cap collar and 14 mm ø opening, with 1.6 mm thick septum from clear silicone / white PTFE **G074*-SKFW16/24**	24 mm screw cap with 14 mm ø opening, 11 mm collar height **G074-C11*14/24**	1.6 mm thick septum from clear silicone / white PTFE **G074-SK14FW02/24**
screw thread 24-400	24 mm open-top screw cap with 11 mm cap collar and 10 mm ø opening with 3.4 mm thick septum from white silicone / red PTFE **G074*-SWFR34/24-H13L10**	24 mm screw cap with 10 mm ø opening, 11 mm collar height **G074-C11*10/24**	

Screw cap 24-400 with 1.6 mm thick septum

screw thread 24-400	24 mm open-top screw cap with 11 mm cap collar and 14 mm ø opening, with 1.6 mm thick cross-slit septum from clear silicone / white PTFE **G074*-SKFW16/HiX-24**	24 mm screw cap with 14 mm ø opening, 11 mm collar height **G074-C11*14/24**	1.6 mm thick cross-slit septum from clear silicone / white PTFE **G074-SK14FW02/HiX-24**
screw thread 24-400	24 mm open-top screw cap with 11 mm cap collar and 10 mm ø opening, with 1.6 mm thick cross-slit septum from clear silicone / white PTFE **G074*-SKFW16/HiX-24-H11L10**	24 mm screw cap with 10 mm ø opening, 11 mm collar height **G074-C11*10/24**	

Storage Vials from 1 - 60 ml with closed-top, PTFE lined screw cap

Our Storage Vial line comprises 6 vial diameters and over 30 different dimensions within the volumes of 1 - 60 ml. The vials come assembled with closed-top PTFE lined screw cap and are supplied in a high quality card board box with a grit divider holding 100 vials. The box is also ideally suited for storing or for transportation of the vials.

All screw caps are available in the colours blue, yellow, green, red, black or white.

Special cap colours or «in between» vial sizes are available on request; we can also produce to your specifications.

	Vial ø 12 mm Screw thread 9-425	**Vial ø 14 mm Screw thread 13-425**	**Vial ø 17 mm Screw thread 15-425**	**Vial ø 19 mm Screw thread 15-425**
Kit	**height: 24 mm height: 32 mm, V-Vial height: 32 mm assorted** G195X-12Kit02-H G195X-12Kit02-D	**height: 26 mm height: 30 mm height: 45 mm height: 50 mm assorted** G075X-14Kit05-H G075X-14Kit05-D	**height: 27 mm height: 35 mm height: 42 mm height: 60 mm height: 72 mm assorted** G075X-17Kit10-H G075X-17Kit10-D	**height: 37 mm height: 50 mm height: 65 mm height: 85 mm assorted** G075X-19Kit15-H G075X-19Kit15-D
1 ml	**height: 24 mm** G195*-12/024-H G195*-12/024-D	**height: 19 mm** G075*-14/019-H G075*-14/019-D		
1.2 ml 1.5 ml	**height: 32 mm** G195*-12/032-H/V15µ G195*-12/032-D/V15µ	**height: 22 mm** G075*-14/022-H G075*-14/022-D		
2 ml	**height: 32 mm** G195*-12/032-H G195*-12/032-D	**height: 26 mm** G075*-14/026-H G075*-14/026-D		
2.5 ml		**height: 30 mm** G075*-14/030-H G075*-14/030-D	**height: 27 mm** G075*-17/027-H G075*-17/027-D	
3.75 ml			**height: 35 mm** G075*-17/035-H G075*-17/035-D	
4 ml		**height: 45 mm** G075*-14/045-H G075*-14/045-D		
5 ml		**height: 50 mm** G075*-14/050-H G075*-14/050-D	**height: 42 mm** G075*-17/042-H G075*-17/042-D	**height: 45 mm** G075*-19/037-H G075*-19/037-D

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Storage Vials

	Vial ø 17 mm Screw thread 15-425	**Vial ø 19 mm Screw thread 15-425**	**Vial ø 23 mm Screw thread 20-400**	**Vial ø 27 mm Screw thread 24-400**
Kit	**height: 27 mm height: 35 mm height: 42 mm height: 60 mm height: 72 mm assorted** G075X-17Kit10-H G075X-17Kit10-D	**height: 37 mm height: 50 mm height: 65 mm height: 85 mm assorted** G075X-19Kit15-H G075X-19Kit15-D	**height: 37 mm height: 45 mm height: 60 mm height: 75 mm height: 85 mm assorted** G075X-23Kit25-H G075X-23Kit25-D	**height: 37 mm, height: 47 mm height: 57 mm, height: 68 mm assorted** G075X-27Kit25-H G075X-27Kit25-D **height: 78 mm, height: 95 mm height: 118 mm, height: 140 mm assorted** G075X-27Kit60-H G075X-27Kit60-D
7.5 ml	**height 60 mm** G075*-17/060-H G075*-17/060-D	**height: 50 mm** G075*-19/050-H G075*-19/050-D	**height 37 mm** G075*-23/037-H G075*-23/037-D	
10 ml	**height 72 mm** G075*-17/072-H G075*-17/072-D	**height: 65 mm** G075*-19/065-H G075*-19/065-D	**height 45 mm** G075*-23/045-H G075*-23/045-D	**height: 37 mm** G075*-27/037-H G075*-27/037-D
15 ml		**height: 87 mm** G075*-19/087-H G075*-19/087-D	**height 60 mm** G075*-23/060-H G075*-23/060-D	**height: 47 mm** G075*-27/047-H G075*-27/047-D
20 ml			**height 75 mm** G075*-23/075-H G075*-23/075-D	**height: 57 mm** G075*-27/057-H G075*-27/057-D
25 ml			**height 85 mm** G075*-23/085-H G075*-23/085-D	**height: 68 mm** G075*-27/068-H G075*-27/068-D
30 ml				**height: 78 mm** G075*-27/078-H G075*-27/078-D
40 ml				**height: 95 mm** G075*-27/095-H G075*-27/095-D
50 ml				**height: 118 mm** G075*-27/118-H G075*-27/118-D
60 ml				**height: 140 mm** G075*-27/140-H G075*-27/140-D G055*-27/140-H *Vial with round base*

Storage Vial kits

Our Storage Vial kits contain vials with the different volumes and heights from one vial diameter. They are assembled with closed-top, PTFE lined screw caps and the cap colours are assorted. Thus you always have the right vial for you sample volume. Our Storage Vial kits are packed in high quality card board boxes with a grit divider holding 100 vials.

Storage Vial kit: Vial ø 12 mm

complete with closed-top, PTFE lined screw cap from glass-fibre enforced polyamide
colours assorted

clear glass: G195X-12Kit02-H
amber glass: G195X-12Kit02-D

35 pcs. **height 24 mm 1 ml** | 30 pcs. **height 32 mm 1.2 ml** | 35 pcs. **height 32 mm 2 ml**

Storage Vial kit: Vial ø 14 mm

complete with closed-top, PTFE lined screw cap
colours assorted

clear glass: G075X-14Kit05-H
amber glass: G075X-14Kit05-D

25 pcs. **height 26 mm 2 ml** | 25 pcs. **height 30 mm 2.5 ml** | 25 pcs. **height 45 mm 4 ml** | 25 pcs. **height 50 mm 5 ml**

Storage Vial kit: Vial ø 17 mm

complete with closed-top, PTFE lined screw cap
colours assorted

clear glass: G075X-17Kit10-H
amber glass: G075X-17Kit10-D

20 pcs. **height 27 mm 2.5 ml** | 20 pcs. **height 35 mm 3.75 ml** | 20 pcs. **height 42 mm 5 ml** | 20 pcs. **height 60 mm 7.5 ml** | 20 pcs. **height 72 mm 10 ml**

Storage Vial kit: Vial ø 19 mm

complete with closed-top, PTFE lined screw cap
colours assorted

clear glass: G075X-19Kit15-H
amber glass: G075X-19Kit15-D

25 pcs. **height 37 mm 5 ml** | 25 pcs. **height 50 mm 7.5 ml** | 25 pcs. **height 65 mm 10 ml** | 25 pcs. **height 87 mm 15 ml**

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Storage Vials

Storage Vial kit: Vial ø 23 mm

complete with closed-top, PTFE lined screw cap
colours assorted

clear glass: G075X-23Kit25-H
amber glass: G075X-23Kit25-D

20 pcs. **Height 37 mm 7.5 ml**
20 pcs. **Height 45 mm 10 ml**
20 pcs. **Height 60 mm 15 ml**
20 pcs. **Height 75 mm 20 ml**
20 pcs. **Height 85 mm 25 ml**

Please note that the number of each individual vial in the kit may slightly vary to the numbers given on this page. This is due to logistics.

Please inquire about the exact number when placing your order. We thank you for your understanding.

Storage Vial kit: Vial ø 27 mm; 10 - 25 ml

complete with closed-top, PTFE lined screw cap
colours assorted

clear glass: G075X-27Kit25-H
amber glass: G075X-27Kit25-D

25 pcs. **height 37 mm 10 ml**
25 pcs. **height 47 mm 15 ml**
25 pcs. **height 57 mm 20 ml**
25 pcs. **height 86 mm 25 ml**

Storage Vial kit: Vial ø 27 mm; 30 - 60 ml

complete with closed-top, PTFE lined screw cap
colours assorted

clear glass: G075X-27Kit60-H
amber glass: G075X-27Kit60-D

25 pcs. **height 78 mm 30 ml**
25 pcs. **height 95 mm 40 ml**
25 pcs. **height 118 mm 50 ml**
25 pcs. **height 140 mm 60 ml**

Storage Vial with closed-top, PTFE lined screw cap

Storage Vials are supplied assembled with their closed-top, PTFE lined screw cap and are packed in high quality card board boxes with a grit divider holding 100 vials.

available cap colours; replace « * » with the cap colour of your choice

further cap colours on request, minimum quantities may apply

blue = B	yellow = Y	green = G	red = R	black = S	white = W	clear glass = H amber glass = D

Storage Vial wit glass-fibre enforced polyamide screw cap

1 ml, 1.2 ml & 2 ml Storage Vials: ø 12 mm, screw thread 9-425 («HP» type)

1 ml 12 x 24 mm	1.2 ml Vμ 12 x 32 mm *with small residual volume*	2 ml 12 x 32 mm
G195*-12/024-H G195*-12/024-D	G195*-12/032-H/V15μ G195*-12/032-D/V15μ	G195*-12/032-H G195*-12/032-D

Storage Vial with polypropylene screw cap

1 ml - 5 ml Storage Vials: ø 14 mm, screw thread 13-425

1 ml 14 x 19 mm	1.5 ml 14 x 22 mm	2 ml 14 x 26 mm	3 ml 14 x 30 mm	4 ml 14 x 45 mm	5 ml 14 x 50 mm
G075*-14/019-H G075*-14/019-D	G075*-14/022-H G075*-14/022-D	G075*-14/026-H G075*-14/026-D	G075*-14/030-H G075*-14/030-D	G075*-14/045-H G075*-14/045-D	G075*-14/050-H G075*-14/050-D

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2.5 ml - 10 ml Storage Vials: ø 17 mm, screw thread 15-425

2.5 ml 17 x 27 mm	3.75 ml 17 x 35 mm	5 ml 17 x 42 mm	7.5 ml 17 x 60 mm	10 ml 17 x 72 mm
G075*-17/027-H G075*-17/027-D	G075*-17/035-H G075*-17/035-D	G075*-17/042-H G075*-17/042-D	G075*-17/060-H G075*-17/060-D	G075*-17/072-H G075*-17/072-D

5 ml - 15 ml Storage Vials: ø 19 mm, screw thread 15-425

5 ml 19 x 37 mm	7.5 ml 19 x 50 mm	10 ml 19 x 65 mm	15 ml 19 x 87 mm
G075*-19/037-H G075*-19/037-D	G075*-19/050-H G075*-19/050-D	G075*-19/065-H G075*-19/065-D	G075*-19/087-H G075*-19/087-D

Storage Vial with closed-top, PTFE lined screw cap

Storage Vials are supplied assembled with closed-top, PTFE lined screw cap and are packed in high quality card board boxes with a grit divider holding 100 vials.

available cap colours; replace « * » with the cap colour of your choice

further cap colours or customised colours on request

blue = B	yellow = Y	green = G	red = R	black = S	white = W	clear glass = H amber glass = D

7.5 ml - 25 ml Storage Vial with closed-top, PTFE lined screw cap

Vial ø 23 mm, screw thread 20-400

7.5 ml 23 x 37 mm	10 ml 23 x 45 mm	15 ml 23 x 60 mm	20 ml 23 x 75 mm	25 ml 23 x 85 mm
G075*-23/037-H G075*-23/037-D	G075*-23/045-H G075*-23/045-D	G075*-23/060-H G075*-23/060-D	G075*-23/075-H G075*-23/075-D	G075*-23/085-H G075*-23/085-D

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10 ml - 60 ml Storage Vial with closed-top screw cap

Vial ø 27 mm, screw thread 24-400

10 ml 27x 37 mm	15 ml 27 x 47 mm	20 ml 27 x 57 mm	25 ml 27x 68 mm
G075*-27/037-H G075*-27/037-D	G075*-27/047-H G075*-27/047-D	G075*-27/057-H G075*-27/057-D	G075*-27/068-H G075*-27/068-D

30 ml 27 x 78 mm	40 ml 27 x 95 mm	50 ml 27 x 118 mm	60 ml 27 x 140 mm	60 ml 27 x 140 mm
G075*-27/078-H G075*-27/078-D	G075*-27/095-H G075*-27/095-D	G075*-27/118-H G075*-27/118-D	G075*-27/140-H G075*-27/140-D	vial with round base G055*-27/140-H

1 ml - 5 ml Storage Vial with “hard” phenolic screw cap (may be used up to 120°C)

Vials ø 14 mm, screw thread 13-425

Storage Vial with «hard» phenolic PTFE lined screw cap which may be used up to 120 °C.
Vials and caps are supplied assembled and are packed in high quality card board boxes with a grit divider holding 100 vials.

available cap colours; replace « * » with the cap colour of your choice

blue = B	yellow = Y	green = G	red = R	black = S	white = W

1 ml 14 x 19 mm	1.5 ml 14 x 22 mm	2 ml 14 x 26 mm	3 ml 14 x 30 mm	4 ml 14 x 45 mm	5 ml 14 x 50 mm
G085*-14/019-H G085*-14/019-D	G085*-14/022-H G085*-14/022-D	G085*-14/026-H G085*-14/026-D	G085*-14/030-H G085*-14/030-D	G085*-14/045-H G085*-14/045-D	G085*-14/050-H G085*-14/050-D

Closed-top, PTFE lined screw caps

Screw threads: 9-425, 8-425, 13-425, 15-425, 20-400 & 24-400

available in six colours; replace «*» with: blue = B, yellow = Y, green = G, red = R, black = S, white = W

	Screw thread 9-425 Glass-fiber enforced polyamide, smooth cap collar, for Storage Vials with volumes 1.2 & 2 ml; Type “HP”, Vial ø 12 mm **G095-C*/09**		**Screw thread 13-425** for Storage Vial volumes 1 - 5ml vial ø 14 mm **G085-C*/13**
	as above but with ribbed cap collar **G195-C*/09**		**Screw thread 15-425** for Storage Vial volumes 2.5 - 15 ml vial ø 17 mm & 19 mm **G075-C*/15**
	Screw thread 8-425 for Storage Vial volumes 1 - 2 ml vial ø 12 mm **G075-C*/08**		**Screw thread 20-400** for Storage Vial volumes 7.5 - 25 ml vial ø 23 mm **G075-C*/20**
	Screw thread 13-425 for Storage Vial volumes 1 - 5ml vial ø 14 mm **G075-C*/13**		**Screw thread 24-400** for Storage Vial volumes 10 - 60 ml vial ø 27 mm **G075-C*/24**

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10 & 20 ml Storage Vials

for the long-term storage of volatile samples

Our 10 and 20 ml Headspace Vials are now also available with closed-top melamine resin screw caps for the long-term storage of volatile samples. The screw caps are available in our six standard colours, either PTFE lined or with butyl rubber septum.

cap colours:
B = blue
Y = yellow
G = green
R = red
S = black
W = white

with PTFE lined screw cap

GH85*-23/043-H

10 ml Storage Vials, clear glass
rounded base
size 23 x 43 mm

assembled with volatilise proof closed-top, PTFE lined screw cap

GH85*-23/073-H

20 ml Storage Vials, clear glass
rounded base
size 23 x 73 mm

assembled with volatilise proof closed-top, PTFE lined screw cap

with butyl rubber/PTFE septum

GH85*-23/043-BZFZ31-H

10 ml Storage Vials, clear glass
rounded base
size 23 x 43 mm

assembled with volatilise proof closed-top screw cap with butyl rubber/PTFE septum

GH85*-23/073-BZFZ31-H

20 ml Storage Vials, clear glass
rounded base
size 23 x 73 mm

assembled with volatilise proof closed-top screw cap with butyl rubber/PTFE septum

also available graduated, see next page

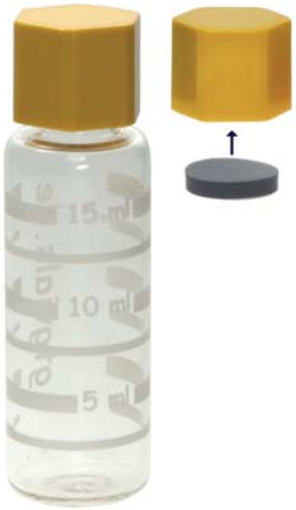
Graduated 20 ml Storage Vial for the long-term storage of volatile samples

20 ml Headspace Vials with closed-top melamine resin screw cap for the long-term storage of volatile samples. Available either PTFE lined or assembled with butyl rubber/PTFE septum.

GH85*-23/073-H/G

20 ml Storage Vial,
graduated at 5, 10 & 15 ml
clear glass, rounded base
size 23 x 73 mm

assembled with volatilise proof
PTFE lined closed-top screw cap



GH85*-23/073-BZFZ31-H/G

20 ml Storage Vial,
graduated at 5, 10 & 15 ml
clear glass, rounded base
size 23 x 73 mm

assembled with volatilise proof
closed-top screw cap with butyl
rubber septum

replace «» with the cap colour of your choice: B = blue, Y = yellow , G = green, R = red, S = black, W = white*

Graduated 8 ml Storage Vial

Vials ø 22 mm, screw thread GL18, graduated 2, 4 & 6 ml

Available with black phenolic screw cap with sealing cone or yellow, PTFE lined phenolic screw cap.

In addition to the silkscreen or alternatively, these vials may also be barcoded.

Our storage vials are packed in high quality cardboard boxes with a grit divider for 100 vials.

G060S-08-H/G
8 ml Storage Vial, graduated at 2, 4 & 6 ml
with black phenolic screw cap with a
polyethylene sealing cone
size: 22 x 48 mm
screw thread GL18

G065Y-08-H/G
8 ml Storage Vial, graduated at 2, 4 & 6 ml
with yellow, PTFE lined phenolic screw cap
size: 22 x 48 mm
screw thread GL18

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Barcoded Vials

Barcode labelling facilitates sample handling. The information about the sample contained in the barcode can be quickly identified and automatically recorded.

A barcode digitalises information (yes/no) and depicts it with the aid of dark bars in varying width and light spaces (gaps). Depending on the barcode the gaps or the ratio between bar/gap contain information as well. The ratio between narrow and wide bars is standardised and usually lies between 1 : 2.5 - 1 : 3.5.

Before and after the code is a free space called the quiet zone, which is required for a correct decoding of the barcode.

Before and after the quiet zone are start and stop signs which indicate the scan direction.

A barcode can store multiple information on a relatively narrow space such as sample compounds, information about the synthesis, toxicity, storage conditions and more.

In order for the scanner to read the barcode correctly it may not be smudged. Therefore a solvent resistant label is recommended which for additional protection can be laminated.

Barcode Labels

☛ Barcode labels can be designed to customer specification. It is for example possible to include the company logo on the label.

☛ Labels are available for vials starting from 2 ml volume.

☛ We supply the label applied to the vial or the label only.

Barcode Laser Printing

☛ The barcode is applied to the vial with a laser printer.

☛ Barcode and 2D Matrix Code are possible.

Vμ-Vial consecutively numbered from 1 to 100

Agilent compatible Vμ-Vial, amber borosilicate glass, size 12 x 32 mm
1.2 ml total volume and small residual volume, consecutively numbered from 1 - 100

1 2 3 4 5 6 7 100

Cleaned Vials for TOC and other Critical Applications

Available Container Processing

Process	Typical Application	Description
Silanisation & Siliconisation & Particle Cleaning		
Silanisation	Proteins, assays of blood serum, pharmacological assays of therapeutic drugs	Silanising neutralizes active sites in glassware. This prevents the sample to react with active sites in the glass.
Siliconisation	Proteins, assays of blood serum, pharmacological assays of therapeutic drugs	Siliconised products are physically coated with medical-grade silicone emulsion to prevent the sample to react with active sites in the glass.
Particle Cleaning	Numerous applications in the pharmaceutical, biotech, medical, semiconductor industries, and anywhere cleanrooms or controlled environments are utilized	17 MOhm pure, electronics-grade water filtered to sub-micron levels is heated and used for the particulate cleaning process.
TOC & VOC certified & USP Purified Water and WFI Rinses		
TOC	Validation of water systems and cleaning validations, TOC trace analysis	Total organic carbon (TOC) is a measure of the amount of carbon covalently bound in organic molecules in a water sample.
VOC	Trace analysis of volatile organic compounds (VOC)	Cleaning following EPA Protocol „B“
USP Purified Water and WFI Rinses	Clean Room applications in the pharmaceutical, biotech, medical, and semiconductor industries	For the detection of smallest TOC contents eg in pharmaceutical waters: rinsing with purest water and WFI rinse for depyrogenated or sterile containers
Sterilisation		
Steam Sterilisation	Injectable or parenteral drugs, lyophilisation, final packaging prior to drug delivery, stability studies	Sterilization involving steam, heat and pressure to destroy all viable forms of life, including bacterial spores to an acceptable sterility assurance level (SAL) of 10^{-6}
Irradiation	Injectable or parenteral drugs, lyophilisation, final packaging prior to drug delivery, stability studies, clinical trials	A radiation dose sufficient to destroy all viable forms of life including bacterial spores, is applied to an acceptable sterility level (SAL). A typical radiation dose is 25-40 kGy, which produces the required SAL of 10^{-6}
Sterile Foil-Wrap	Injectable or parenteral drugs, stability studies, clinical trials	Sterilization via a validated dry-heat, foil-wrap method. Stoppers and seals are sterilized via autoclave methods.
Depyrogenation validated 3-log reduction	Injectable or parenteral drugs, Lyophilisation, final packaging prior to drug delivery, stability studies, clinical trial	Depyrogenation destroys and removes Endotoxines. Endotoxines are fever producing substances which are found in the cell wall of certain bacteria. Depyrogenated products have reduced endotoxin content by at least 99.9%.
RNase & DNase	molecular biology, in the pharmaceutical medical research fields	Ribonuclease, is a nuclease that catalyses the hydrolysis of RNA into smaller components. RNase A for example is one of the hardiest enzymes in common laboratory usage. Nucleases are omnipresent contaminates in the laboratory environment today, and while bacterial contamination is still a major concern for molecular biologists in the pharmaceutical and medical research fields, sterilization methods such as gamma irradiation and autoclaving do not remove RNase, DNase and pyrogens.

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Vials & caps: sterile & depyrogenated

- ☛ **cleaning and packing in clean room class 100/10**
- ☛ **endotoxin content < 0.06 EU/ml**
- ☛ **with certificate of analysis**

Depyrogenation destroys and removes the endotoxins in the glass vial. Endotoxins are fever producing substances which are found in the cell wall of certain bacteria. Depyrogenated products have reduced endotoxin content by at least 99.9%.

Injectable or parenteral drugs, lyophilisation, final packaging prior to drug delivery, stability studies, clinical trial

We sterilise and depyrogenise Vials & Caps including test of analysis and certificate. We have a standard programme of vials from 5 - 100 ml in clear and amber glass. Vial, cap and septum are individually sealed. 10 individually sealed sets make up a sales unit. Special projects possible without problem, please inquire.

G876-20-2FB3-ACB-H/FL/SPZ/EZ	20 ml crimp vial, clear glass, 23 x 55 mm with aluminium crimp cap with butyl rubber stopper
G876-05-2FB3-ACB-D/SPZ/EZ	5 ml crimp vial, clear glass, 23 x 40 mm with aluminium crimp cap with butyl rubber stopper
G876-10-2FB3-ACB-D/FL/SPZ/EZ	10 ml crimp vial, amber glass, 23 x 45 mm with aluminium crimp cap with butyl rubber stopper
G876-05-2FB3-TO-H/SPZ/EZ	5 ml crimp vial, clear glass, 23 x 40 mm aluminium crimp cap with tear-off seal with butyl rubber stopper
G876-05-2FB3-TO-D/SPZ/EZ	5 ml crimp vial, amber glass, 23 x 40 mm aluminium crimp cap with tear-off seal with butyl rubber stopper
G876-20-2FB3-TO-D/SPZ/EZ	20 ml crimp vial, amber glass, 23 x 40 mm aluminium crimp cap with tear-off seal with butyl rubber stopper
GHS6-10R-BZFZ-H/SPZ/EZ	10 ml screw vial, clear glass, 23 x 45 mm with magnetic screw cap with butyl/PTFE septum
GHS6-10R-BZFZ-D/SPZ/EZ	10 ml screw vial, clear glass, 23 x 45 mm with magnetic screw cap with butyl/PTFE septum
GHS6-20R-BZFZ-D/SPZ/EZ	20 ml screw vial, amber glass, 23 x 75 mm with magnetic screw cap with butyl/PTFE septum

TOC certified Vials

TOC Vials, borosilicate glass, complete with open-top screw cap and 1.5 mm thick silicone/PTFE septum. Screw cap and septum welded.

40 ml screw vial pre-cleaned for TOC < 10 ppb

with certificate of compliance with batch number, certified by independent laboratory

volume	glass	dimension	TOC (ppb)	product no.
40 ml	clear	27 x 95 mm	< 10	8S74-40-H/TOC10-15

for vials in amber glass or 20 ml volume please inquire

Vials with round base, pre-cleaned for TOC < 20 ppb and < 10 ppb

volume	glass	dimension	TOC (ppb)	product no.
17 ml	clear	18 x 100 mm	< 20	8E17-TOC20-15
18 ml	clear	16 x 125 mm	< 20	8E18-TOC20-15
18 ml	clear	16 x 125 mm	< 10	8E18-TOC10-15
60 ml	clear	25 x 150 mm	< 20	8E60-TOC20-15

PrePreserved® vials for VOC analysis (Method 5053)

40 ml screw vial with hydrochloride acid

40 ml vial, borosilicate glass, complete with open-top screw cap and 3.2 mm thick clear silicone/PTFE septum

pre-cleaned according to procedure P2 as described on page 57
with certificate of compliance
filled with 0.5 ml hydrochloride acid

volume	glass	dimension	filled with	product no.
40 ml	clear	27 x 95 mm	hydrochloride acid 0.5 ml	8S74-40-H/HCL
40 ml	amber	27 x 95 mm	hydrochloride acid 0.5 ml	8S74-40-D/HCL

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Pre-cleaned vials and bottles with certificate of compliance

for pesticide analysis (P1)

container preparation includes
1. non-phosphate detergent washing
2. multiple tap water washing
3. ASTM Type I deionized water rinses
4. 1:1 HNO^3 (Nitric Acid) & solvent rinses
5. oven drying
6. clean-room assembly of vial, cap and septum

for VOC analysis (P2)

container preparation includes
1. non-phosphate detergent washing
2. multiple tap water washing
3. ASTM Type I deionized water rinses
4. oven drying
5. clean-room assembly of vial, cap and septum

for metal, cyanide, sulfide and fluoride analysis (P3)

container preparation includes
1. non-phosphate detergent washing
2. multiple tap water washing
3. ASTM Type I deionized water rinses
4. 1:1 HNO^3 (Nitric Acid) rinses
5. oven drying
6. clean-room assembly of vial, cap and septum

for nitrate/nitrate analysis (P4)

container preparation includes
1. non-phosphate detergent washing
2. multiple tap water washing
3. ASTM Type I deionized water rinses
4. 1:1 $H^2S^2SO^4$ (sulphuric acid) rinses
5. oven drying
6. clean-room assembly of vial, cap and septum

with open-top screw cap and silicone/PTFE septum

replace the «» the product no. with the number of your chosen cleaning procedure*

	8S74-20-H/P*	20 ml screw vial, clear glass, dimension 27 x 57 mm assembled with open-top screw cap (cap size 24-414) and 3.2 mm thick clear silicone/PTFE septum
	8S74-20-D/P*	20 ml screw vial, amber glass, dimension 27 x 57 mm assembled with open-top screw cap (cap size 24-414) and 3.2 mm thick clear silicone/PTFE septum
	8S74-40-H/P*-15W	40 ml screw vial, clear glass, dimension 27 x 95 mm assembled with open-top screw cap (cap size 24-414) and 1.5 mm thick clear silicone/PTFE cap & septum welded

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with open-top screw cap and silicone/PTFE septum (continued)

replace the «» the product no. with the number of your chosen cleaning procedure*

	8S74-40-H/P*	40 ml screw vial, clear glass, dimension 27 x 95 mm assembled with open-top screw cap (cap size 24-414) & 3.2 mm thick clear silicone/PTFE septum
	8S74-40-D/P*	40 ml screw vial, amber glass, dimension 27 x 95 mm assembled with open-top screw cap (cap size 24-414) & 3.2 mm thick clear silicone/PTFE septum
	8S74-60-H/P*	60 ml screw vial, clear glass, dimension 27 x 140 mm assembled with open-top screw cap (cap size 24-414) & 3.2 mm thick clear silicone/PTFE septum
	8S74-60-D/P*	60 ml screw vial, amber glass, dimension 27 x 140 mm assembled with open-top screw cap (cap size 24-414) & 3.2 mm thick clear silicone/PTFE septum
	8S74-NM-250-H/P*	250 ml narrow-mouth screw bottle, clear glass, dimension 60 x 71 mm assembled with open-top screw cap (cap size 24-414) & 3.2 mm thick clear silicone/PTFE septum

Cleaning procedure:

Pesticide analysis (P1)

VOC analysis (P2)

Metal, cyanide, sulphide and fluoride analysis (P3)

Nitrate/Nitrate analysis (P4)

Description of procedures, see page 57

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Pre-cleaned vials and bottles with certificate of compliance

with PTFE lined closed-top screw cap

replace the «» the product no. with the number of your chosen cleaning procedure*

	8S75-WM-125-H/P*	125 ml straight sided screw bottle clear glass, dimension 60 x 68 mm with PTFE lined closed-top screw cap (cap size 58-400)
	8S75-WM-125-D/P*	125 ml straight sided screw bottle amber glass, dimension 60 x 68 mm with PTFE lined closed-top screw cap (cap size 58-400)
	8S75-WM-250-H/P*	250 ml straight sided screw bottle clear glass, dimension 72 x 89 mm with PTFE lined closed-top screw cap (cap size 70-400)
	8S75-WM-250-D/P*	250 ml wide-mouth screw bottle amber glass, dimension 72 x 89 mm with PTFE lined closed-top screw cap (cap size 70-400)
	8S75-WM-950-D/P*	950 ml wide-mouth screw bottle amber glass, dimension 99 x 175 mm with PTFE lined closed-top screw cap (cap size 33-430)
	8S75-WM-1000-D/P*	1000 ml narrow-mouth screw bottle amber glass, dimension 98 x 210 mm with PTFE lined closed-top screw cap (cap size 53-400)

Cleaning procedure:

Pesticide analysis (P1)

VOC analysis (P2)

Metal, cyanide, sulphide and fluoride analysis (P3)

Nitrate/Nitrate analysis (P4)

Description of procedures, see page 57

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Other volumes and bottle dimensions available. Please inquire: anfrage@infochroma.ch

Sample Bottles complete with closed-top screw cap, volumes ranging from 6 ml - 2500 ml

	Clear & amber Boston Round bottle	Amber wide mouth bottle	Clear wide mouth bottle	Clear square wide mouth bottle	Clear graduated wide mouth bottle	Clear & amber straight sided wide mouth bottle
6 ml		24 x 43 mm				
15 ml		31 x 50 mm		25 x 61 mm		
30 ml	31 x 79 mm*	37 x 65 mm		31 x 72 mm 34 x 61 mm	34 x 68 mm	43 x 43 mm*
60 ml	39 x 94 mm	45 x 75 mm		38 x 86 mm 39 x 89 mm	42 x 83 mm	55 x 55 mm* 54 x 51 mm**
120 ml	49 x 114 mm	54 x 95 mm	52 x 96 mm	44 x 144 mm	51 x 102 mm	60 x 60 mm*
125 ml						61 x 67 mm**
180 ml						65 x 79 mm*
240 ml	61 x 138 mm		62 x 104 mm	56 x 137 mm	62 x 127 mm	74 x 89 mm* 70 x 92 mm**
250 ml		65 x 120 mm				
300 ml		65 x 100 mm				
480 ml	70 x 160 mm	70 x 140 mm	72 x 133 mm	68 x 167 mm	70 x 130 mm	90 x 95 mm*
500 ml		80 x 146 mm				108 x 89 mm**
960 ml	90 x 190 mm	90 x 160 mm	94 x 177 mm	83 x 203 mm		90 x 160 mm*
1000 ml	92 x 205 mm**	99 x 178 mm				
1250 ml		106 x 190 mm				
1920 ml			122 x 214 mm			
2500 ml		140 x 239 mm				
	** clear glass only* *** amber glass only*					** clear glass only* *** amber glass only*

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with PTFE lined closed-top polypropylene screw cap

Amber wide mouth bottle

volume	15 ml	30 ml	60 ml	125 ml	250 ml
dimension	31 x 50 mm	37 x 65 mm	45 x 75 mm	54 x 95 mm	65 x 120 mm
bottle with cap	8075-WM-15-D	8075-WM-30-D	8075-WM-60-D	8075-WM-125-D	8075-WM-250-D
screw cap only	8075-C/28	8075-C/28	8075-C/33	8075-C/38	8075-C/45

volume	500 ml	1000 ml	1250 ml	2500 ml
dimension	80 x 146 mm	99 x 178 mm	106 x 190 mm	140 x 239 mm
bottle with cap	8075-WM-500-D	8075-WM-1000-D	8075-WM-1250-D	8075-WM-2500-D
screw cap only	8075-C/53	8075-C/53	8075-C/70	8075-C/70

Amber straight sided wide mouth bottle

volume	60 ml	125 ml	240 ml	500 ml
dimension	54 x 51 mm	60 x 67 mm	70 x 92 mm	108 x 89 mm
bottle with cap	8075-SR-60-D	8075-SR-125-D	8075-SR-240-D	8075-SR-500-D
screw cap only	8075-C/53	8075-C/58	8075-C/63	8075-C/100

with PTFE lined closed-top heat tolerant (max. 120°C) thermoset plastic screw cap

Clear wide mouth bottle

volume	120 ml	240 ml	480 ml	960 ml	1920 ml
dimension	52 x 96 mm	62 x 104 mm	72 x 133 mm	94 x 177 mm	122 x 214 mm
bottle with cap	8080-WM-120-H	8080-WM-240-H	8080-WM-480-H	8080-WM-960-H	8080-WM-1920-H
screw cap only	8080-C/48	8080-C/58	8080-C/63	8080-C/70	8080-C/89

for peace of mind when handling hazardous samples
bottles available safety coated: www.infochroma.ch/eng/samplebottles/safetycoated.html

Clear straight sided wide mouth bottle

volume	30 ml	60 ml	120 ml	180 ml	240 ml
dimension	43 x 43 mm	55 x 55 mm	60 x 60 mm	65 x 79 mm	74 x 89 mm
bottle with cap	8080-SR-30-H	8080-SR-60-H	8080-SR-120-H	8080-SR-180-H	8080-SR-240-H
screw cap only	8080-C/43	8080-C/53	8080-C/58	8080-C/63	8080-C/70

volume	480 ml	960 ml
dimension	90 x 95 mm	90 x 160 mm
bottle with cap	8080-SR-480-H	8080-SR-960-H
screw cap only	8080-C/89	8080-C/89

Clear square wide mouth bottle

volume	15 ml	30 ml	30 ml	60 ml	60 ml
dimension	25 x 61 mm	31 x 72 mm	34 x 61 mm	38 x 86 mm	39 x 89 mm
bottle with cap	8080-FS-15-H	8080-FS-30-H	8080-ST-30-H	8080-FS-60-H	8080-ST-60-H
screw cap only	8080-C/20	8080-C/24	8080-C/33	8080-C/28	8080-C/33

volume	120 ml	240 ml	480 ml	960 ml
dimension	44 x 114 mm	56 x 137 mm	68 x 167 mm	83 x 203 mm
bottle with cap	8080-FS-120-H	8080-FS-240-H	8080-FS-480-H	8080-FS-960-H
screw cap only	8080-C/33	8080-C/43	8080-C/48	8080-C/58

Clear graduated wide mouth bottle

volume	30 ml	60 ml	120 ml	240 ml	480 ml
dimension	34 x 68 mm	42 x 83 mm	51 x 102 mm	62 x 127 mm	70 x 130 mm
bottle with cap	8080-MM-30-H	8080-MM-60-H	8080-MM-120-H	8080-MM-240-H	8080-MM-480-H
screw cap only	8080-C/33	8080-C/38	8080-C/48	8080-C/58	8080-C/70

Amber wide mouth bottle

volume	6 ml	15 ml	30 ml	60 ml	120 ml
dimension	24 x 43 mm	31 x 50 mm	37 x 65 mm	45 x 75 mm	54 x 95 ml
bottle with cap	8080-WM-06-D	8080-WM-15-D	8080-WM-30-D	8080-WM-60-D	8080-WM-120-D
screw cap only	8080-C/20	8080-C/28	8080-C/28	8080-C/33	8080-C/38

volume	250 ml	300 ml	480 ml	950 ml	1250 ml
dimension	65 x 120 mm	65 x 100 mm	70 x 140 mm	90 x 160 mm	106 x 190
bottle with cap	8080-WM-250-D	8080-WM-300-D	8080-WM-480-D	8080-WM-950-D	8080-WM-1250-D
screw cap only	8080-C/45	8080-C/53	8080-C/53	8080-C/53	8080-C/70

Boston Round bottle

volume	30 ml	60 ml	120 ml	240 ml	480 ml
dimension	31 x 79 mm	39 x 94 mm	49 x 114 mm	61 x 138 mm	70 x 160 ml
clear glass	8080-BR-30-H	8080-BR-60-H	8080-BR-120-H	8080-BR-240-H	8080-BR-480-H
amber glass	-	8080-BR-60-D	8080-BR-120-D	8080-BR-240-D	8080-BR-480-D
screw cap only	8080-C/20	8080-C/20	8080-C/22	8080-C/24	8080-C/28

volume	960 ml	1000 ml
dimension	90 x 190 mm	92 x 205
clear glass	8080-BR-960-H	-
amber glass	8080-BR-960-D	8080-BR-1000-D
screw cap only	8080-C/33	8080-C/33

Amber wide mouth and Boston Round bottles are also available pre-cleaned and safety coated: further information on: www.infochroma.ch/eng/samplebottles

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Sample bottles, safety coated

For valuable samples, concentrated acids and bases, inflammable organic solvents

- Slip resistant - reduces risk when handling hazardous chemicals
- Impact resistant coating reduces risk of broken glass in the lab or in transit
- If a bottle should break the plastisol coating contains the content of the bottle long enough to allow proper disposal

for further information on availability refer to: *www.infochroma.ch/eng/samplebottles/safetycoated.html*

Closed-top or open-top screw caps

	Closed-top screw cap, PTFE lined		Closed-top screw cap, PTFE lined		Open-top screw cap with silicone/PTFE septum	
screw thread	**colour**	**product no.**	**colour**	**product no.**	**colour**	**product no.**
20-400	green	8080-C/20	aqua	8075-C/20	white	8074-C/20-Si/Te
22-400	green	8080-C/22	aqua	8075-C/22	white	8074-C/22-Si/Te
24-400	green	8080-C/24	aqua	8075-C/24	aqua	8074-C/24-Si/Te
28-400	green	8080-C/28	aqua	8075-C/28	white	8074-C/28-Si/Te
33-400	green	8080-C/33	aqua	8075-C/33	white	8074-C/33-Si/Te
38-400	green	8080-C/38	aqua	8075-C/38	aqua	8047-C/38-Si/Te
43-400	green	8080-C/43	aqua	8075-C/43	-	-
45-400	green	8080-C/45	aqua	8075-C/45	-	-
48-400	green	8080-C/48	aqua	8075-C/48	aqua	8074-C/48-Si/Te
53-400	green	8080-C/53	aqua	8075-C/53	aqua	8074-C/53-Si/Te
58-400	green	8080-C/58	aqua	8075-C/58	aqua	8074-C/58-Si/Te
63-400	green	8080-C/63	aqua	8075-C/63	-	-
70-400	green	8080-C/70	aqua	8075-C/70	-	-
89-400	green	8080-C/89	aqua	8075-C/89	blue	8094-C/89-Si/Te

Autoclavable lyophilisation crimp vials & caps

2 - 5 ml lyophilisation crimp vial with 13 mm crimp head, clear or amber boroslicate glass

8082-15/033-H 2 ml clear borosilicate glass 15 x 33 mm	**8082-15/037-H** 3 ml clear borosilicate glass 15 x 37 mm	**8082-16/035-H** 3 ml clear borosilicate glass 16 x 35 mm **8082-16/035-D** 3 ml amber glass 16 x 35 mm	**8082-16/045-H** 4 ml clear borosilicate glass 16 x 50 mm	**8082-16/050-D** 5 ml amber borosilicate glass 16 x 50 mm

13 mm aluminium crimp cap with tear-off seal & stopper

8083-TO 13 mm aluminium crimp cap with tear-off seal	**8083-Lio** 13 mm stopper, grey butyl rubber matching crimp cap 8083-TO	**8083-Bu** 13 mm stopper, grey butyl rubber, matching crimp cap 8083-TO

5 - 10 ml lyophilisation crimp vial with 20 mm crimp head, clear or amber borosilicate glass

8086-23/039-H 5 ml clear borosilicate glass 23 x 39 mm	**8086-22/040-D** 5 ml amber borosilicate glass 22 x 40 mm	**G006-10-H/FL** 10 ml clear borosilicate glass 24 x 46 mm	**8086-24/045-D** 10 ml amber borosilicate glass 24 x 45 mm

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10 - 100 ml lyophilisation crimp vial with 20 mm crimp head, clear or amber glass

8006-10-D 10 ml amber borosilicate glass 21 x 55 mm

8006-20-D 20 ml amber borosilicate glass 23 x 75 mm

8086-29/056-H 20 ml clear glass 29 x 56 mm

8086-32/058-D 20 ml amber borosilicate glass 32 x 58 mm

8086-36/062-H 30 ml clear glass 36 x 62 mm

8086-43/073-H or 8086-43/073-D 50 ml clear glass (H) amber glass (D) 43 x 73 mm

8086-100-H or 8086-52/095-D 100 ml clear glass (H) amber glass (D) 52 x 95 mm

20 mm aluminium crimp cap with tear-off seal & stopper

8087-TO 20 mm alumini-um crimp cap with tear-off seal

no image

8087-Si 20 mm silicone stopper

8087-Bu 20 mm stopper, grey butyl rubber

8087-Bu/Te 20 mm stopper, grey butyl rubber, black PTFE

8C20-2FB3 20 mm stopper, grey butyl rubber *(available sterile, min. pack of 2000 pcs.)*

8087-Lio 20 mm stopper, grey butyl rubber

Autoclavable Lyophilisation Screw Vials

3 - 5 ml lyophilisation screw vials with 15.5 mm screw-thread, clear or amber boroslicate glass

8084-03-H 3 ml clear glass 18 x 36 mm	**8084-03-D** 3 ml amber glass 18 x 36 mm	**8084-05-H** 5 ml clear glass 18 x 41 mm	**8084-05-D** 5 ml amber glass 18 x 41 mm

17 mm screw cap & stopper

8084-CW-Lio 17 mm autoclavable, white polypropylene screw cap	**8084-Lio** 14 mm stopper, grey butyl rubber	**8084-CW-PP** 17 mm screw cap polyethylene lined *(not autoclavable)*

10 - 25 ml screw vials with 22 mm screw thread, clear or amber borosilicate glass

8084-10-H or 8084-10-D 10 ml clear glass (H) amber glass (D) 25 x 50 mm	**8084-20-H or 8084-20-D** 20 ml clear glass (H) amber glass (D) 28 x 63 mm	**8084-25-H or 8084-25-D** 25 ml clear glass (H) amber glass (D) 32 x 63 mm

22 mm screw cap and stopper

8084-CW/22-Lio 22 mm autoclavable, white polypropylene screw cap	**8084-CR/22-Lio** 22 mm autoclavable, red polypropylene screw cap	**8087-Lio** 22 mm stopper, grey butyl rubber, *to be used with caps 8084-C*/22-Lio*	**8084-CW/22-PP** 22 mm screw cap with synthetic seal *(not autoclavable)*

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Blue or green borosilicate Storage Vials

Storage Vials, blue (B) or green (G) borosilicate glass, complete with closed-top PTFE lined screw cap

available cap colours; replace « * » with the cap colour of your choice

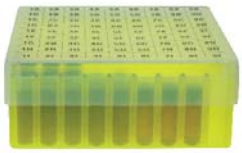
blue = B	yellow = Y	green = G	red = R	black = B	white = W

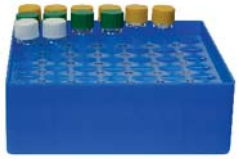
volume	size	blue glass	green glass
2 ml	14 x 26 mm	G075*-14/026-B	G075*-14/026-G
4 ml	14 x 45 mm	G075*-14/045-B	G075*-14/045-G
7.5 ml	17 x 60 mm	G075*-17/060-B	G075*-17/060-G

Polypropylene storage boxes

Polypropylene storage boxes with or without alpha-numeric coding for vials up to 14 mm diameter
- ☛ cold/and heat resistant -100 to +121°C
- ☛ Base available in six colours. Lid transparent.
- ☛ Base and lid available in solid black (BB) for light sensitive samples.

Storage box 130 x 130 mm, with alpha-numeric coding





8235*-13045C-12/81	8235*-13050C-16/49
for vials with ø 12 mm and a maximum height of 45 mm, room for 81 vials	for vials with ø 16.5 mm and a maximum height of 50 mm, room for 49 vials

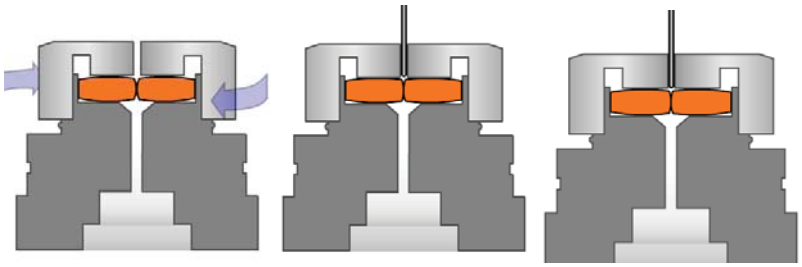
Storage box 67 x 67 mm

8235*-06745-14/16
for vials with ø 14 mm and a maximum height of 60 mm, room for 16 vials

*** Storage box colours**
NB = neon blue
NG = neon green
NO = neon orange
NR = neon red
NY = neon yellow
BB = black/black

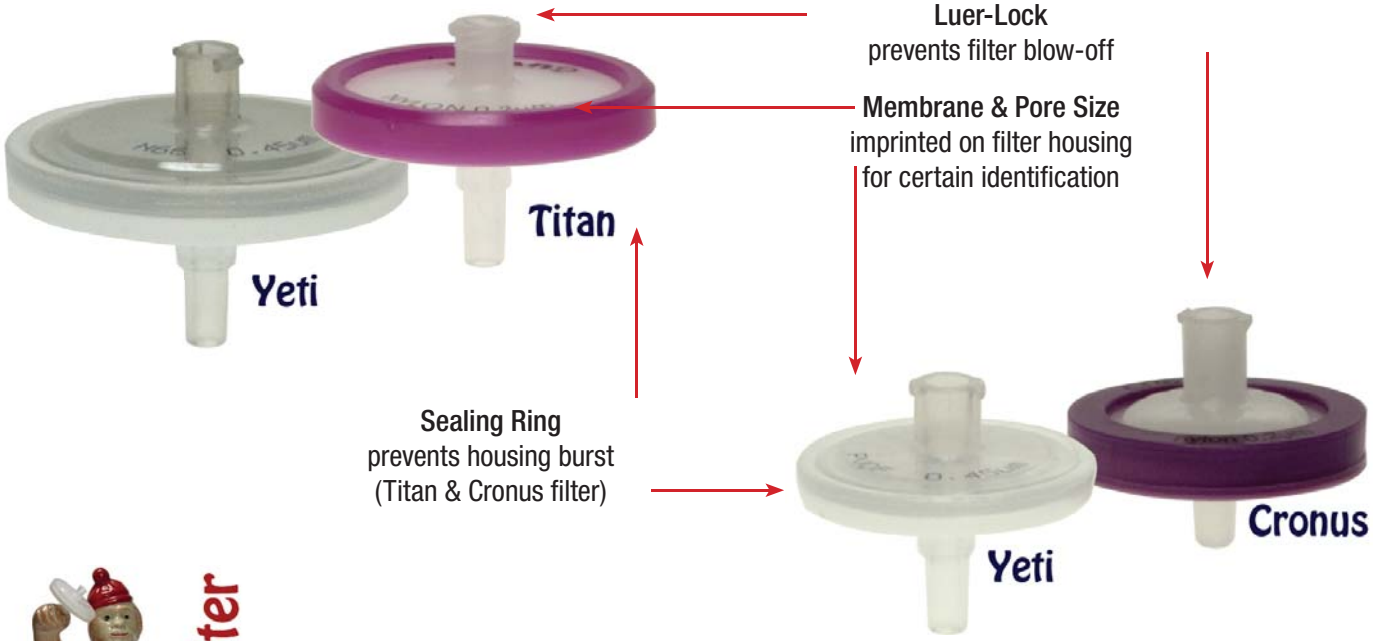
GC Septum

- ☛ formed GC septum for temperatures ≤ 400°C
- ☛ excellent durability: 1000 injections at 400 °C
- ☛ good overall life and reduced coring due to centre hole
- ☛ material conditioned, reduced Septum bleed and minimal siloxane contamination



G011-ZIPS	11 mm GC septum, with centre hole, red

HPLC Syringe filter and a ccessory



All Yeti filter diameters and membranes are available with pore sizes from 0.1 µm to 10 µm.

For conventional Chromatography we recommend a pore size of 0.45 µm, for UHPLC pore sizes from 0.22 µm or 0.1 µm.

Which filter diameter for which sample volume?

	sample volume ≤ 2 ml sample loss < 7.5 µl 4 mm filter		**sample volume ≤ 100 ml** sample loss < 50 µl 25 mm filter
	sample volume ≤ 10 ml sample loss < 25 µl 13 mm filter		**sample volume ≤ 150 ml** sample loss < 100 µl 30 mm filter
	sample volume ≤ 20 ml sample loss < 30 µl 17 mm filter		**sample volume ≤ 200 ml** sample loss < 137 µl 33 mm filter

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HPLC syringe filter

Which pore size?

Which pore size for which application?

- HPLC → **0.45 µm**
- cold sterilisation, UHPLC → **0.2 µm**

Filtration of:

- aqueous solvent
  - protein sample? yes → **Membrane type**: **Regenerated Cellulose, Cellulose Acetate**
    - ☛ *lowest protein absorption*
  - protein sample? no → **Nylon, Polyether sulphone, Polypropylene**
    - ☛ *inert Membrane*
    - ☛ *low extraction of substances*
- organic solvent, halogenated hydrocarbons, basic solvents → **PTFE**
  - ☛ *very inert*
- mixed applications → **Polypropylene**
- biochemical applications → **PVDF**

Membranes and their properties Tabular view *detailed description of membranes see next page*	Nylon (N)	Polyether sulphone (PES)	Polypropylen (PP)	PTFE Hydrophobic (P)	PTFE Hydrophilic (P-x/HY)	Poly-Vinyliden-Di-Fluoride (PVDF)	Regenerated Cellulose (RC)	Cellulose Acetate (CA) Mixed Cellulose Ester (MCE)
alcohol	x	x	x	x	x	x		
aromatic compounds				x	x			
bases	x							
benzoic hydrocarbons				x	x			
bio molecules						x	x	
solvents				x	x			
hexane				x	x			
organic solvent				x	x			
peptide		x				x	x	
proteins		x				x	x	
weak acids	x			x	x	x		
strong bases		x		x	x			
strong acids				x	x			
THF	x			x	x			
water	x		x		x		x	
aqueous solvents	x		x		x		x	
aqueous samples	x		x		x		x	x

Yeti HPLC Syringe Filter

- **Luer Lock**
  eliminates Filter blow-off
- **Membrane & Porosity imprinted on filter housing**
  for certain identification
- **white Sealing Ring**
  prevents housing bursts

ø 33 mm
≤ 200 ml
sample volume

ø 13 mm
≤ 10 ml
sample volume

ø 25 mm
≤ 100 ml
sample volume

Membrane	available pore sizes									
MCE *Mixed Cellulose Ester*	0.1 µm	0.22 µm	0.45 µm	-	0.8 µm	1.0 µm	-	3.0 µm	5.0 µm	-
Nylon	0.1 µm	0.22 µm	0.45 µm	-	0.8 µm	1.0 µm	-	3.0 µm	5.0 µm	10 µm
PES	0.1 µm	0.22 µm	0.45 µm	0.65 µm	0.8 µm	-	1.2 µm	-	-	-
PTFE Hydrophobic	0.1 µm	0.22 µm	0.45 µm	-	-	1.0 µm	-	3.0 µm	5.0 µm	10 µm
PTFE Hydrophilic	0.1 µm	0.22 µm	0.45 µm	-	-	-	-	-	-	-
PVDF *Poly-Vinyliden-Di -Fluoride*	0.1 µm	0.22 µm	0.45 µm	0.65 µm		1.0 µm	-	3.0 µm	5.0 µm	-
Product Code for Pore Sizes	**-1**	**-2**	**-4**	**-6**	**-8**	**-10**	**-12**	**-30**	**-50**	**-100**

Order information: replace «x» with the pore size of your choice, see table above

Membrane	13 mm	25 mm	33 mm
MCE	8813Y-MCE-x	8825Y-MCE-x	8833Y-MCE-x
Nylon	8813Y-N-x	8825Y-N-x	8833Y-N-x
PES	8813Y-PES-x	8825Y-PES-x	8833Y-PES-x
PTFE Hydrophobic	8813Y-P-x	8825Y-P-x	8833Y-P-x
PTFE Hydrophilic	8813Y-P-x/HY	8825Y-P-x/HY	8833Y-P-x/HY
PVDF (Poly-Vinyliden-Di-Fluoride)	8813Y-PV-x	8825Y-PV-x	8833Y-PV-x
pack size	pack of 250 pcs.	pack of 200 pcs.	pack of 125 pcs.

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HPLC syringe filter with Nylon membrane

for the filtration of:
water, aqueous solvents, alcohol, bases, aromatic hydrocarbons, THF

Nylon is a hydrophilic and very pure membrane. Mechanically it is very robust. It is suited for the filtration of aqueous as well as organic solvents but not for protein samples with high non specific binding affinities.

incompatible with:
acids, halogenated solvents, protein samples with high non-specific binding affinities

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore size, Filter colour / brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.1 µm Yeti	-	8813Y-N-1 *250 pcs./pack*	-	8825Y-N-1 *200 pcs./pack*	-	8833Y-N-1 *125 pcs./pack*
0.22 µm Yeti	-	8813Y-N-2 *250 pcs./pack*	-	8825Y-N-2 *200 pcs./pack*	-	8833Y-N-2 *125 pcs./pack*
0.22 µm Cronus	8804C-N-2 *100 pcs./pack*	8813C-N-2 *100 pcs./pack*	-	8825C-N-2 *100 pcs./pack*	-	-
0.22 µm Titan	8804-N-2 *100 pcs./pack*	-	8817-N-2 *200 pcs./pack*	-	8830-N-2 *100 pcs./pack*	-
0.45 µm Yeti	-	8813Y-N-4 *250 pcs./pack*	-	8825Y-N-4 *200 pcs./pack*	-	8833Y-N-4 *125 pcs./pack*
0.45 µm Cronus	8804C-N-4 *100 pcs./pack*	8813C-N-4 *100 pcs./pack*	-	8825C-N-4 *100 pcs./pack*	-	-
0.45 µm Titan	8804-N-4 *100 pcs./pack*	-	8817-N-4 *200 pcs./pack*	-	8830-N-4 *100 pcs./pack*	-
0.8 µm Yeti	-	8813Y-N-8 *250 pcs./pack*	-	8825Y-N-8 *200 pcs./pack*	-	8833Y-N-8 *125 pcs./pack*
1.0 µm Yeti	-	8813Y-N-10 *250 pcs./pack*	-	8825Y-N-10 *200 pcs./pack*	-	8833Y-N-10 *125 pcs./pack*
1.5 µm Titan	-	-	-	-	8830-N-15 *100 pcs./pack*	-
3.0 µm Yeti	-	8813Y-N-30 *250 pcs./pack*	-	8825Y-N-30 *200 pcs./pack*	-	8833Y-N-30 *125 pcs./pack*
5.0 µm Yeti	-	8813Y-N-50 *250 pcs./pack*	-	8825Y-N-50 *200 pcs./pack*	-	8833Y-N-50 *125 pcs./pack*
5.0 µm Titan	-	-	-	-	8830-N-50 *100 pcs./pack*	-
10 µm Yeti	-	8813Y-N-100 *250 pcs./pack*	-	8825Y-N-100 *200 pcs./pack*	-	8833Y-N-100 *125 pcs./pack*

HPLC syringe filter with Polyether sulphone membrane

for the filtration of: strong bases, alcohol, proteins, peptide

The Polyether sulphone membrane is hydrophilic with very low protein binding and a high filtration rate, especially suited for Ion Chromatography

incompatible with:
Acids, ketone, ester, halogens or benzoic hydrocarbons

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore size* *Filter colour / brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.1 µm Yeti	-	8813Y-PES-1 *250 pcs./pack*	-	8825Y-PES-1 *200 pcs./pack*	-	8833Y-PES-1 *125 pcs./pack*
0.22 µm Yeti	-	8813Y-PES-2 *250 pcs./pack*	-	8825Y-PES-2 *200 pcs./pack*	-	8833Y-PES-2 *125 pcs./pack*
0.22 µm Titan	-	-	8817-PES-2 *200 pcs./pack*	-	8830-PES-2 *100 pcs./pack*	-
0.45 µm Yeti	-	8813Y-PES-4 *250 pcs./pack*	-	8825Y-PES-4 *200 pcs./pack*	-	8833Y-PES-4 *125 pcs./pack*
0.45 µm Titan	-	-	8817-PES-4 *200 pcs./pack*	-	8830-PES-4 *100 pcs./pack*	-
0.65 µm Yeti	-	8813Y-PES-6 *250 pcs./pack*	-	8825Y-PES-6 *200 pcs./pack*	-	8833Y-PES-6 *125 pcs./pack*
0.8 µm Yeti	-	8813Y-PES-8 *250 pcs./pack*	-	8825Y-PES-8 *200 pcs./pack*	-	8833Y-PES-8 *125 pcs./pack*
1.2 µm Yeti	-	8813Y-PES-12 *250 pcs./pack*	-	8825Y-PES-12 *200 pcs./pack*	-	8833Y-PES-12 *125 pcs./pack*

HPLC syringe filter with Polypropylene membrane

for the filtration of: water, aqueous samples, alcohols

The Polypropylene membrane is hydrophilic like Nylon with a flow rate like the nylon filter; the protein recovery is 92 %. Polypropylene filter may be used as universal filter.

incompatible with:
Hexane, toluole, benzol

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore size* *Filter colour / brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.22 µm Titan	-	-	8817-PP-2 *200 pcs./pack*	-	8830-PP-2 *100 pcs./pack*	-
0.45 µm Titan	-	-	8817-PP-4 *200 pcs./pack*	-	8830-PP-4 *100 pcs./pack*	-

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HPLC syringe filter with PTFE membrane

for the filtration of: Solvents, organic solvents, strong acids & bases aromatic compounds

The hydrophobic PTFE Membrane is chemically resistant to organic solvents, strong acids and bases. PTFE may only be used with aqueous samples when the PTFE membrane is preconditioned with ethanol or methanol.

The Yeti filter is also available with a hydrophilic PTFE membrane which can be used with water, aqueous samples and aqueous solvents.

incompatible with: *Hydrophobic PTFE with aqueous samples without pre-wetting of filter*

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore Size* *Filter Colour / Brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.1 µm Yeti Hydrophilic (HY)	-	8813Y-P-1 8813Y-P-1/HY *250 pcs./pack*	-	8825Y-P-1 8825y-P-1/HY *200 pcs./pack*	-	8833Y-P-1 8833Y-P-1/HY *125 pcs./pack*
0.22 µm Yeti Hydrophilic (HY)	-	8813Y-P-2 8813Y-P-2/HY *250 pcs./pack*	-	8825Y-P-2 8825y-P-2/HY *200 pcs./pack*	-	8833Y-P-2 8833Y-P-2/HY *125 pcs./pack*
0.22 µm Cronus	8804C-P-2 *100 pcs./pack*	8813C-P-2 *100 pcs./pack*	-	8825C-P-2 *100 pcs./pack*	-	-
0.22 µm Titan	8804-P-2 *100 pcs./pack*	-	8817-P-2 *200 pcs./pack*	-	8830-P-2 *100 pcs./pack*	
0.45 µm Yeti Hydrophilic (HY)	-	8813Y-P-4 8813Y-P-4/HY *250 pcs./pack*	-	8825Y-P-4 8825Y-P-4/HY *200 pcs./pack*	-	8833Y-P-4 8833Y-P-4/HY *125 pcs./pack*
0.45 µm Cronus	8804C-P-4 *100 pcs./pack*	8813C-P-4 *100 pcs./pack*	-	8825C-P-4 *100 pcs./pack*	-	-
0.45 µmTitan	8804-P-4 *100 pcs./pack*		8817-P-4 *200 pcs./pack*		8830-P-4 *100 pcs./pack*	-
1.0 µm Yeti	-	8813Y-P-10 *250 pcs./pack*	-	8825Y-P-10 *200 pcs./pack*	-	8833Y-P-10 *125 pcs./pack*
1.0 µm Titan	-	-	-	-	8830-P-10 *100 pcs./pack*	-
3.0 µm Yeti	-	8813Y-P-30 *250 pcs./pack*	-	8825Y-P-30 *200 pcs./pack*	-	8833Y-P-30 *125 pcs./pack*
5.0 µm Yeti	-	8813Y-P-50 *250 pcs./pack*	-	8825Y-P-50 *200 pcs./pack*	-	8833Y-P-50 *125 pcs./pack*
10 µm Yeti	-	8813Y-P-100 *250 pcs./pack*	-	8825Y-P-100 *200 pcs./pack*	-	8833Y-P-100 *125 pcs./pack*

HPLC syringe filter with Poly-Vinyliden-Di-Fluoride (PVDF) membrane

for the filtration of: Alcohol, weak acids, proteins, peptides and other bio molecules

The Poly-Vinyliden-Di-Fluoride (PVDF) membrane is preferably used for biological samples, protein adsorption higher than with Regenerated Cellulose, not recommended for GC samples or GC typical solvents

incompatible with: *strong acids, bases, ketone*

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore size* *Filter colour / brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.1 µm Yeti		8813Y-PV-1 *250 pcs./pack*		8825Y-PV-1 *200 pcs./pack*		8833Y-PV-1 *125 pcs./pack*
0.22 µm Yeti		8813Y-PV-2 *250 pcs./pack*		8825Y-PV-2 *200 pcs./pack*		8833Y-PV-2 *125 pcs./pack*
0.22 µm Cronus	8804C-PV-2 *100 pcs./pack*	8813C-PV-2 *100 pcs./pack*				
0.22 µm Titan	8804-PV-2 *100 pcs./pack*		8817-PV-2 *200 pcs./pack*		8830-PV-2 *100 pcs./pack*	
0.45 µm Yeti		8813Y-PV-4 *250 pcs./pack*		8825Y-PV-4 *200 pcs./pack*		8833Y-PV-4 *125 pcs./pack*
0.45 µm Cronus	8804C-PV-4 *100 pcs./pack*	8813C-PV-4 *100 pcs./pack*		8825C-PV-4 *100 pcs./pack*		
0.45 µm Titan	8804-PV-4 *100 pcs./pack*		8817-PV-4 *200 pcs./pack*		8830-PV-4 *100 pcs./pack*	
0.65 µm Yeti		8813Y-PV-6 *250 pcs./pack*		8825Y-PV-6 *200 pcs./pack*		8833Y-PV-6 *125 pcs./pack*
1.0 µm Yeti		8813Y-PV-10 *250 pcs./pack*		8825Y-PV-10 *200 pcs./pack*		8833Y-PV-10 *125 pcs./pack*
3.0 µm Yeti		8813Y-PV-30 *250 pcs./pack*		8825Y-PV-30 *200 pcs./pack*		8833Y-PV-30 *125 pcs./pack*
5.0 µm Yeti		8813Y-PV-50 *250 pcs./pack*		8825Y-PV-50 *200 pcs./pack*		8833Y-PV-50 *125 pcs./pack*

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HPLC syringe filter

HPLC syringe filter with Mixed Cellulose Ester (MCE) or Cellulose Acetate (CA) membrane

for the filtration of: aqueous samples

low protein-adsorption, hydrophilic membrane

incompatible with: *organic solvents*

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore Size* *Filter Colour / Brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.1 µm Yeti	-	8813Y-MCE-1 *250 pcs./pack*	-	8825Y-MCE-1 *200 pcs./pack*	-	8833Y-MCE-1 *125 pcs./pack*
0.22 µm Yeti	-	8813Y-MCE-2 *250 pcs./pack*	-	8825Y-MCE-2 *200 pcs./pack*	-	8833Y-MCE-2 *125 pcs. pack*
0.22 µm Titan	8804-CA-2 *100 pcs./pack*	-	8817-CA-2 *200 pcs./pack*	-	8830-CA-2 *100 pcs./pack*	-
0.45 µm Yeti	-	8813Y-MCE-4 *250 pcs./pack*	-	8825Y-MCE-4 *200 pcs./pack*	-	8833Y-MCE-4 *125 pcs./pack*
0.45 µm Cronus	-	8813C-CA-4 *100 pcs./pack*	-	8825C-CA-4 *100 pcs./pack*	-	-
0.45 µm Titan	8804-CA-4 *100 pcs./pack*	-	8817-CA-4 *200 pcs./pack*	-	8830-CA-4 *100 pcs./pack*	-
0.8 µm Yeti	-	8813Y-MCE-8 *250 pcs./pack*	-	8825Y-MCE-8 *200 pcs./pack*	-	8833Y-MCE-8 *125 pcs./pack*
1.0 µm Yeti	-	8813Y-MCE-10 *250 pcs./pack*	-	8825Y-MCE-10 *200 pcs./pack*	-	8833Y-MCE-10 *125 pcs./pack*
3.0 µm Yeti	-	8813Y-MCE-30 *250 pcs./pack*	-	8825Y-MCE-30 *200 pcs./pack*	-	8833Y-MCE-30 *125 pcs./pack*
5.0 µm Yeti	-	8813Y-MCE-50 *250 pcs./pack*	-	8825Y-MCE-50 *200 pcs./pack*	-	8833Y-MCE-50 *125 pcs./pack*

HPLC syringe filter with Regenerated Cellulose membrane

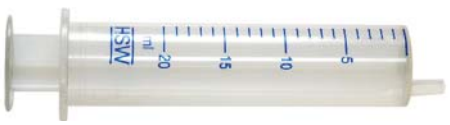
for the filtration of: Proteins, peptides and other biomolecules

The Regenerated Cellulose membrane has a low protein-adsorption, highly hydrophilic surface, is especially suited for the filtration of proteins and biological samples and has a better chemical resistance than Cellulose-Acetate

incompatible with: *Acids, chloroform, THF*

Filtration volume	**up to 2 ml**	**up to 10 ml**	**up to 30 ml**	**up to 100 ml**	**up to 150 ml**	**up to 200 ml**
Sample loss	**< 15 µl**	**< 25 µl**	**< 29 µl**	**< 50 µl**	**< 137 µl**	**< 137 µl**
Filter ø *Pore size* *Filter colour / brand*	**4 mm**	**13 mm**	**17 mm**	**25 mm**	**30 mm**	**33 mm**
0.22 µm Titan	8804-RC-2 *100 pcs./pack*		8817-RC-2 *200 pcs./pack*		8830-RC-2 *100 pcs./pack*	-
0.45 µm Cronus	8804C-RC-4 *100 pcs./pack*	8813C-RC-4 *100 pcs./pack*		8825C-RC-4 *100 pcs./pack*		-
0.45 µm Titan	8804-RC-4 *100 pcs./pack*		8817-RC-4 *200 pcs./pack*		8830-RC-4 *100 pcs./pack*	-

Polypropylene syringe with luer slip

	volume	**product no.**
	1 ml with luer slip	G899-PP01
	3 ml with luer slip	G899-PP03
	5 ml with luer slip	G899-PP05
	10 ml with luer slip	G899-PP10
	20 ml with luer slip	G899-PP20
	50 ml with luer slip	G899-PP50

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Glass syringes with luer lock and syringe valve

PTFE Syringe valve with luer-tip

8075-V-LuT

PTFE Syringe valve, for syringes with luer tip

8SV3-1915

Push-button luer-lock valve for luer lock or luer tip syringe

Push-button valve 8SV3-1910 for syringe with luer-lock

8SV3-1910

Push-button valve with luer lock connection to use with syringes with removable needle or luer lock for syringe volumes from 5 ml - 2 l

Push-pull valve 8SV3-1907 for syringes with removable needle

8SV3-1907

Push-pull with luer-lock connection to use with syringes with removable needle and syringe volume from 25 µl - 2,5 ml

Push-pull valve 8SV3-1905 with needle for syringes with removable needle

8SV3-1905

Push-pull valve with removable needle with conical needle tip to use with syringes with removable needle and syringe volumes from 25 µl - 2,5 ml

Glass syringe with luer lock

volume	product no.
1 ml	8S01-MDF-LL-GT
2.5 ml	8S2.5-MDF-LL-GT
5 ml	8S05-MDR-LL-GT
10 ml	8S10-MDR-LL-GT
25 ml	8S25-MDR-LL-GT
50 ml	8S50-MDR-LL-GT
100 ml	8S100-MDR-LL-GT

Gas-tight syringe with luer tip

volume	product no.
50 µl	8S50-GT-LS
100 µl	8S100-GT-LS
250 µl	8S250-GT-LS
500 µl	8S500-GT-LS
1 ml	8S1M-GT-LS
2.5 ml	8S2.5M-GT-LS

Gas-tight syringe with luer lock push-button valve 8SV3-1910

volume	product no.
5 ml	8S5M-GT-LL-PBV
10 ml	8S10M-GT-LL-PBV
25 ml	8S25M-GT-LL-PBV
50 ml	8S50M-GT-LL-PBV
100 ml	8S100M-GT-LL-PBV

Gas-tight syringes with mounted valve 8SV3-1907

volume	product no.
1 ml	8S1M-GT-LL-PPV
2.5 ml	8S2.5M-GT-LL-PPV

Gas-tight syringes with mounted valve 8SV3-1905

volume	product no.
50 µl	8S50R-GT-PPVN
100 µl	8S100R-GT-PPVN
250 µl	8S250R-GT-PPVN
500 µl	8S500R-GT-PPVN
1 ml	8S1R-GT-PPVN
2.5 ml	8S2.5R-GT-PPVN

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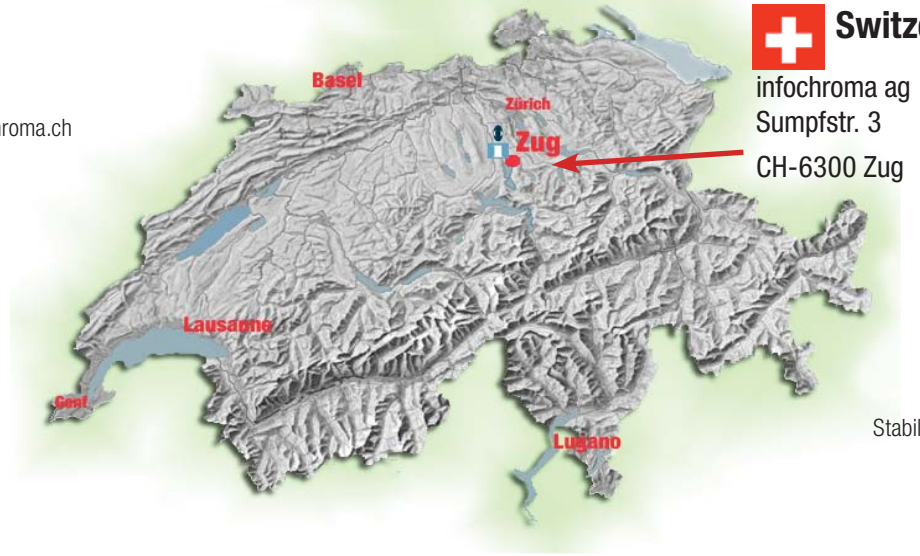

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