



Chromatography Supplies



- /// **HPLC / Autosampler Vials**
- /// **Micro Storage (U- Tube Vials)**
- /// **Limited Volume Inserts**
- /// **Shell Vials**
- /// **VOA / EPA Vials**
- /// **Headspace Vials**
- /// **Storage Vials**
- /// **Gas Tight Syringe**
- /// **Zero Dead Volume**



Colpak®

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About us

Top Syringe Mfg Co (P) Ltd is a leading manufacturer of glass syringes and glass tube engineering products. The group, established in 1964, has the core technology base of Glass tube engineering making glass syringes from 0.25ml to 100ml.

The company has 2 manufacturing locations in India; one is in Dahisar Mumbai & the other is at Alandi Pune. These facilities meet all the regulatory / quality guidelines for products manufactured. Products are regularly exported across the globe to over 30 countries including regulatory markets.

Within our world class facility we do manufacture our core product Glass Syringes which are used for various applications like in Laboratory, Medical, Industrial, Veterinary etc. The facility also has fairly big share in production of Colpak® – Chromatography Consumables like Auto Sampler / Head Space Vials, caps & Septa's with our regular on-going production of Branded & OEM job work for Laboratory Glass ware like Test Tubes, Culture Tubes & Glass Micro Capillaries. The facility has its own injection molding machines for the screw caps and other plastic products. The Facility is also house to its own rubber mixing mill and processing of the liners & septas.

We have also indigenously developed & established ourselves into the



manufacturing of the specialized segment of Gas Tight Syringes & Microliter Syringes (Upcoming), to be known for our precision as well with quantum of production.

We are well supported by Our Ecommerce team which forms a strong backbone for our global supplies across the world for quality Glass products manufactured, we have web support for 13+ languages across the world with our ecommerce partners like Amazon, Alibaba, Indiamart, etc. helping us distribute our products across the globe.

Our expertise developed over the years in Glass tube engineering has strengthen with our strong skilled team who manufacture and carve the finish glass product with their years of experience & world class technology i.e. machines to support & expedite the production for growing market's needs.

The group companies manufacture glass pharmaceutical packaging product and laboratory heating and cooling equipments.

Colpak®



Colpak® HPLC / Autosampler Vials

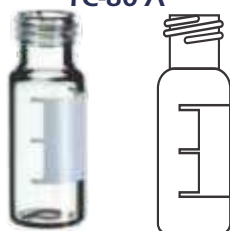
ND 8 Screw Neck Vials 12 x 32mm

Why Select 8mm Screw Neck Vials?

8mm (8-425) screw neck vials are the original smaller opening autosampler vials manufacture with USP type 1 glass. They are designed to work in a variety of autosamplers requiring narrow neck vials.



TC-80 A



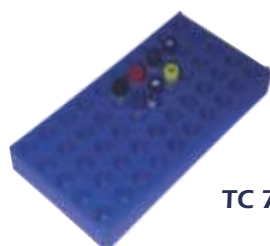
TC-80 B



TC-80 D



8mm Screw
Septas & Caps



TC 70

Colpak® 8mm Screw Neck Vials

Catalog No	Description	Packing
TC-80 A	12 x 32mm, 1st Hydrol Class Clear Glass, Small Opening	100
TC-80 B	12 x 32mm, 1st Hydrol Class Clear Glass, Small Opening ,Label + Filling Lines	100
TC-80 C	12 x 32mm, Amber Glass, Small Opening	100
TC-80 D	12 x 32mm, Amber Glass, Small Opening, Label + Filling Lines	100

Colpak® PP 8mm Screw Seals

Catalog No	Description	Packing
TC-84 KA	PP 8mm Black Knurled Screw Cap, 5.5mm Center Hole Silicone White / PTFE Red, Thickness 1.5mm, Temperature Resistant -60°C to 200°C	100
TC-84 KD	PP 8mm Black Knurled Screw Cap, 5.5mm Center Hole Silicone White / PTFE Light Blue, Thickness 1.5mm, Temperature Resistant -60°C to 200°C	100

Colpak® Vials Rack

Catalog No	Description	Packing
TC-70	PP Vial Rack 182 x 92 x 16mm, 50 cavities with 12mm diameter	1

ND9 Short Screw Thread Vials 12 x 32mm

Why Select 9mm Short Screw Thread Vials?

9mm screw thread vials have a 9-425 GPI thread and the closure is dimensionally equivalent to 11mm crimp cap vials. This means that they can be used in any autosampler that uses 11mm crimp cap vials. 9mm screw caps have an advantage over 11mm crimp caps because 9mm screw caps can easily be applied and removed by hand and they can be reused. All vials are manufacture with USP type 1 glass.

Colpak® 9mm Short Screw Thread Vials, Wide Opening

Catalog No	Description	Packing
TC-90 A	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening	100
TC-90 B	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening, Label + Filling Lines	100
TC-90 C	12 x 32mm, Amber Glass, 1st Hydrol Class, Wide Opening	100
TC-90 D	12 x 32mm, Amber Glass, 1st Hydrol Class, Wide Opening, Label + Filling Lines	100
TC-91 ERB	12 x 32mm, PP 9mm Micro-Vial, Transparent	100



TC-90 A



TC-90 B

Colpak® 9mm Short Screw Thread Septas & Caps

Catalog No	Description	Packing
TC-94 BA	PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole Silicone White / PTFE Red	100
TC-94 BB	PP Blue Short Screw Thread Cap, 6mm Center Hole PTFE Red / Silicone White / PTFE Red	100
TC-94 BG	PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole Silicone White /PTFE Red with Pre-Slit	100
TC-94 BD	PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole Silicone White /PTFE Light Blue	100
TC-94 EG	PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole Silicone White /PTFE Light Blue with Pre-Slit	100



TC-90 D



TC - 91 ERB

Colpak® 9mm PP Blue Knurled Short Screw Thread Cap Bonded Septas

Catalog No	Description	Packing
TC-94 BOA	PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole with Bonded Silicone White / PTFE Red	100
TC-94 BOG	PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole with Bonded Silicone White / PTFE Red Pre-Slit	100



9mm Short Screw
Threads
Septas & Caps

Colpak® 9mm Pre-assembled Vials with Cap & Septa

Catalog No	Description	Packing
TC90AP94BOG	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening, Pre Screwed PP Blue Knurled Short Screw Thread Cap, 6mm Center Hole with Bonded Silicone White /PTFE Red with Pre-Slit	100

*Other varieties available on request

ND 11 Snap Ring Vials 12 x 32mm

Why Select 11mm Snap Ring Vials?

11mm snap caps provide a secure seal that minimises evaporation, even with volatile samples. Snap caps are often more convenient than crimp caps as they can easily be applied and removed by hand. An audible click ensures a secure seal has been formed and that the cap is correctly aligned. Snap/crimp vials can be closed with either snap caps or crimp caps. All vials are manufacture with USP type 1 glass.



TC-110 SA



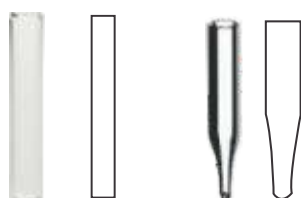
TC-110 SB



TC-110 SD



**11mm Snap Ring
Septas & Caps**



TC 60 A

TC 60 B



TC 60 C

TC 60 D

Colpak® 11mm Snap Ring Vials

Catalog No	Description	Packing
TC-110 SA	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening	100
TC-110 SB	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening, Label + Filling Lines	100
TC-110 SC	12 x 32mm, Amber Glass, Wide Opening	100
TC-110 SD	12 x 32mm, Amber Glass, 1st Hydrol Class, Wide Opening, Label + Filling Lines	100

Colpak® 11mm Snap Ring Seals

Catalog No	Description	Packing
TC-112 SA	PP Clear 6mm Snap Ring Cap, Silicone White / PTFE Red	100
TC-112 SG	PP Clear 6mm Snap Ring Cap, Pre-Slit Silicone White / PTFE Red	100
TC-112 SI	PP Clear 6mm Snap Ring Closed Cap with Star Membrane	100

Colpak® Micro Inserts

Catalog No	Description	Packing
TC-60 A	0.2ml Micro-Insert, 31 x 6mm, Clear Glass, 1st Hydrol Class, Flat Bottom, Fill Vol. 0.35	100
TC-60 B	0.1ml Micro-Insert, 31 x 6mm, Clear Glass, 1st Hydrol Class, Conical, 12mm Top, Fill Vol. 0.30 (Coming Soon)	100
TC-60 C	0.1ml Micro-Insert, 31 x 6mm, Clear Glass, 1st Hydrol Class, Conical, 12mm Top, Fill Vol. 0.25 (Coming Soon)	100
TC-60 D	0.1ml Micro-Insert, 29 x 5.7mm, Clear Glass, 1st Hydrol Class, Mandrel Point with assembled Plastic Spring, Fill Vol. 0.20	100

ND11 Crimp Neck Vials 12 x 32mm

Why Select 11mm Crimp Neck Vials?

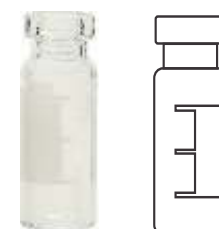
Crimp caps provide the tightest seal, reducing the chance of sample evaporation. The 12x32mm crimp vials and 11mm aluminium crimp caps are economical and easy to use with crimping tools. All vials are manufacture with USP type 1 glass.

Colpak® 11mm Crimp Neck Vials

Catalog No	Description	Packing
TC-110 A	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening	100
TC-110 B	12 x 32mm, Clear Glass, 1st Hydrol Class, Wide Opening, Label + Filling Lines	100
TC-110 C	12 x 32mm, Amber Glass, Wide Opening	100
TC-110 D	12 x 32mm, Amber Glass, 1st Hydrol Class, Wide Opening, Label + Filling lines,	100



TC-110 A



TC-110 B



TC-110 D

Colpak® 11mm Aluminium Septas & Caps

Catalog No	Description	Packing
TC-117	Aluminium Cap 5.5mm Center Hole	100
TC-117 A	Aluminium Cap Clear 5.5mm Center Hole Silicone White / PTFE Red	100
TC-117 B	Aluminium Cap Clear 5.5mm Center Hole PTFE Red / Silicone White / PTFE Red	100
TC-117 G	Aluminium Cap Clear 5.5mm Center Hole Pre-Slit Silicone White /PTFE Red	100

Colpak® 11mm Crimper

11mm Aluminum Septas & Caps



Easy and convenient handling

Chemically resistant surface finish especially designed for the application in labs

Hardened crimping jaws made of a special alloy that guarantees long life

Catalog No	Description	Packing
TC-119 A	Crimper for 11mm Aluminium Caps	1



ND 13 Screw Neck Vials 15 x 45mm

Why Select 13mm Screw Neck Vials?

13mm vials have a 13-425 GPI thread and can hold up to 4ml of sample. They are used by the Waters 48-position autosampler and many others. All vials are manufacture with USP type 1 glass.



TC-130 A



TC-130 B



TC-130 D

Colpak® 13mm Screw Neck Vials

Catalog No	Description	Packing
TC-130 A	4ml Clear Glass, 15 x 45mm, 1st Hydrol Class	100
TC-130 B	4ml Clear Glass, 15 x 45mm, 1st Hydrol Class, Label + Filling Lines	100
TC-130 C	4ml Amber Glass 15 x 45mm, 1st Hydrol Class	100
TC-130 D	4ml Amber Glass 15 x 45mm, 1st Hydrol Class, Label + Filling lines	100



13mm Screw
Septas & Caps

Colpak® 13mm Screw Seals

Catalog No	Description	Packing
TC-136 K	PP Black Screw Cap 8.5mm Center Hole, Silicone White /PTFE Red, 1.5mm Thickness, Temperature Resistant -60°C to 200°C	100

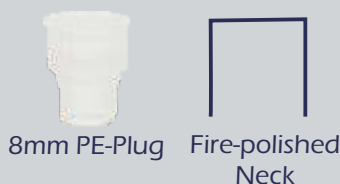
Colpak® Shell Vials

Why Select Shell Vials?

Shell vials feature thicker walls for safer sample handling. They are compatible with Waters WISP™ 48 and 96 style autosamplers. All shell vials are supplied with polyethylene plug closures – their tear-away design ensures excellent penetration and ventilation during sampling.



TC - 712 TC - 712DB



8mm PE-Plug Fire-polished
Neck

Catalog No	Description	Packing
TC-712	1ml Shell Vials, Clear Glass, 8.2mm x 40mm, 1st Hydrol Class, 8mm PE-Plug, Soft without insertion barrier for Micro-Insert	100
TC-712 A	1ml Shell Vial, 8.2mm x 40mm, Clear Glass, 1st Hydrol Class	100
TC-712 B	8mm PE-Plug, Transparent (Without Insertion Barrier)	100
TC-712 C	0.8ml Shell Vial Clear Glass, 8.2 X 30mm, (Without PE Plug)	100
TC-712 D	1ml Shell Vial, Amber, 8.2mm x 40mm, Clear Glass, 1st Hydrol Class	100
TC-712 DB	1ml Shell Vials, Amber Glass, 8.2mm x 40mm, 1st Hydrol Class, 8mm PE-Plug, Soft without insertion barrier for Micro-Insert	100

Also suitable for*

Waters

* waters is a Trademark of Waters India Pvt. Ltd.

Colpak® Limited Volume Inserts

Why Select Limited volume Inserts?

Limited volume inserts are an economical solution in sample analysis to reduce the use and waste of solvents and small samples. For optimum instrument performance and accurate test results, use the guides below to ensure that the correct insert is used with the appropriate autosampler vial. The Insert is neckless and always has to be used within a vial. The diameter of the Insert depends on the size of the vial opening. Inserts reduces the volume, so that the needle is capable of picking up even smallest sample quantities. The larger the top of an insert, the more the volume can be reduce.

Bottom Type

Insert Selection Guide



Flat



Conical



Mandrel

Solvent Compatibility

Glass is most commonly used for vial inserts. Polypropylene may be necessary when using pH sensitive samples.

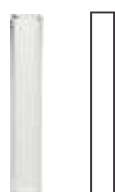
Targeted Dead Volume

Mandrel point inserts provide the smallest dead volume so are suitable when minimising sample loss is important. Conical bottom inserts provide sufficient sample extraction for Most applications.

Price

Flat bottom inserts are the cheapest and may be a viable option for limited sampling. Mandrel point vial inserts are the most expensive but they minimise sample loss and provide excellent Injection accuracy.

Catalog	Description	Packing	9mm Screw	11mm Crimp	11mm Snap
TC-60 A	0.2ml Micro-Insert, 6 x 31mm, Clear Glass, 1st Hydrol Class, Flat Bottom, Fill Vol. 0.35ml	100	✓	✓	✓
TC-60 B	0.1ml Micro-Insert, 6 x 31mm, Clear Glass, 1st Hydrol Class, Conical, 12mm Top, Fill Vol. 0.30ml (Coming Soon)	100	✓	✓	✓
TC-60 C	0.1ml Micro-Insert, 6 x 31mm, Clear Glass, 1st Hydrol Class, Conical, 15mm Top, Fill Vol. 0.25ml (Coming Soon)	100	✓	✓	✓
TC-60 D	0.1ml Micro-Insert, 5.7 x 29mm, Clear Glass, 1st Hydrol Class, Mandrel Point with assembled Plastic Spring, Fill Vol. 0.20ml (Coming Soon)	100	✓	✓	✓



TC 60 A



TC 60 B



TC 60 C



TC 60 D

Catalog No	Description	Packing
TC-60 A	0.2ml Micro-Insert, 31 x 6mm, Clear Glass, 1st Hydrol Class, Flat Bottom, Fill Vol. 0.35	100
TC-60 B	0.1ml Micro-Insert, 31 x 6mm, Clear Glass, 1st Hydrol Class, Conical, 12mm Top, Fill Vol. 0.30 (Coming Soon)	100
TC-60 C	0.1ml Micro-Insert, 31 x 6mm, Clear Glass, 1st Hydrol Class, Conical, 12mm Top, Fill Vol. 0.25 (Coming Soon)	100
TC-60 D	0.1ml Micro-Insert, 29 x 5.7mm, Clear Glass, 1st Hydrol Class, Mandrel Point with assembled Plastic Spring, Fill Vol. 0.20	100

Colpak® VOA / EPA Vials

Why Select Screw Neck Vials (EPA)

Broad range of EPA Vials in clear and amber glass. Volume of 20ml, 30ml, 40ml and 60ml available. All types of EPA vials can be delivered against a small surcharge with a certificate of cleanliness that might especially be needed for TOC analysis. EPA Vials can be obtained with any type of screw seal ND 24.

Colpak® 24mm Screw Neck Vials (EPA)

Catalog No	Description	Packing
TC2421A	20ml EPA Screw Neck Clear Vial, 27.5 x 57mm, 1st hydrol. class	100
TC2421C	20ml EPA Screw Neck Amber Vial, 27.5 x 57mm, 1st hydrol. class	100
TC2431A	30ml EPA Screw Neck Clear Vial, 27.5 x 72.5mm, 1st hydrol. class	100
TC2431C	30ml EPA Screw Neck Amber Vial, 27.5 x 72.5mm, 1st hydrol. class	100
TC2441A	40ml EPA Screw Neck Clear Vial, 27.5 x 95mm, 1st hydrol. class	100
TC2441C	40ml EPA Screw Neck Amber Vial, 27.5 x 95mm, 1st hydrol. class	100
TC2461A	60ml EPA Screw Neck Clear Vial, 27.5 x 140mm, 1st hydrol. class	100
TC2461C	60ml EPA Screw Neck Amber Vial, 27.5 x 140mm, 1st hydrol. class	100



All products are Class -100 products as per EPA Standard



Colpak® 24mm Septas & Caps

Catalog No	Description	Packing
TC244L	PP Screw Cap, white, centre hole, silicone white/PTFE beige, 45° shore A, 3mm	100



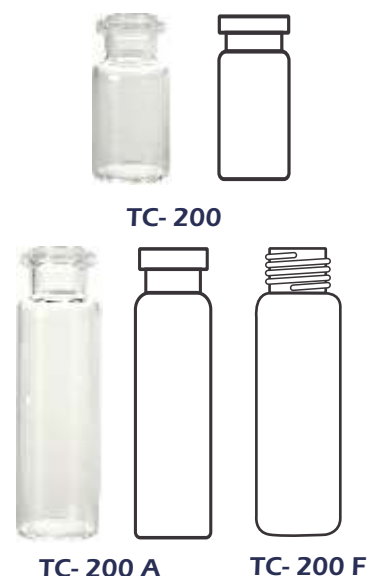
Colpak® Headspace Vials

Why Select Headspace Vials?

Colpak high quality headspace vials have a bevelled neck for a secure seal, uniform glass thickness for even heat distribution and a stable, strong design for ease of use. They are available with rounded or flat bottom profiles for accurate instrument compatibility. Use with the 20mm headspace caps, septas and seals. All vials are manufacture with USP type 1 glass.

Colpak® 20mm Headspace Vials

Catalog No	Description	Packing
TC-200	10ml Crimp Headspace Clear Vial, 22.5 x 46mm, Flat Bottom	100
TC-200 A	20ml Crimp Headspace Clear Vial, 22.5 x 75.5mm, Flat Bottom	100
TC-200 B	20ml Crimp Headspace Clear Vial, 22.5 x 75.5mm, Round Bottom	100
TC-200 C	10ml Crimp Headspace Clear Vial, 22.5 x 46mm, Round Bottom	100
TC-200 D	20ml Crimp Headspace Clear Vial, 22.5 x 75.5mm, Round Bottom with write on patch	100
TC-200 E	20 ml Headspace Clear Vial 75.5 x 23mm, Rounded Bottom for Perkin (Coming Soon)	100
TC-200 F	20 ml Precision Thread Vials, 75.5 x 22mm, Rounded Bottom	100



Colpak® 20mm Caps & Septas

Catalog No	Description	Packing
TC-202 L	Silicon White / PTFE Grey, Thicness 3mm, Temperature Resistant -60°C to 200°C	100
TC-206	10mm Center Hole, Crimp Top, Aluminum Cap	100
TC-206 L	10mm Center Hole, Crimp Top, Aluminium Cap with Silicone White / PTFE Gray	100
TC-208 K*	18 mm Magnetic Precision Thread Screw Cap, 8 mm Center Hole, with Silicone White / PTFE Sky Blue, 1.5 mm. (Coming Soon)	100



Colpak® 20mm Crimper

Catalog No	Description	Packing
TC-209 A	Crimper for 20mm Aluminium Caps	1

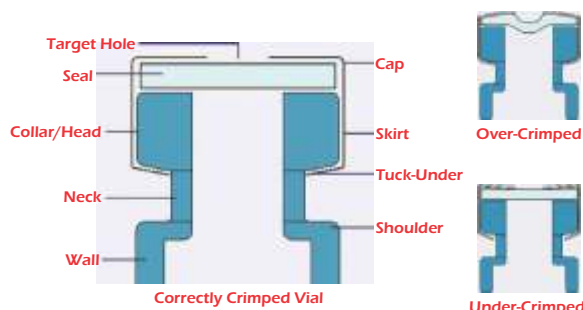


Correct Vial Crimping

Achieve accurate results with correctly Crimped vials

A correctly crimped vial is neither over-crimped nor under-crimped. Over-crimping may cause coring or poor septum resealing, while under-crimping can cause evaporation problems.

With proper adjustment of the vial crimpers, Perfect crimping can be achieved every time. When the vial is crimped perfectly, the cap should not be able to rotate and the septum should appear smooth and level.



Colpak® Storage Vials

Why Select Screw Neck Vials for Storage Purpose

Screw Neck Vials for Storage Purpose made out of 1st hydrol. class glass. Vials with different volumes are available. Clear amber glass Vials. Seals with different septa

Colpak® Screw Neck Storage Vials Caps & Septa



Catalog No	Description	Packing
TC80A	2ml Screw Neck Clear Vial, 11.6 x 32mm, 1st hydrol. class	100
TC80C	2ml Screw Neck Amber Vial, 11.6 x 32mm, 1st hydrol. class	100
TC804A	PP Screw Cap, Black, Closed top, Silicone white/PTFE Red, 45° shore A, 1.5mm	100
Catalog No	Description	Packing
TC130A	4ml Screw Neck Clear Vial, 14.7 x 45mm, 1st hydrol. class	100
TC130C	4ml Screw Neck Amber Vial, 14.7 x 45mm, 1st hydrol. class	100
TC1304K	PP Screw Cap, Black, Closed top, Silicone white/PTFE Red, 45° shore A,	100
Catalog No	Description	Packing
TC2420A	20ml Screw Neck Clear Vial, 27.5 x 57mm, 1st hydrol. class	100
TC2420C	20ml Screw Neck Amber Vial, 27.5 x 57mm, 1st hydrol. class	100
TC2430A	30ml Screw Neck Clear Vial, 27.5 x 72.5mm, 1st hydrol. class	100
TC2430C	30ml Screw Neck Amber Vial, 27.5 x 72.5mm, 1st hydrol. class	100
TC2440A	40ml Screw Neck Clear Vial, 27.5 x 95mm, 1st hydrol. class	100
TC2440C	40ml Screw Neck Amber Vial, 27.5 x 95mm, 1st hydrol. class	100
TC2460A*	60ml Screw Neck Clear Vial, 27.5 x 140mm, 1st hydrol. class	100
TC2460C*	60ml Screw Neck Amber Vial, 27.5 x 140mm, 1st hydrol. class	100
TC2404L	PP Screw Cap, Black, Closed top, Silicone white/PTFE Grey, 45° shore A, 1mm	100
TC2405A	PP Screw Cap, Black, Closed top, Silicone white/PTFE Grey, 45° shore A, 3mm	100

Colpak® Micro Storage Vial, (U- Tube Vial)

TC1650A	Micro Storage Vial, (U- Tube Vial) Amber, 0.5ml, Fill Volume 1ml, with Blue Closed Cap & liner	100
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TRÜTH Gas Tight Syringes







TRÜTH Gas Tight syringes are ideal for dispensing both liquids and gases. They have a precision-machined PTFE plunger tip which creates a leak-free seal. With the tight fit, the tip essentially wipes the interior of the syringe barrel free of sample. This feature is particularly useful with heterogeneous samples as it reduces the chance that a deposit will occur and cause the plunger to freeze.

TRÜTH Gas Tight Syringe Operating Parameters

Volume		5ml	10ml	25ml
Scale length, mm		60	60	60
Total scale divisions		100	100	100
Major graduations, mL		0.5	1.0	2.5
Minor graduations, mL		0.1	0.2	0.5
Sub-Minor graduations, mL		0.05	0.1	0.25
Maximum temperature	°C	115	115	115
	°F	239	239	239
Minimum temperature	°C	10	10	10
	°F	50	50	50
Maximum Pressure rating	bars	14	14	7
	psig	200	200	100



Syringe Terminations

Terminations	Abbreviations	Catalog			Autoclavable at 115°C
		5ml	10ml	25ml	
Luer Tip 	LT	42-08-01-73	42-09-01-74	42-30-01-75	Yes if disassembled
PTFE Luer Lock 	TLL	42-08-65-73	42-09-65-74	42-30-65-75	Yes if disassembled
UNF 	1/4"-28UNF	42-08-67-73	42-09-67-74	42-30-67-75	Yes if disassembled
Fixed Needle Beveled 	LTFN	42-08-66-73	42-09-66-74	-	No
Fixed Needle Blunt 	LTFNB	42-08-68-73	42-09-68-74	-	No
Zero Dead Volume 	ZDV	-	42-09-70-74	-	No

Zero Dead Volume:

The 6cm V6 syringe is designed and manufactured under stringent manufacturing and quality standards. These precision syringes are commonly used in clinical and analytical instrumentation where precision dispensing is critical. The syringes are able to handle your critical applications.

Physical

Length: 4.37"

End Cap: 1/4-28 Plunger Button: XL style

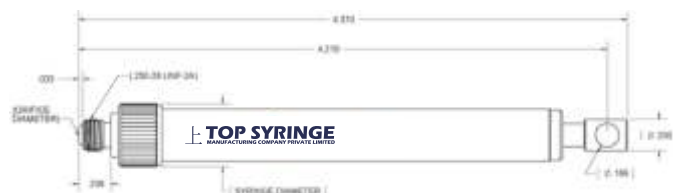
Optimal Internal Pressure 80 PSI

Environmental

Storage Temperature: 10°F to 180°F °C

Operating Temperature: 50°F to 104°F

Humidity: up to 100%



Chemical

Wetted Materials:

Borosilicate Glass, Kel-F (CTFE), Teflon (PTFE), UHMW (optional tip material), Lubricated with Medical grade lubricant

Performance

Cycle life:

PTFE Tip= up to 400K full stroke cycles* UHMW Tip = up to 800k full stroke cycles*

Accuracy/Precision

1% at 10% of total volume (with Di Water)

Colpak Autosampler Compatibility Chart		Screw Neck ND8	Short Screw Thread ND9	Crimp Neck ND11	Snap Ring ND11	Short Screw Thread ND13	Headspace ND20	Shell Vials
		TC-80 A TC-80 B TC-80 C TC-80 D	TC-90 A TC-90 B TC-90 C TC-90 AER TC-90 BER TC-91 ERB	TC-110 A TC-110 B TC-110 C TC-110 D TC-110 AER TC-110 BER	TC-110 SA TC-110 SB TC-110 SC TC-110 SD	TC-130 A TC-130 B TC-130 C TC-130 D	TC-200 TC-200 A	TC-712 TC-712 A TC-712 B
Agilent/ HP	1050	☐	☐	☐	☐			
Agilent/ HP	1090	☐	☐	☐	☐			
Agilent/ HP	1100	☐	☐	☐	☐			
Agilent/ HP	6850		☐	☐	☐			
Agilent/ HP	7670 A		☐	☐	☐			
Agilent/ HP	7671 A		☐	☐	☐			
Agilent/ HP	7673 Series		☐	☐	☐			
Agilent/ HP	7683		☐	☐	☐			
Agilent/ HP	7694 Headspace					☐		
Agilent/ HP	All Other Model		☐	☐	☐			
Alcott	718AL	☐	☐	☐	☐			
Alcott	719D	☐	☐	☐	☐			
Alcott	738	☐	☐	☐	☐			
Alltech	570	☐	☐	☐	☐	☐		
Alltech	580	☐	☐	☐	☐			
Beckman	501	☐	☐	☐	☐			
Beckman	502	☐	☐	☐	☐			
Beckman	507	☐	☐	☐	☐			
Beckman	Marthon	☐	☐	☐	☐			
Beckman	Promis	☐	☐	☐	☐			
Beckman	Triathlon	☐	☐	☐	☐			
Bruke	LC 51					☐		
Carlo Erba/Fison	42 Vial Tray		☐	☐	☐	☐		
Carlo Erba/Fison	AS 105		☐	☐	☐			
Carlo Erba/Fison	AS 800/ 8000	☐	☐	☐	☐			
Carlo Erba/Fison	HS 850						☐	
Dan	ALS 39.80	☐	☐	☐	☐			
Dan	ALS 86.80	☐	☐	☐	☐			
Dan	HS 39.50						☐	
Dan	HS 86.50						☐	
Dionex/Gynkote	Gina	☐	☐	☐	☐			
Dionex/Gynkote	ASI 100(2ml Tray)	☐	☐	☐	☐			
Dionex/Gynkote	AS 509(2ml Tray)	☐	☐	☐	☐			
Dynatech/Precisio	42 Vail Tray	☐	☐	☐	☐			
Dynatech/Precisio	LC 2000		☐					
Gerstel	MS 2	☐	☐	☐	☐			
Gilson	201					☐		
Gilson	202					☐		
Gilson	221					☐		
Gilson	222					☐		
Gilson	231/231XL	☐	☐	☐	☐			
Gilson	232/232XL	☐	☐	☐	☐			
Gilson	233XL	☐	☐	☐	☐			
Gilson	234	☐	☐	☐	☐			
Gilson	235	☐	☐	☐	☐			
Gilson	401	☐	☐	☐	☐			
Gilson	402	☐	☐	☐	☐			
Gilson	ASPEC	☐	☐	☐	☐	☐		
Gilson	All Other Model		☐	☐	☐			
HTA	HT250D/HT280T	☐	☐	☐	☐			
HTA	HT300A/HT310A	☐	☐	☐	☐			
HTA	HT300L	☐	☐	☐	☐			
Jasc	All Models	☐	☐	☐	☐			
Kontro	MSI 660					☐		
Kontro	All Other Model		☐	☐	☐			
LDC	Marathon	☐	☐	☐	☐			
Leap Technologie	A200LC	☐	☐	☐	☐			
Leap Technologie	CTC DI PAL	☐	☐	☐	☐			
Leap Technologie	CTC Combi PAL	☐	☐	☐	☐			
Leap Technologie	CTC A200E PAL	☐	☐	☐	☐			
Leap Technologie	CTC HTS PAL	☐	☐	☐	☐	☐		
Leap Technologie	CTC LC Mini PAL	☐	☐	☐	☐			
Leap Technologie	CTC A200S PAL	☐	☐	☐	☐			
Merck/Hitach	AS-2000	☐	☐	☐	☐			
Merck/Hitach	AS-4000	☐	☐	☐	☐			
Merck/Hitach	L7200	☐	☐			☐		
Merck/Hitach	L725	☐	☐	☐	☐			
Merck/Hitach	L8800		☐	☐	☐			
Merck/Hitach	LaChrom					☐		



Colpak Autosampler Compatibility Chart		Screw Neck ND8	Short Screw Thread ND9	Crimp Neck ND 11	Snap Ring ND 11	Short Screw Thread ND 13	Headspace ND20	Shell Vials
		TC-80 A TC-80 B TC-80 C TC-80 D	TC-90 A TC-90 B TC-90 C TC-90 D TC-90 AER TC-90 BER TC-91 ERB	TC-110 A TC-110 B TC-110 C TC-110 D TC-110 AER	TC-110 SA TC-110 SB TC-110 SC TC-110 SD	TC-130 A TC-130 B TC-130 C TC-130 D	TC-200 TC-200 A	TC-712 TC-712 A TC-712 B
Perkin Elmer	AI-1		☐	☐	☐			
Perkin Elmer	Auto System		☐	☐	☐	☐		
Perkin Elmer	Integral 4000		☐	☐	☐			
Perkin Elmer	ISS 100		☐	☐	☐			
Perkin Elmer	ISS 200		☐	☐	☐			
Perkin Elmer	LC600 42 Vial Tray		☐	☐	☐			
Perkin Elmer	Series 200	☐	☐	☐	☐			
Pharmacia	LKB 2157-010	☐	☐	☐	☐			
Shimadzu	AOC-14	☐	☐	☐	☐	☐		
Shimadzu	AOC-1400	☐	☐	☐	☐	☐		
Shimadzu	AOC-17	☐				☐		
Shimadzu	AOC-20i	☐				☐		
Shimadzu	AOC-20s	☐				☐		
Shimadzu	AOC-8B	☐						
Shimadzu	LC-10A					☐		
Shimadzu	SIL-2AS					☐		
Shimadzu	SIL-6B	☐	☐	☐	☐			
Shimadzu	SIL-9A	☐	☐	☐	☐			
Shimadzu	SIL-10A	☐						
Shimadzu	SIL-HTa	☐	☐	☐	☐			
Shimadzu	SIL-HTc	☐	☐	☐	☐			
Spark Holland	Marathon	☐	☐	☐	☐			
Spark Holland	Midas	☐		☐	☐			
Spark Holland	Promis	☐	☐	☐	☐			
Spark Holland	SPH 125	☐		☐	☐			
Spark Holland	Triathlon	☐		☐	☐			
Spectra-Physics/TS	8875	☐		☐	☐			
Spectra-Physics/TS	8880	☐		☐	☐			
Spectra-Physics/TS	AS100/ 1000	☐		☐	☐			
Spectra-Physics/TS	AS300/ 3000	☐		☐	☐			
Spectra-Physics/TS	Spectra-System			☐	☐			
Thermo Ques	AS800	☐						
Thermo Ques	Midas	☐		☐	☐			
Thermo Ques	HS850						☐	
Thermo Ques	Trace GC2000+AS2000	☐		☐	☐			
Thermo Ques	Trace GC2000+HS2000						☐	
Tosoh	AS-8010			☐	☐			
Tosoh	TSK-6080			☐	☐	☐		
Unicam	4247			☐	☐			
Unicam	4710			☐	☐			
Unicam	LC-XP	☐		☐	☐	☐		
Varian	8035	☐						
Varian	8100	☐		☐	☐	☐		
Varian	8200	☐		☐	☐	☐		
Varian	8200 CX						☐	
Varian	9090	☐		☐	☐			
Varian	9095	☐		☐	☐			
Varian	9100	☐		☐	☐			
Varian	CombiPAL	☐		☐	☐			
Varian	CP-8400						☐	
Varian	CP-8410						☐	
Varian	Genesis						☐	
Varian	Maratho	☐		☐	☐			
Varian	ProStar 400			☐	☐			
Varian	ProStar 410			☐	☐			
Varian	ProStar 420			☐	☐			
Varian	ProStar 430			☐	☐			
Varian	Ultra GC/M						☐	
Varian	Vista	☐						
Water	2690			☐	☐			
Water	2710 Sample Manager			☐	☐			
Water	48 Position					☐		☐
Water	96 Position							☐
Water	Alliance	☐		☐	☐	☐		
Water	Breeze	☐		☐	☐	☐		
Water	710			☐		☐		
Water	712			☐		☐		
Water	715			☐		☐		
Water	717			☐		☐		

Technical Specifications

Factors for Selecting a Glass Container Chemical Durability

The U.S. Pharmacopeia classifies pharmaceutical glass containers according to their chemical durability, which is their resistance to water attack. Different types of glass react differently when exposed to solutions and vapors. Reactive substances will leach constituents from the glass surface into the contained product. This reaction can occur with ordinary aqueous, saline and alcohol based solutions. The primary ion removed from the glass surface is sodium; however all elements are subject to leaching. It is not uncommon to experience an increase in product pH as sodium is extracted from the container. Corrosion of the glass occurs over time and is accelerated by moist heat-treating processes like autoclaving.

Containers are classified by the USP as Type I, Type II and Type III. Type I is the most chemically durable glass and Type III is the least durable. Test methods and specification limits are determined by the USP in Chapter <660> Containers. USP Type can be used as a general guide for container selection but should not be the only criteria in the decision making process. A set of criteria has been developed over the years to assist with the selection of glass containers. These guidelines were established to narrow the selection of possible containers. It is the product manufacturers responsibility to do testing to ensure that the glass container is suitable for the application and contained product.

USP Type I

USP Type I classification is a borosilicate glass with superior chemical resistance. This class of glass represents the least reactive glass containers available. Typically, this glass can be used for most applications, including packaging for parenteral and non-parenteral products. Type I glass may be used to pack acidic, neutral and alkaline products. Water for injection, unbuffered products, chemicals, sensitive lab samples and those requiring sterilization are commonly pack in Type I borosilicate glass. Type I glass can be subject to chemical attack under certain conditions, thus container selection must be made carefully for very low and very high pH applications. Most glass laboratory apparatus are Type I borosilicate glass.

Even though Type I glass has the highest chemical durability, there still may be some sensitivity with certain pack products. For applications where standard Type I glass does not provide sufficient protection against alkali extraction and pH shifting, internal surface treatment can be used to further improve the chemical durability of the container. This surface enhancement may become especially important for pH sensitive products pack in small containers because smaller containers have a higher surface area to volume ratio. See the USP Type II description for an explanation of the internal surface treatment process. It should be noted that the USP does not place any additional durability requirements on surface treated Type I glass.

USP Type II

USP Type II glass is soda-lime glass that has been treated with sulfur compounds to de-alkalize the interior surface of the container. This treatment results in a container with high chemical resistance because alkali is removed from the glass surface prior to use. The amount of ions available to leach into the product is reduced, thus the container durability is increased. Extraction salts will be present on the interior surface of new sulfur treated containers, and the containers

may require washing prior to use. Type II glass is less chemically durable than Type I glass, but is more chemically durable than Type III glass. It can be used for acidic and neutral parenteral preparations that remain below pH 7 during their shelf life.

Factors other than USP Type

Handling Considerations:

It is important to consider filling and processing steps when choosing a container. Both mechanical and thermal stresses are important factors. For a given thermal expansion range, a typical tubing vial with thin, uniform walls will withstand thermal shock better than a molded glass container.

The physical design of the container will play a part in the amount of thermal and mechanical shock resistance it exhibits. It is often necessary to make a compromise between high resistance to mechanical shock and high resistance to thermal shock.

Light Sensitivity:

Light sensitive products must be packaged in amber glass. Amber glass is formulated to absorb light in the Ultra Violet region of the electromagnetic spectrum. Test methods and specification limits for light protection can be found in the U. S. Pharmacopoeia.

Specific Ion Sensitivity:

If a product is sensitive to the presence of particular ions, the composition of the glass container should be considered. For example, products that contain sulfate salts may experience the formation of precipitates if packaged in glass with barium or calcium in the formulation. In this example, it would be desirable to avoid glass that contains barium and calcium. A second example is pre-cleaned containers for environmental sampling. Even though the containers are clean, the chemical durability characteristics of the glass have not been altered. Thus, it would not be feasible to test the samples for low levels of sodium, because the sample will extract sodium from the container's surface.

Glass Manufacturing Terminology

Annealing Point

The temperature at which internal stresses in glass are significantly reduced. In the annealing operation, glass is gradually cooled from above the annealing point temperature to below the strain point temperature. This slow cooling relieves residual thermal stresses that would develop if the glass were allowed to cool in an uncontrolled manner.

Borosilicate Glass: A high silicate glass that has at least 5% boron oxide.

Contraction Coefficient: The fractional change in length of a piece of glass per degree change in temperature on cooling from the annealing point to ambient temperature.

Finish: The part of a bottle which holds the stopper or closure. The area that has the threads (generally a shortened term for thread finish). The first part made on an automatic machine, but the last part (or finish) to be made when bottles were hand blown. On labware, may refer to an interchangeable ground joint.

Technical Specifications

Forming: The shaping of hot glass.

Hard Glass: A glass with a high softening point or high viscosity (usually borosilicate).

Lehr: A long belt-fed, tunnel-shaped oven used to heat glass to the annealing point and then slowly cool it to room temperature to remove any residual thermal stresses in the glass. Can also be a large oven where glass is manually loaded and unloaded (batch lehr).

Linear Coefficient of Expansion: The fractional change in length of a piece of glass per degree change in temperature. The coefficient of expansion generally indicates the thermal endurance of the glass. Glasses with a low linear coefficient of expansion can be subjected to greater rapid temperature changes with less chance of fracture than glasses with a high coefficient of expansion. (Generally, Type I glass has a lower COE than Type III).

Soda-Lime (or Soft) Glass: A glass with a substantial portion of lime in the formula.

Softening Point: Temperature at which a thread or rod of glass rapidly deforms under its own weight.

Strain Point: The temperature at which thermal residual stresses become permanent upon cooling. Temperatures above the strain point will introduce permanent stresses that can cause or contribute to fracture. At temperatures below the strain point, the glass can be temporarily heated and cooled without introducing permanent stress. The strain point can be considered the maximum service temperature.

Temper: The degree of residual stress in annealed glass as measured using polarized light techniques.

Type 33 is clear borosilicate glass referred to as Type 1, Class A-33 Expansion

- This is the lowest coefficient of expansion
- Highly resistant to chemical attack
- Total arsenic and antimony oxides are less than 0.05%
- Free of the elements of the calcium, magnesium and zinc group of heavy metals
- Not available as amber glass

Plastic Properties				
Type of Plastic	LDPE	HDPE	PP	PS
Maximum. use Temperature C/F	80°C / 176°F	120°C / 248°F	135°C / 275°F	90°C / 194°F
Transparency	Translucent	Translucent	Translucent	Clear
Sterilization Autoclaving	No	No	Yes	No
Disinfectants	Yes	Yes	Yes	No
Dry Heat	No	No	No	No
Radiation	Yes	Yes	No	Yes
Specification Gravity	0.92	0.95	0.90	1.05
Flexibility	Good	Rigid	Rigid	Rigid

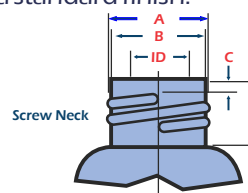
Type 51 or 70 is clear or amber borosilicate glass referred to as Type 1, Class B-51 Expansion

- Comparatively low coefficient of expansion
- All round good chemical compatibility
- Good resistance to heat shock
- Higher metal content
- All amber vials are made from Type 1, Class B-51 or 70 expansion glass
- Amber glass is to be used for a light sensitive samples; however, if left out in daylight for extended periods of time the amber coloring will fade and become less efficient

GPI refers to the "Glass Packaging Institute"
The GPI is responsible for establishing and issuing standards for the types and finishes produced by American glass manufacturers.

For example, and 9-425 neck finish is approximately 9 mm in diameter across the outside of the threads. The 425 represents the finish (style of thread).

Note: The 9 mm thread finish does not appear in the GPI finishes. It is not a standard finish.



Glossary

1. PP	: Polypropylene
2. PE	: Polyethylene
3. PTFE	: Poly Tetra Fluoro Ethylene
4. ND	: Nominal Diameter
5. GC	: Gas Chromatography
6. HPLC	: High Pressure Liquid Chromatography
7. 1st Hydrol Class	: Type 1 glass

Technical Specifications

Selecting the correct SEPTA

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

The individual conditions of the user's application aim at the specific characteristics of the carrier material, e.g.:

Septa Compatibility Post Injection

Poor : Post injection this septa will exhibit sample loss and deterioration

Fair : Post injection this septa will maintain integrity for a limited period of time with some deterioration

Good : Post injection this septa will maintain integrity for an extended period of time minor deterioration

Excellent : Post injection this septa will maintain integrity for high percentage of analytical sample analysis with absolute minimal deterioration

PTFE

- Exceptional solvent resistance with superior chemical inertness
- Only suitable for single injection use – not recommended for sample storage before or after injection
- Not resealable
- The most economical septa
- Maximum service temperature 260°C

PTFE / Silicone

- Excellent resealing capabilities – highly recommended for multiple injections and sample storage
- Autoclavable and excellent resistance to coring
- PTFE chemical resistance until pierced then the septa will have the compatibility of silicone Temperature range -40°C to 200°C, For thin Fragile needle

Pre-Slit PTFE / Silicone

- Reduces the possibility of coring with blunt tipped needles or for applications using a thin gauge needle
- Used to prevent vacuum from forming inside the vial
- Temperature range -40°C to 200°C, For Blunt, thick needle

PTFE / Silicone / PTFE

- Recommended for multiple injections due to above average resealing capabilities
- Autoclavable and excellent resistance to coring
- Recommended for demanding applications such as internal standards, trace analysis or applications where there will be a long time between injections
- Temperature range -40°C to 200°C

Chemical	Rubber	Silicons	Butyl Rubber	Viton
Acids	Good	Excellent	Fair	Poor
Acids, Diluted	Good	Good	Fair	Poor
Acetone	Good	Poor	Good	Poor
Alcohols	Fair	Good	Good	-
Benzene	Poor	Fair	Poor	Good
Chloroform	Poor	Good	Fair	Good
Dioxane	Fair	Good	Poor	Poor
Ethyl Acetate	Good	Excellent	Fair	Poor
Ethyl Alcohol	Excellent	Good	Fair	-
Halogenated Hydrocarbons	Poor	Excellent	Poor	-
Hexane	Poor	Good	Poor	-
Ketones	Excellent	Fair	Good	-
Methanol	Good	Excellent	Good	Poor
Pentane	Poor	Good	Poor	-
Sulphuric Acid	Fair	Good	Poor	Good
Sufactants	Excellent	Excellent	Fair	-
Toluene	Fair	Good	Poor	Excellent
Water	Excellent	Excellent	Good	Good

MUCAPS[®] Glass Micro Capillaries Pipettes

MUCAPS[®] are high precision capillary pipettes made of borosilicate natural glass with a precision bore, accurately cut and fire polished.

TLC Application : Laboratory Grade



Catalog No	Length	Pack Size	No. of Caps / Vials
SP-2013	100mm	10 Vials	250

Other sizes and Research grade available on request including 9" spotting TLC Capillary

MUCAPS[®] Graduated, GR Micro Capillaries

GR micro capillary pipettes are calibrated to contain specified volume when filled between end opposite to colour code band (indicating capacity) and black ring (indicating graduation)

Capacity	Catalog No.	No. of Marks & Positoin	Tolerance	Color Code	Pack Size	No. of Caps per Vials
5µl	22-02-005	5 at 1,2,3,4,5µl	±2%	White	10 Vials	250 Caps
5µl	22-12-005	1 at 5µl	±1%	Orange	10 Vials	250 Caps
10µl	22-02-010	2 at 5, 10µl	±1%	Black	10 Vials	250 Caps
10µl	22-02-010	1 at 1µl	±1%	2 x White	10 Vials	250 Caps
20µl	22-02-020	1 at 1µl	±1%	Green & Black	10 Vials	250 Caps
25µl	22-02-025	1 at 1µl	±1%	Green & Red	10 Vials	250 Caps
50µl	22-02-050	1 at 1µl	±1%	Green	10 Vials	250 Caps
100µl	22-02-100	1 at 1µl	±1%	Green	10 Vials	250 Caps
150µl	22-02-150	2 at 100, 150µl	±1%	Blue	10 Vials	250 Caps
200µl	22-02-200	1 at 1µl	±1%	Blue	10 Vials	250 Caps



Accessories: Bulb Dispenser

Precision - bore capillary tubes are calibrated to contain when from end to end. Insert a tube into the reusable dispensing bulb assembly and capillary action draws fluid up to the full capacity. Simply squeeze the bulb to dispense. Each case contain one bulb and 100 disposable tubes.

Capacity	Description	Pack Size
100µl	Bulb Dispenser	Each

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