Chromacol

consumables for chromatography

Contents

Our innovative range of Chromacol chromatography products has expanded to include products for Life Sciences, High Throughput Screening and Combinatorial Chemistry. Chromacol products are best known for the extensive range of vials, caps and seals that are produced for the wide range of autosamplers used in HPLC, GC and associated analytical techniques. Close technical cooperation with the world's leading instrument manufacturers has led to a comprehensive range of products manufactured to exacting standards and specifications to ensure compatibility. Chromacol products are available worldwide though it's network of international distributors.

We are committed to the supply of high quality laboratory accessories, consumables and instruments.

As an ISO 9001 certified company we are able to offer custom design and manufacturing with stringent manufacturing tolerances.

Chromacol key product lines now include:

- Combination packs for routine analytical use.
- Microsampling products such as the Micro+ range of fused insert vials
- Headspace products, including magnetic cap products and screw finish vials.
- High sample recovery vials.
- WebSeal microtiter plate products with pre-inserted glass or PTFE vials for Life Sciences and Combinatorial Chemistry.

Chromacol Chromatography Consumables

Building on our history of delivering innovative solutions, we have a number of new products to help you improve your chromatography experience.

11mm Magnetic Crimp Caps

These soft crimp magnetic caps allow the use of 2mL crimp vials for sample pre-treatment and preparation on autosamplers requiring magnetic transport such as the CTC CombiPAL

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Storage Vials

For general storage applications these dram vials take caps with standard GPI threads. Both injection caps with piercable seals or solid PTFE lined storage caps may be supplied separately, and also as part of convenience packs.

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New High Recovery Storage Vials

Chromacol's new range of high recovery storage vials contain a tapered reservoir. This provides larger sample capacities whilst giving maximum sample recovery and prevents any waste of precious samples.

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Bonded Caps

Chromacol bonded caps are designed to fit the full range of Chromacol 9mm screw top vials. Using a reagent free bonding process, the seal is bonded into the polypropylene cap. They are available in either a standard or pre-cut version.

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Thermo Scientific Chromatography Columns and Consumables

We now offer a number of Thermo Scientific accessories for chromatogrpahy and mass spectrometry.

Thermo Scientific HyperSep SPE Columns

HyperSep™ products have been developed for rapid effective and economical sample preparation.

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Thermo Scientific HPLC Columns

Chromacol now supplies columns packed with Thermo Scientific Hypersil™ materials. This includes the Hypersil GOLD™ range of base deactivated phases, including 1.9µm diameter particle for ultra high pressure applications.

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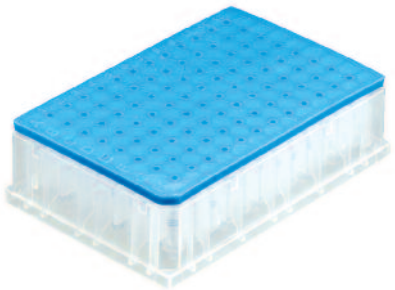
WebSeal Micro Titer Plate Products

WebSeal Products

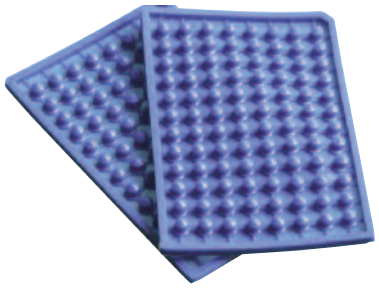
The Chromacol WebSeal System has been extended to cover a much wider range of titer plates including 384 round and square wells. Chromacol's WSM-2 fits many standard 96 well titer plates with round, cylindrical or tapered wells and WSM-3S fits 96 well titer plates with square cavities. Both are made from PTFE coated, chromatographically clean, silicone elastomer. WebSeal is an extremely efficient system allowing all the wells, whether there are 384, or 96 to be closed in one easy action.

The WebSeal closure system reseals around the needle even after multiple aliquots have been taken from a sample. This means that sample concentrations do not change over a period of time as a result of solvent evaporation.



500µL WebSeal vials

The 05-MTPVC-96 consists of mid-depth plates pre-inserted with 96 500µL tapered glass vials. Supplied complete with WSM-1 sealing mats for fast and secure closure of all vials in less than 6 seconds. The lower profile gives access to a majority of modular well plate samplers. Individual vials may be removed with a special cutting tool.



Pre-Cut WebSeal Mats

In some cases piercing of the normal mats can be difficult. The introduction of these pre-slit products allows the use of the pre-inserted vials on a wider range of instruments than ever before. The new WSM-1X and WSM-6X mats fit the pre-inserted Chromacol vials designed to be used in well-plate autosamplers.

1.5mL WebSeal vials

The requirement for larger volumes of sample in the standard 96-well plate format has led to the production of a taller vial with the same sealing mat as the existing 1.1-MTPVC-96. The 62mm tall 1.5-MTPVC-96, gives the extra volume. This means that it will take almost as much liquid as a 2mL vial. It is designed to work with most robotic sample processors and most HPLC autosamplers.

96 and 384 Well Sealing Mats

Material	Properties
Blue silicone/natural PTFE spray	Soft silicone with sprayed clear PTFE layer to give resistance against a wide range of organic solvents. Suitable for injection with a wide range of autosamplers and sample processing units. Pre-slit versions allow use of blunt probes and pipette tips.
Clear silicone	Soft silicone without protective spray. Cannot be used for extended periods with strong solvents. May be used under aqueous conditions for storage.
Temperature and hardness	All of the mats will operate between -80 °C to 260 °C, and have a Shore Hardness of 57.

WebSeal Micro Titer Plate Products

Key to products Vial | Combination Pack | Plate | Accessory | Mat

PART NUMBER	DESCRIPTION	PACK SIZES
1.5-MTPVC-96	96 well micro titer plate with 1.5mL glass vials pre-inserted, with 5 sealing mats.	5
1.5-MTV-96	1.5mL glass vials, for large volume micro titer plates.	500
1.1-CMTPVC-96	96 well micro titer plate with large volume 1.1-CRV crimp top vials pre-inserted.	5
1.1-MTP-96	Plastic 96 well micro titer plate for large volume vials.	5
05-MTP-96	Plastic 96 well micro titer plate for small volume vials (05-MTV-96).	5
1.1-MTPVC-96	96 well micro titer plate with large volume glass vials pre-inserted, with 5 sealing mats.	5
05-MTPVC-96	96 well small volume micro titer plate with small volume glass vials pre-inserted, with 5 sealing mats.	5
1.1-MTV-96	Large volume glass vials, for large volume micro titer plates.	500
1-MTTV-96	PTFE micro titer plate vial for 96 deep round well plates (MTP-96).	100
1-MTV-96	Glass micro titer plate vial for 96 deep round well plates (MTP-96).	500
1-MTV(A)-96	Amber glass micro titer plate vial for 96 deep round well plates (MTP-96).	500
05-MTV-96	500µL glass vials for low volume micro titer plate (05-MTP-96).	500
MTP-96	Polypropylene 96 deep round well micro titer plate.	5
MTPC-1	WebSeal cutter for vial removal.	1
MTPTC-96	Polypropylene 96 well micro titer plate with PTFE vials pre-inserted, complete WebSeal closure.	1
MTPVC-96	Polypropylene 96 well micro titer plate with glass vials pre-inserted, complete WebSeal closure.	5
CLS-219006	96-well deep well microplate polypropylene, square well, 350µL/well	50

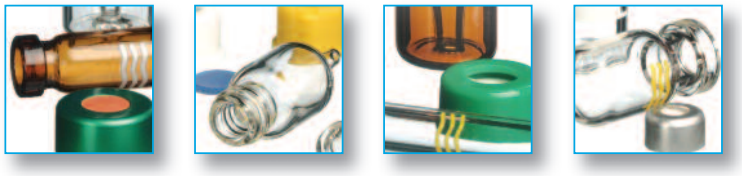
WebSeal Mats

PART NUMBER	DESCRIPTION	PACK SIZES
WSA-1	WebSeal mat applicator.	1
WSM-1	96 well, silicone/PTFE coated elastomer WebSeal mat.	5
WSM-1X	96 well, silicone/PTFE coated elastomer WebSeal mat, pre-cut.	5
WSM-2	96 round well, silicone/PTFE coated elastomer WebSeal mat, domed base.	5
WSM-2E	96 round well, silicone only elastomer WebSeal mat, domed base.	5
WSM-2FB	96 round well, silicone/PTFE coated elastomer WebSeal mat, flat base.	5
WSM-2FBE	96 round well, silicone only elastomer WebSeal mat, flat base.	5
WSM-2FBX	96 round well, silicone/PTFE coated elastomer, WebSeal mat, flat base, pre-cut.	5
WSM-2FBXE	96 round well, silicone only elastomer WebSeal mat, flat base, pre-cut.	5
WSM-2X	96 round well, silicone/PTFE coated elastomer WebSeal mat, domed base, pre-cut.	5
WSM-2XE	96 round well, silicone only elastomer WebSeal mat, domed base, pre-cut.	5
WSM-3S	96 square well, silicone/PTFE coated elastomer WebSeal mat.	5
WSM-3SE	96 square well, silicone only elastomer WebSeal mat.	5
WSM-3SX	96 square well, silicone/PTFE coated elastomer WebSeal mat, pre-cut.	5
WSM-3SXE	96 square well, silicone only elastomer WebSeal mat, pre-cut.	5
WSM-3SXY	96 square well, silicone/PTFE coated elastomer WebSeal mat, pre-cut, yellow.	5
WSM-5X	384 square well, silicone/PTFE coated WebSeal mat, pre-cut. See note 2.	5
WSM-5XE	384 square well, silicone only WebSeal mat, pre-cut. See note 1.	5
WSM-6	PTFE coated silicone mat, for use with large volume glass vials (1.1-MTV-96).	5
WSM-6X	PTFE coated silicone mat, for use with large volume glass vials (1.1-MTV-96), pre-cut.	5

ADDITIONAL NOTES

- Compatible with Greiner®, Whatman™, Polyfiltronics and ABgene™ plates
- Compatible with Greiner and some Porvair™ plates

Autosampler Vials



Chromacol has been involved in the design and manufacture of vials, caps and seals for chromatography for almost as long as chromatography has been used as an automatic analytical technique.

Therefore Chromacol is able to offer the most suitable combinations for the most popular instruments currently in use.

Instrument Select is a range of low cost convenience kits for chromatography autosamplers. Each box contains 100 vials, caps and seals in a "clam-shell" pack made from specially selected chromatographically clean materials.

Instrument Select Vial Kits

Chromacol offers the most suitable combination packs for the most popular instruments currently in use.

The contents have been carefully chosen to match the needs of particular autosamplers. All the analyst has to do is remember the name of the autosampler to be used. No long product codes are needed only the initials of the instrument in use. For example, to order 100 vials, caps and seals for a Shimadzu gas chromatograph the reference would be SHG.

INSTRUMENT MANUFACTURER	GC AUTOSAMPLERS	LC AUTOSAMPLERS
Agilent Technologies	HPG	HPL and HPLS (for 1100)
CTC/Leap	CTCG	CTCL
Dionex	-	DIC (for IC)
PerkinElmer	PEG	PEL
Merck-Hitachi	-	MEL
Shimadzu	SHG	SHL
Spark	-	SPL
Thermo Scientific	TQG or TTR (for TRACE)	TQL
Varian	VAG	VAL
Waters Alliance	-	WAL WALB (Bonded Cap)

The added convenience of having a matching quantity of vials and caps, at no extra cost, in one case means that, large quantities of vials and pre-assembled caps are not left open to contamination prior to use. Each pack is labelled with the production batch number to ensure batch traceability.

Select Vial Kits

A range of convenience kits for chromatography autosamplers. Each box contains 100 vials, caps and seals in a new "clam-shell" pack made from specially selected chromatographically clean materials.

PART NUMBER	DESCRIPTION	PACK SIZE
06-PESV14X-CP	600µL polyethylene, screw top vials with pre-cut silicone/PTFE screw caps.	100
2-CV(A)7-CP	2mL amber, crimp top vials, with rubber/PTFE crimp caps.	100
2-CV(A)ST-CP	2mL amber, crimp top vials, with silicone/PTFE crimp caps.	100
2-CV7-CP	2mL clear, crimp top vials, with rubber/PTFE crimp caps.	100
2-CVST-CP	2mL clear, crimp top vials, with silicone/PTFE crimp caps.	100
2-RV8-CP	2mL clear, snap top vials with rubber/PTFE snap caps.	100
2-RVST-CP	2mL clear, snap top vials with silicone/PTFE snap caps.	100
2-SV101-CP	2mL clear, screw top vials with silicone/PTFE screw caps.	100
2-SVJ(W)101-CP	2mL clear, screw top* vials, with silicone/PTFE screw caps.	100
2-SVW(A)8-CP	2mL amber, screw top vials, with rubber/PTFE screw caps.	100
2-SVW(A)ST-CP	2mL amber, screw top vials, with silicone/PTFE screw caps.	100
2-SVW8-CP	2mL clear, screw top vials, with rubber/PTFE screw caps.	100
2-SVWBSTX-CP	2mL clear, screw top vials, with bonded silicone/PTFE pre-cut screw caps.	100
2-SVWST-CP	2mL clear, screw top vials, with silicone/PTFE screw caps.	100

* These vials use the 8-SCJ type caps.

Agilent Technologies (HP) 1050, 1100 and 1200

Our 11-AC7, red rubber and PTFE, crimp caps, are ideal for this instrument and our 11-AC-ST15 and 11-AC-ST101 silicone seals may be used when a more aggressive solvent is specified.

The Instrument Select product code HPL includes 1000 2-CV vials and 1000 11-AC7 crimp caps specially selected to be compatible with this instrument.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
HPL	2mL crimp top vial with a type 7 rubber/PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	500
1.1-CTVG	1.1mL, clear glass, crimp top, tapered, wide neck vial. Made from inert Chromacol Gold™ grade glass. Needs PTFE support, reference TTS-313. See page 78.	
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene vial with an internal tapered profile.	500
03-FIV	300µL, Micro+ one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC7	**Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 32.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-8RT1	11mm polyethylene snap cap pre-fitted with a red rubber/PTFE seal. Shore hardness value 58.	500

6 and 7 x 32mm crimp top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
08-CRV(A)	800µL, amber glass, crimp top, round bottom vial. Needs WS-5 support.	500
06-CTV(A)	600µL, amber glass, crimp top, tapered vial. Needs WS-5 support.	500
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass. Needs support reference SV-S11A. See page 28.	
8-AC7	Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 29.	1000

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
HPLS	2mL screw top vial with a type 8 rubber/PTFE seal.	100
2-SVW	**2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.**	500
09-FISV	900µL Micro+, screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination with write-on patch.	500
9-SC(B)-8RT1	**9mm screw cap (blue) prefitted rubber PTFE seal. Shore hardness value 58. Other colours and seals available. See page 36.**	500
4-SV	4mL wash vial, 15 x 46mm, clear glass, screw top, flat bottom. See page 38.	500

Agilent Technologies (HP) 7673A/11/11

One of the world's most popular autosamplers is the HP 7673A, and there are many Chromacol vials of different shape and volume, caps and seals with many different formulations, which are ideal for this instrument. Our 2-CV vials and 11-AC7 caps, included in our Instrument Select packs HPG, are a perfect match and our Micro+ range of vials are ideal for microsampling. For the full range of our GC Septa, please request a copy of our GC Septa brochure or see page 56.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
HPG	2mL crimp top vial with a type 7 rubber/PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC7	**Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 32.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-8RT1	11mm polyethylene snap cap pre-fitted with a red rubber/PTFE seal. Shore hardness value 58.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs SV-S11G or SV-S11A support. See page 28.	500
8-AC7	Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 29.	1000

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, wide neck, screw top vial. With write-on patch.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-8RT1	9mm screw cap (blue) prefitted rubber PTFE seal. Shore hardness value 58. Other colours and seals available. See page 36.	500
4-SV	4mL wash vial, 15 x 46mm, clear glass, screw top, flat bottom. See page 38.	500

Chromseal™ GC Septa	Model	Septa size		PART NUMBER			Pack Size
		mm	ins.	High Temp	Long Life	Ecomomy	
Agilent Technologies (HP)	5700	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5	25
	5880, 5890, 6890	11	7/16	HT-11	LL-11	ECO-11	25

Agilent Technologies (HP) 1090

Millions of Chromacol vials have been used with this instrument for many years in its characteristic black cassette system. Our Micro+ vials with a capacities of 300µL and 900µL are both easy to use and very safe for the autosampler needle.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
HPL	2mL crimp top vial with a type 7 rubber/PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
1.1-CTVG	1.1mL, clear glass, crimp top, tapered, wide neck vial. Made from inert Chromacol Gold grade glass. Needs PTFE support, reference TTS-313. See page 78.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC7	**Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 32.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-8RT1	11mm polyethylene snap cap pre-fitted with a red rubber/PTFE seal. Shore hardness value 58.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass needs SV-S4 support. See page 28.	500
8-AC7	Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 29.	1000

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-8RT1	9mm screw cap(blue) prefitted rubber PTFE seal. Shore hardness value 58. Other colours and seals available. See page 36.	500
4-SV	4mL wash vial, 15 x 46mm, clear glass, screw top, flat bottom. See page 38.	500

PerkinElmer AutoSystem/XL and Clarus 500/600

These autosamplers need to be used with relatively soft seals and the Chromacol type 6 rubber/PTFE seal was developed specifically for these instruments. Our silicone/PTFE formulation ST101 has been proven to be ideal for use with ECD on this instrument. Instrument Select pack PEG contains the standard caps and seals for this instrument. For the full range of our GC Septa, please request a copy of our GC Septa brochure or see page 56.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

PART NUMBER	DESCRIPTION (12 x 32mm crimp top vials and caps)	PACK SIZE
PEG	2mL crimp top vial with a type 6 soft rubber/PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC6	**Aluminium crimp cap fitted with a type 6, rubber/PTFE seal. Shore hardness value 38. Other colours and seals available. See page 32.**	**500**
11-AC-ST101	Aluminium crimp cap fitted with a blue silicone/PTFE seal. Shore hardness value 30, also good for ECD. Other colours and seals available. See page 32.	500

PART NUMBER	DESCRIPTION (6 x 32mm crimp top vial and cap)	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass. Needs a SV-TSP support. See page 28.	500
8-AC6	Aluminium crimp cap fitted with a type 6, rubber/ptfe seal. Shore hardness value 38. Other colours and seals available. See page 29.	1000

PART NUMBER	DESCRIPTION (12 x 32mm wide neck screw top vials and cap)	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST101	9mm, screw cap pre-fitted with a blue silicone/PTFE seal, Shore hardness value 30.	500

Chromseal GC Septa	Model	Septa size mm	Septa size ins.	PART NUMBER High Temp	PART NUMBER Long Life	PART NUMBER Ecomomy	Pack Size
PerkinElmer	All models	11	7/16	HT-11	LL-11	ECO-11	25

PerkinElmer ISS-100, 200, Integral 4000 and Series 200

PerkinElmer LC autosamplers use a series of racks to hold the vials and there are many Chromacol vials compatible with them from 100µL to 10mL. Chromacol's WebSeal 96 well titer plates products are also suitable for certain versions of these instruments. To order easily, use Instrument Select code PEL.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
2-CV	2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.	500
2-RV	2mL snap cap vial with write on patch - clear.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC-ST101X	Aluminium crimp cap fitted with a pre-cut blue silicone/PTFE seal, with anti vacuum device.	500
11-PSN(B)-ST1X	11mm snap cap with pre-cut silicone/PTFE seal.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs SV-S11A PTFE sleeve. See page 28.	500
8-AC-ST101X	Aluminium crimp cap fitted with a pre-cut blue silicone/PTFE seal.	500

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
PEL	2mL screw top vial with a pre-cut white silicone/red PTFE seal.	100
2-SVW	**2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.**	**500**
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST1X	**9mm screw cap (blue) prefitted with pre-cut silicone/ PTFE seal.**	**500**

Wash vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
10-CV	10mL, crimp top, headspace vial, used in Integral 4000.	125
6-CV	6mL, crimp top, headspace vial, used in the ISS100/200 and the Series 200.	125
20-PEPC5	20mm polyethylene snap cap.	250

PerkinElmer AS100, 100B, 300, 8300 and AS 2000B

These autosamplers use 8mm diameter vials for normal sample volumes and vials of 6 and 7mm diameter for microsampling, all with 8mm crimp caps. The harder 8-AC7, rubber/PTFE crimp caps are perfectly suited as is our silicone/PTFE cap, 8-AC-ST15.

Key to products Vial Cap

Bold items in grey are our standard products, used in the combination packs.

8 x 30mm crimp top vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
08-CV	**800µL, clear glass, flat bottom, crimp top vial.**	**500**
05-CTV(A)	500µL, amber glass, crimp top, tapered vial. Requires the use of a WS-1 PTFE support sleeve.	500
8-AC7	**Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 31.**	**1000**
8-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500

6 x 32mm crimp top vial and caps

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass. Needs SV-S2 support sleeve. See page 28.	500
8-AC7	**Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 29.**	**1000**
8-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500

Shimadzu GC Autosamplers

Our ST-101 seal formulation, is ideally suited for use with selective detectors and Mass Spectrometry. This blue silicone/PTFE formulation, has the perfect shore hardness for this autosampler. Instrument Select, SHG contains the standard vials caps and seals for these instruments. For the full range of our GC Septa, please request a copy of our GC Septa brochure or see page 56.

Key to products Vial Cap Seal Combination Pack

Bold items in grey are our standard products

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
SHG	2mL crimp top vial with a soft blue silicone/PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC-ST101	**Aluminium crimp cap fitted with a blue silicone/PTFE seal. Shore hardness value 30, also good for ECD. Other colours and seals available. See page 32.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-ST101	11mm polyethylene snap cap pre-fitted with a soft silicone/PTFE seal. Shore hardness value 30.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass. Needs a SV-TSP support. See page 28.	500
8-AC-ST101	Aluminium crimp cap fitted with a blue silicone/PTFE seal. Shore hardness value 30. Good for ECD.	500

12 x 32mm narrow neck screw top vials cap and seal

PART NUMBER	DESCRIPTION	PACK SIZE
2-SV	2mL, clear glass, flat bottom, screw top vial. With write-on patch.	500
1.1-STVG	1.1mL, clear glass, screw top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-312 PTFE support sleeve. See page 78.	500
06-PESV	600µL, polyethylene, screw top vial with an internal tapered profile.	500
8-SCJ(W)	Plastic, 8mm screw cap with wider flange diameter. Other colours available. See page 34.	500
8-ST101	8mm, blue silicone/PTFE seal. Shore hardness value 30.	125

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SCJ(W)-ST101	Screw cap, blue, pre-fitted with a blue silicone/PTFE seal. Shore hardness value 30. Other colours and seals available. See page 36.	500

Chromseal GC Septa	Model	Septa size	PART NUMBER			Pack Size
			High Temp	Long Life	Ecomomy	
Shimadzu	All models	plug type	HT-SP	LL-SP	ECO-SP	25

These autosamplers depend on the use of a larger diameter screw cap and need a white or yellow plastic cap to allow the vial detection system to operate correctly. Shimadzu's SIL-10Axi works best with a pre-cut seal such as our 8-ST14X and the rest of the range works best with our ST-101. Later versions of the Shimadzu SIL-10, 10, 2010VP autosampler are compatible with our WebSeal micro titer plate products. Instrument Select pack SHL contains the correct vials, caps and seals for these autosamplers.

Key to products Vial Cap Seal Combination Pack

Bold items in grey are our standard products

12 x 32mm narrow neck screw top vials cap and seals

PART NUMBER	DESCRIPTION	PACK SIZE
SHL	2mL screw top vial with a soft blue silicone/PTFE seal.	100
2-SV	**2mL, clear glass, flat bottom, screw top vial. With write-on patch.**	**500**
1.1-STVG	1.1mL, clear glass, screw top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-312 PTFE support sleeve when not suspended from cap. See page 78.	500
06-PESV	600µL, polyethylene, screw top vial with an internal tapered profile.	500
8-SCJ(W)	**White screw cap, no seal. Has wider flange suitable for Jasco™, Hitachi™ and Shimadzu autosamplers which suspend the vial by the cap. The 8-SCJ(Y) yellow may also be used.** **See page 34.** *The optical sensor works best with white or yellow screw caps*	**500**
8-ST101	**1mm thick blue silicone/PTFE seal. Shore hardness value 30.**	**500**
8-ST14X	1.4mm thick blue silicone/PTFE seal, pre-cut.	500

Note SIL-10AXi *06-PESV is not suitable for use in the SIL-10AXi*

15 x 46mm screw top vial caps and seal

PART NUMBER	DESCRIPTION	PACK SIZE
4-SV	4mL, clear glass, screw top, flat bottom vial.	500
12-SC(W)	White screw cap, no seal.	500
12-SC(Y)	Yellow screw cap, no seal.	500
12-ST101	1mm thick blue silicone/PTFE. Shore hardness value 30. Good for ECD.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, an SV-S12A support is needed. See page 28.	500
8-AC-ST101	Aluminium crimp cap fitted with a blue silicone/PTFE seal. Shore hardness value 30. Good for ECD.	500

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SCJ(W)-ST101	Screw cap, blue, pre-fitted with a blue silicone/PTFE seal. Shore hardness value 30. Other colours and seals available. See page 36.	500

Chromacol's 12 x 32mm vials, both crimp and screw top versions are compatible with the above named autosamplers. A special PTFE sleeve, SV-TSP, has been produced to allow these units to operate with our 100, 200 and 300µL micro vials. **These sleeves however must not be used with the vial-heating unit.** Instrument Select product code TQL contains the recommended wide neck vials and caps.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
TQL	2mL crimp top vial with a white silicone/red PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
1.1-CTVG	1.1mL, clear glass, crimp top, tapered, wide neck vial. Made from inert Chromacol Gold grade glass. Needs TTS-312 PTFE support. See page 78.	500
09-FIV	900µL Micro+™ crimp top, fused insert vial, clear.	500
03-FIV	300µL, one piece, glass insert and clear vial combination. With write-on patch.	500
11-AC-ST15	**Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-STI	11mm polyethylene snap cap pre-fitted with a silicone/PTFE seal. Shore hardness value 57.	500

12 x 32mm narrow and wide neck screw top vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
2-SV	2mL, clear glass, flat bottom, screw top vial. With write-on patch.	500
1.1-STVG	1.1mL, clear glass, 8mm, screw top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-312 support. See page 78. Not suitable for older model Spectra-Physics autosamplers.	500
8-SC-ST15	Screw cap, with silicone/PTFE seal. Shore hardness value 57.	500
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
06-PESV	600µL, polyethylene, 8mm, screw top vial with an internal tapered profile.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-STI	Screw cap, blue, pre-fitted with silicone/PTFE seal. Shore hardness value 57. Other colours and seals available. See page 36.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass.	500
8-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500

Thermo Scientific GC TRACE/AS3000/AI3000/AS800/TriPlus

The earlier versions of the AS 800 autosamplers used a 12 x 40 mm crimp top vial. To use a standard 12 x 32mm vial, use the additional PWS-11 support sleeve. Both our ST-101 and ST-144 seal formulations are suitable for these austosamplers. The ST-144 seal is included in the Instrument Select kit, product code TQG together with the crimp top vials. The TriPlus™ HS uses 20mL and 10mL headspace vials with recommended silicone/PTFE seals.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
TQG	2mL crimp top vial with a blue silicone/red PTFE seal.	100
2.5-CV	2.5mL, clear glass, crimp top, flat bottom vial.	500
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
1.1-CTVG	1.1mL, clear glass, crimp top, tapered vial made from inert Chromacol Gold grade glass, needs a PTFE support sleeve, part number TTS-312. See page 78.	500
09-FIV	900µL, crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC(B)-ST144	**Aluminium crimp cap, blue, fitted with a blue silicone/red PTFE seal.**	**500**

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
TTR	2mL screw top vial with a soft blue silicone/PTFE seal.	100
4-SVQ	4mL screw top vial - clear - For Thermo Scientific GC.	500
2-SVW	**2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.**	**500**
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST101	**Screw cap, blue, pre-fitted with a blue silicone/PTFE seal. Shore hardness value 30.**	**500**

6 x 32 and 8 x 30mm crimp top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
1.2-CWV	1.2mL, clear glass, crimp top, flat bottom vial. Needs polythene support.	500
1-CWV	1mL, clear glass, crimp top, tapered vial. Needs polythene support.	500
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass needs the SV-S1 support sleeve. See page 28.	500
8-AC(B)-ST144	Aluminium crimp cap, blue, fitted with a blue silicone/red PTFE seal.	500

22 x 45mm and 22 x 75mm crimp top vial cap and seal

PART NUMBER	DESCRIPTION	PACK SIZE
10-CV	10mL, clear glass, crimp top vial. For the HS 500.	125
20-CV	20mL, clear glass, crimp top vial. For the HS 850.	125
20-MCBC-ST3	Composite, magnetic blue crimp cap, with blue silicone/PTFE seal. Shore hardness value 40. Other colours and seals available. See page 41.	500

Chromseal GC Septa	Model	Septa size mm	Septa size ins.	PART NUMBER High Temp	PART NUMBER Long Life	PART NUMBER Ecomomy	Pack Size
Carlo Erba	FV2000 and FV 4000 Mega and Vega series	12	-	HT-12	LL-12	ECO-12	25
CE 8000 and TRACE™	All models	17	21/32	HT-17	LL-17	ECO-17	25
Unicam™	4600	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5	25

Varian GC Autosamplers 8000/8100/8410

All our 12 x 32mm standard and Micro+ vials are compatible with Varian autosamplers. We also have a wide range of vials suitable for microsampling and concentration by evaporation. Product code VAG contains the recommended screw top vials and the corresponding caps. For the full range of our GC Septa, please request a copy of our GC Septa brochure or see page 56.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
2-CV	2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.	500
1.1-CTVG	1.1mL, clear glass, crimp top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-314 PTFE support sleeve. See page 78.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-STI	11mm polyethylene snap cap pre-fitted with a silicone/PTFE seal. Shore hardness value 57.	500

12 x 32mm wide neck screw top vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
VAG	2mL screw top vial with a white silicone/red PTFE seal.	100
2-SVW	**2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.**	**500**
09-FISV	900µL Micro+ screw top fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST1	**9mm, blue, screw cap pre-fitted with a silicone/PTFE seal. Shore hardness value 57.**	**500**
1.1-STVG	1.1mL, clear glass, screw top, tapered vial made from inert Chromacol Gold grade glass.	500
8-SC-ST15	8mm, screw cap pre-fitted silicone/PTFE seal. Shore hardness value 57.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs SV-S3A support. See page 28.	500
8-AC-ST15	Aluminium crimp cap pre-fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500

Chromseal GC Septa	Model	Septa size mm	Septa size ins.	PART NUMBER High Temp	PART NUMBER Long Life	PART NUMBER Ecomomy	Pack Size
Varian	All packed column models	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5	25
	3300,3400,3500,3600,	11	7/16	HT-11	LL-11	ECO-11	25
	3700,Vista	11	7/16	HT-11	LL-11	ECO-11	25

Varian LC Autosamplers 9090/9095/PROSTAR

Our extended Micro+ range, with volumes of 300µL and 900µL are ideal for Varian autosamplers. Our ST-15 and ST-14 seals have the required degree of shore hardness for these instruments. There are many Chromacol vials that will operate with the Varian autosamplers, the most popular of which being our 12 x 32mm 2-CV & 2-SVW.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

PART NUMBER	DESCRIPTION (12 x 32mm crimp and snap cap vials and caps)	PACK SIZE
2-CV	2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.	500
1.1-CTVG	1.1mL, clear glass, crimp top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-314 PTFE support sleeve. See page 78.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC7	Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60.	500
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-8RT1	11mm polyethylene snap cap pre-fitted with a red rubber/PTFE seal. Shore hardness value 58. Other colours and seals available. See page 25.	500

PART NUMBER	DESCRIPTION (12 x 32mm wide neck screw top vials and caps)	PACK SIZE
VAL	2mL screw top vial with a white silicone/red PTFE seal.	100
2-SVW	**2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.**	**500**
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST1	**Screw cap, blue, pre-fitted with silicone/PTFE seal. Shore hardness value 57. Other colours and seals available. See page 36.**	**500**
1.1-STVG	1.1mL, clear glass, 8mm, screw top, tapered vial made from inert Chromacol Gold grade glass. Needs a TTS-312 support. See page 78.	500
8-SC-ST15	8mm, screw cap pre-fitted silicone/PTFE seal. Shore hardness value 57.	500

PART NUMBER	DESCRIPTION (6 x 32mm crimp top vial and cap)	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs an SV-S3A support. See page 28.	500
8-AC7	Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 29.	1000

Waters 48/717/717 Plus

The Chromacol 4-SV(A), 15 x 45mm, 4mL screw top, amber vial is also an ideal vial for this autosampler. When using our extensive range of PTFE sleeves, many of our micro vials may be used with these autosamplers.

Our Sci-Vi system vials, including the 01-CVG vial, may be used as reduced volume inserts in a 4-SV vial with an S-50 spring. 07-CPV(A) vial can be used as a reduced volume amber insert with an S-15 spring. Our preferred solution is the SV-S15, a new one piece low cost plastic support which replaces the above mentioned 4mL vial. This easy and simple to use support uses any one of the Sci-Vi system vials, i.e. 03-CVG, 02-CTVG, 02-CTV(A) and the 01-CVG.

Key to products Vial Cap

Bold items in grey are our standard products

15 x 46mm screw top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
4-SV	**4mL, clear glass, screw top, flat bottom vial.**	**500**
12-SC-ST2	**Screw cap, black, pre-fitted with a 2mm thick, silicone/PTFE seal.**	**500**
3.5-HRSV	3.5mL screw top vial - High Recovery - uses 13mm screw caps.	500
13-SC-ST15	13mm screw cap prefitted silicone/PTFE seal.	500

12 x 32mm crimp top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
4-CV	4mL, clear glass, crimp top, flat bottom vial, 15 x 46mm.	500
2-CV	2mL, clear glass, wide neck, crimp top, flat bottom vial. With write-on patch.	500
09-FIV	900µL Micro+ crimp top, fixed insert vial, clear.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs support sleeves SV-S11A and WS-2 or SV-S15. See page 28.	500
8-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500

Note

Standard 12 x 32mm vials require the use of the WS-7 support sleeve (see page 78), when used on the 717 and 717 Plus.

The 96 postion Waters autosampler does not use standard 12 x 32 mm vials. The Chromacol 1.2-CWV and 1-CWV vials are specially designed to meet the requirements of this instrument. When using small samples we would recommend the use of the 1-CWV vial because of its tapered base.

Key to products Vial Cap Combination Pack

Bold items in grey are our standard products, used in the combination packs.

Waters 96

8 x 40mm crimp top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
1.2-CWV	**1.2mL, clear glass, crimp top, flat bottom vial.**	**500**
1-CWV	1mL, clear glass, crimp top, tapered vial.	500
8-AC-ST15	**Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.**	**500**

8 x 40mm neckless vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
1-NWV	1mL, clear glass shell vial. Uses 8-NPWP polyethylene plug closure.	500
1-NWV-C	1mL neckless clear glass vial, with polyethylene caps.	200
1-NWV(A)-C	1mL neckless amber glass vial, with polyethylene caps.	200
1-PPNWV-C	1mL PP neckless vial for Waters 96 with a polyethylene cap.	250

Alliance/Acquity

For these autosamplers the Instrument Select code WAL includes our wide neck 2-SVW vials and our 9-SC(B)-ST1 silicone/PTFE seals. Waters now recommend the use of a bonded cap with some Alliance/Acquity instruments.

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
2-CV	2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.	500
1.1-CTVG	1.1mL, clear glass, crimp top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-314 PTFE support sleeve. See page 78.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
06-PECV	600µL, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC-ST15	Aluminium crimp cap fitted with a white silicone/red PTFE seal. Shore hardness value 57.	500
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-ST1	11mm polyethylene snap cap pre-fitted with a silicone/PTFE seal. Shore hardness value 57.	500

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
WALB	2mL screw top vial with a bonded white silicone/red PTFE seal.	100
2-SVW	**2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.**	**500**
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST1	Screw cap, blue, pre-fitted with silicone/PTFE seal. Shore hardness value 57. Other colours and seals available. See page 36.	500
9-SC(BLK)-BST1	**9mm screw cap (black) bonded silicone/PTFE liner. Recommended by Waters.**	**500**
9-SC(GY)-BST1X	9mm screw cap (grey) bonded silicone/PTFE liner pre-cut. Recommended by Waters.	500

CTC LC PAL/GC PAL/COMBI PAL

Our ST-144 and ST-101 seal formulations are ideal for these autosamplers. CTC instruments are compatible with our WebSeal 96 well titer plate products. Instrument Select is only available for the 105 tray version and uses product code CTCG and CTCL. A detailed brochure on CTC Consumables is also available. Please contact us for a copy or visit www.chromacol.com.

Key to products Vial Cap Seal Combination Pack

Bold items in grey are our standard products, used in the combination packs.

7 x 40mm crimp top vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
08-CPV(A)	800µL, amber glass, crimp top, flat bottomed vial.	500
07-CPV	700µL, clear glass, crimp top, tapered vial.	500
8-AC(B)-ST144	Aluminium crimp cap (blue) fitted with a blue silicone/red PTFE seal.	500

22 x 75mm and 22 x 45mm crimp top vial and caps

PART NUMBER	DESCRIPTION	PACK SIZE
20-CV	20mL, clear glass,crimp top vial.	125
10-CV	10mL, clear glass,crimp top vial.	125
20-MCBC-ST3	20mm tin plate and blue aluminium two part crimp cap - with silicone/PTFE liner.	500

22 x 75mm and 22 x 45mm screw top vial and caps

PART NUMBER	DESCRIPTION	PACK SIZE
20-HSV	20mL screw top headspace vial - clear.	125
10-HSV	10mL screw top headspace vial - clear.	125
18-MSC-ST3	18mm magnetic screw cap with 3mm silicone/PTFE liner.	500

12 x 32mm crimp top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
CTCG	2mL crimp top vial with a blue silicone/red PTFE seal.	100
CTCL	2mL crimp top vial with a blue silicone/red PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
1.1-CTVG	1.1mL, clear glass, crimp top, tapered, wide neck vial. Made from inert Chromacol Gold grade glass. Needs TTS-312 PTFE support. See page 78.	500
09-FIV	900µL Micro+ crimp top, fused insert vial, clear.	500
03-FIV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC(B)-ST144	**Aluminium crimp cap, blue, fitted with a blue silicone/red PTFE seal.**	**500**

12 x 32mm wide neck screw top vials and cap

PART NUMBER	DESCRIPTION	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fixed insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST101	Screw cap, blue, pre-fitted with a blue silicone/PTFE seal. Shore hardness value 30. Other colours and seals available. See page 36.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass. Uses the SV-TSP support sleeve. See page 28.	500
8-AC(B)-ST144	Aluminium crimp cap, blue, fitted with a blue silicone/red PTFE seal.	500

All of these autosamplers were designed around Chromacol's own vial specifications. This guarantees a perfect fit every time when using Chromacol vials. The WebSeal system of 96 well titer plates and PTFE coated silicone elastomer closures are also compatible with Endurance and Reliance autosamplers. Instrument Select, pack SPL, includes 100 wide neck crimp top vials and the corresponding standard crimp caps.

Key to products Vial Cap Seal Combination Pack

Bold items in grey are our standard products, used in the combination packs.

PART NUMBER	DESCRIPTION (12 x 32mm crimp and snap cap vials and caps)	PACK SIZE
SPL	2mL crimp top vial with a type 7 rubber/PTFE seal.	100
2-CV	**2mL, clear glass, crimp top, flat bottom, wide neck vial. With write-on patch.**	**500**
1.1-CTVG	1.1mL, clear glass, crimp top, tapered, wide neck vial. Made from inert Chromacol Gold grade glass. Needs TTS-312 PTFE support. See page 78.	500
09-FIV	900µL Micro+ crimp top fused insert vial, clear.	500
03-FIV	300µL Micro+, one piece, glass insert and clear vial combination. With write-on patch.	500
11-AC7	**Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 32.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-8RT1	11mm polyethylene snap cap pre-fitted with a red rubber/PTFE seal. Shore hardness value 58.	500

PART NUMBER	DESCRIPTION (8 x 40 and 6 x 32mm crimp top vial cap, seal)	PACK SIZE
08-CV	800µL, clear glass, crimp top, flat bottom.	500
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs support sleeve SV-S3A. See page 28.	500
8-AC7	Aluminium crimp cap fitted with a type 7, rubber/PTFE seal. Shore hardness value 60. Other colours and seals available. See page 31.	1000

PART NUMBER	DESCRIPTION (12 x 32mm wide neck screw top vials and cap)	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-8RT1	Screw cap, blue, pre-fitted with type 8, rubber/PTFE seal. Shore hardness value 58. Other colours and seals available. See page 36.	500
1.1-STVG	1.1mL, clear glass, 8mm, screw top, tapered vial made from inert Chromacol Gold grade glass needs a TTS-312 support. See page 78.	500
8-SC-8RT1	8mm screw cap prefitted type 8 rubber/PTFE seal. Shore hardness value 57.	500

PART NUMBER	DESCRIPTION (22 x 38mm crimp top vials and cap)	PACK SIZE
6-CV	6mL, clear glass, crimp top vial.	125
20-ACB	Aluminium crimp, no seal.	500
20-ST101	Blue silicone/PTFE, 1mm thick seal. Shore hardness value 30.	500

Merck/Hitachi

The 11-AC-ST101X and 8-ST14X products are suited to these autosamplers that require the use of a pre-cut seal. Merck/Hitachi have a wide variety of racks so they are compatible with a wide variety of vials. The 03-CVG, 02-CTVG, 02-CTV(A) and 01-CVG vials may be used in some trays without a support sleeve. The 2-CV crimp top vial and the 11-AC-ST101X caps are included in the Instrument Select kit – product code MEL.

Key to products Vial Cap Seal Combination Pack

Bold items in grey are our standard products

15 x 46mm screw top vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
4-SV	4mL, clear glass, screw top, flat bottom vial.	500
12-SC-ST2	12mm, black, screw cap pre-fitted with a silicone/PTFE seal. Shore hardness value 57.	500
3.5-HRSV	3.5mL screw top vial - High Recovery - uses 13mm screw caps.	500
13-SC-ST15X	13mm screw cap prefitted silicone/PTFE seal, pre-cut.	500

12 x 32mm crimp and snap cap vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
MEL	2mL crimp top vial with a pre-cut blue silicone/PTFE seal.	100
4-CV	4mL, clear glass, crimp top, flat bottom vial, 12 x 46mm.	500
2-CV	**2mL, clear glass, wide neck, crimp top, flat bottom vial. With write-on patch.**	**500**
1.1-CTVG	1.1mL, clear glass, crimp top, tapered vial made from inert Chromacol Gold grade glass, needs a PTFE support sleeve, part number TTS-312. See page 78.	500
09-FIV	900µL Micro+, crimp top, fused insert vial, clear.	500
06-PECV	600µL Micro+, polyethylene, crimp top vial with an internal tapered profile.	500
03-FIV	300µL, one piece, clear glass insert and vial combination. With write-on patch.	500
11-AC-ST101X	**Aluminium crimp cap fitted with a pre-cut blue silicone/PTFE seal.**	**500**
2-RV	2mL snap cap vial with write on patch - clear.	500
11-PSN(B)-STIX	11mm polyethylene snap cap with pre-cut silicone/PTFE seal.	500

12 x 32mm narrow & wide neck screw top vials and caps

PART NUMBER	DESCRIPTION	PACK SIZE
2-SVW	2mL, clear glass, flat bottom, screw top, wide neck vial. With write-on patch.	500
09-FISV	900µL Micro+ screw top, fused insert vial, clear.	500
03-FISV	300µL Micro+, one piece, clear glass insert and vial combination. With write-on patch.	500
9-SC(B)-ST1X	Screw cap, blue, pre-fitted with a blue silicone/PTFE pre-cut seal. Other colours and seals available. See page 36.	500
2-SV	2mL screw top vial with write on patch - clear.	500
1.1-STVG	1.1mL, clear glass, 8mm, screw top, tapered vial made from inert Chromacol Gold grade glass, needs a TTS-312 support. See page 78.	500
8-SC	8mm screw cap, black. For use with 2-SV or 1.1-STVG	500
8-ST14X	8mm pre-cut silicone/PTFE seal.	500

6 x 32mm crimp top vial and cap

PART NUMBER	DESCRIPTION	PACK SIZE
03-CVG	300µL, clear glass, crimp top, round bottom vial, made from inert Chromacol Gold grade glass, needs support sleeve SV-S1. See page 28.	500
8-AC-ST101X	Aluminium crimp cap fitted with a pre-cut blue silicone/PTFE seal.	500

Vials, Caps and Seals




This section includes the full range of Chromacol's vials, caps, seals crimping tools, decappers and storage racks plus information regarding compatibility.

We offer custom manufactured capabilities to meet all of your vial requirements.

Chromacol Glass Specifications

PROPERTY	GOLD GRADE	NEUTRAL TYPE 1
Working Point	1255°C	1140°C
Strain Point	513°C	530°C
Annealing Point	565°C	570°C
Softening Point	827°C	785°C
Linear Coefficient of Expansion (from 0 to 300°C), in./in./°C	$32x10^{-7}$	$55x10^{-7}$
Density grams per mL	2.22	2.33
Refractive Index—Sodium D line (.5893 microns)	1.47	1.49
Visible Light Transmission, 2 mm thickness	92%	91%
Specific Heat (in g. cals per g. deg.) (25 to 175°C) (25 to 175°C)	0.204	0.204
Thermal Conductivity (in cals/cm/cm2/sec/°C)	0.0027	0.0026

- Working Point — the temperature at which glass has a viscosity of 104 poises. At this temperature, glass is soft enough for most working or sealing operations.
- Softening Point — the temperature at which glass has a viscosity of 107.6 poises. In this temperature range glass will deform noticeably under its own weight: ASTM C 338.
- Annealing Point — the temperature at which the internal stress caused by rapid cooling from lampworking or forming temperatures may be substantially removed in a matter of minutes. It is determined by measuring the elongation rate versus temperature of a fiber of glass under conditions prescribed by ASTM Designation C 336. The values given here are typical for production glasses.

Typical Glass Composition

Different glass types contain different proportions of oxides to give characteristics such as colour and different expansion coefficients.

Oxide by %

Glass Type	SiO_2	B_2O_3	TiO_2	K_2O	AL_2O_3	Fe_2O_3	Na_2O	BaO	CaO	MgO
Soda Glass	69	1		3	4		13	2	5	3
Borosilicate-Clear	75	10.5			5		7	1	1.5	
Borosilicate-Amber	70	7	5	1	6	1	7	2	1	
Borosilicate-Gold Grade	80.6	13			2.3		4			

Hydrolytic Extraction

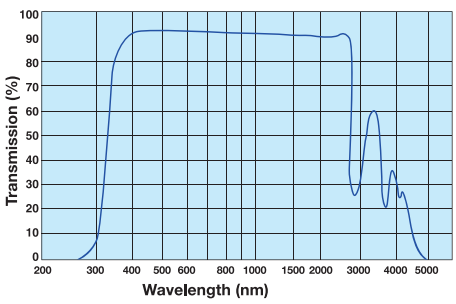
Chromacol autosampler vials are manufactured from glass meeting the international standards for hydrolytic extraction.

- BS ISO 3585, DIN 12217 borosilicate glass
- ASTM E-438 Type 1 class A borosilicate glass
- US PharmacopoeiaType 1 borosilicate glass
- European PharmacopoeiaType 1 glass

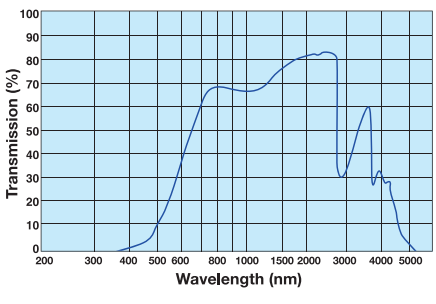
Light Transmission

The choice of clear or amber glass may also be made in order to deal with the exposure of sample to incident UV-Vis light.

Clear Glass Uv-Vis Transmission Spectrum



Amber Glass Uv-Vis Transmission Spectrum



Snap Cap Vials and Caps

Chromacol's snap cap vial, the 2-RV, uses a polyethylene (PE) cap with a pre-fitted seal that needs only light pressure to close and seal onto the dual concentric rings around the rim of the vial.

No tools are needed to seal or unseal these vials and the caps may be easily removed to recover a precious sample or for safe disposal.

The 2-RV has a large target area which makes it much safer for the autosampler needle and features a ceramic write on patch for sample identification.

These vials, compatible with all robotic autosamplers, can be used with many of Chromacol's clean, rubber and silicone 11mm seals. This means that a cap and seal combination can be found for almost any solvent used in chromatography.

Key to products Vial Cap

Vials

PART NUMBER	DESCRIPTION	SIZE	PACK SIZE
2-RV	2mL snap cap vial in clear glass, with write-on patch.	12 x 32mm	500
2-RV(A)	2mL snap cap vial in amber glass, with write-on patch.	12 x 32mm	500
1.5-HRRV	1.5mL High Recovery snap cap vial – clear.	12 x 32mm	100
1.5-HRRV(S)	1.5mL High Recovery snap cap vial – clear - silanised.	12 x 32mm	100
03-FIRV	300µL fused insert snap cap vial – clear.	12 x 32mm	500
03-FIRV(A)	300µL fused insert snap cap vial – amber.	12 x 32mm	500

11mm Snap Caps

PART NUMBER	DESCRIPTION	PACK SIZE
11-PSN-8RT1	11mm PE snap cap pre-fitted with a red rubber/PTFE seal - black.	500
11-PSN-ST1	11mm PE snap cap pre-fitted with a silicone/PTFE seal - black.	500
11-PSN(B)	11mm PE snap cap with an integral PE seal - blue.	500
11-PSN(B)-T02	11mm PE snap cap pre-fitted with a PTFE seal - blue.	500
11-PSN(B)-TST1	11mm PE snap cap pre-fitted with a PTFE/silicone/PTFE seal - blue.	500
11-PSN(B)-8RT1	11mm PE snap cap pre-fitted with a red rubber/PTFE seal - blue.	500
11-PSN(B)-ST1	11mm PE snap cap pre-fitted with a silicone/PTFE seal - blue.	500
11-PSN(B)-ST101	11mm PE snap cap pre-fitted with a blue silicone/PTFE seal - blue.	500
11-PSN(B)-ST1X	11mm PE snap cap pre-slit PTFE/silicone seal - blue.	500
11-PSN(G)-ST1X	11mm PE snap cap pre-slit PTFE/silicone seal - green.	500
11-PSN(R)-T02	11mm PE snap cap pre-fitted with a PTFE seal - red.	500
11-PSN(Y)-8RT1	11mm PE snap cap pre-fitted with a red rubber/PTFE seal -yellow.	500
11-PSN(Y)-ST1	11mm PE snap cap pre-fitted with a silicone/PTFE seal - yellow.	500

2-RV

2-RV(A)

1.5-HRRV

03-FIRV

03-FIRV(A)

Microsampling Using Micro+

Chromacol Micro+ vials suited to microsampling, trace analysis, environmental work and clinical investigations. They provide a very convenient way for analysts to work with small samples, e.g. down to 4µL, allowing for faster sample preparation with a consequential reduction in analysis costs.

09-FIV

09-FISV

03-FIV

03-FIV(A)

03-FISV

03-FISV(A)

03-FIRV

Our precision manufacturing process reassures an accurate positioning of the taper, which is fused to the base.

The write-on ceramic label ensures an accurate storage and retrieval.

Micro+ vials are compatible with autosamplers that use standard 2ml, 12 x 32mm vials.

03-FIRV(A)

Key to products | Vial

PART NUMBER	DESCRIPTION	Micro+ SIZE	PACK SIZE
09-FIV	900µL crimp top, fused insert vial, clear.	12 x 32mm	500
09-FISV	900µL screw top, fused insert vial, clear.	12 x 32mm	500
03-FIV	300µL glass insert, fused into a 2mL crimp top vial.	12 x 32mm	500
03-FIV(A)	300µL glass insert, fused into an amber 2mL crimp top vial.	12 x 32mm	500
03-FISV	300µL glass insert, fused into a 2mL screw top vial.	12 x 32mm	500
03-FISV(A)	300µL glass insert, fused into an amber 2mL screw top vial.	12 x 32mm	500
03-FIRV	300µL fused insert snap cap vial – clear.	12 x 32mm	500
03-FIRV(A)	300µL fused insert snap cap vial – amber.	12 x 32mm	500

Accessories and notes

All of these vials use standard caps and accessories that are normally used with either 12 x 32mm crimp top vials (see page 32), 12 x 32mm screw top vials (see page 36), or 12 x 32mm snap cap vials (see page 25).

Key to products Vial Accessory

PART NUMBER	DESCRIPTION	Microsampling	SIZE	PACK SIZE
03-MTV	300µL tapered insert for 2.5-CV vials.		5 x 38mm	1000
03-NV	300µL flat bottomed insert for wide necked 2mL vials.		6 x 31mm	1000
02-MTVMP	200µL tapered insert for narrow necked vials – mandrel point.		5 x 30mm	500
02-MTVWG	200µL tapered insert for wide necked 2mL vials, Gold grade glass.		6 x 30mm	1000
02-MTV	200µL tapered insert for narrow necked 2mL vials.		5 x 30mm	1000
02-NV	200µL flat bottomed insert for narrow necked 2mL vials.		5 x 31mm	1000

PART NUMBER	DESCRIPTION	Accessory	PACK SIZE
MTS-1	Polyethylene support for tapered glass inserts.		500

ADDITIONAL NOTES

The 02-MTVWG, 02-MTVMP and 02-MTV require the use of the MTS-1 spring support.

Residual Volumes

The ability of an autosampler to extract the last few microlitres from these vials is dependent on the bottom profile. The best recovery is from a tapered insert or high recovery base. The values given are for conical needles with positioning within 2mm or 1mm of the vial base. For side-entry needles the volumes will be slightly higher. Recovery will also be affected by the solvent viscosity and syringe draw capacity.

VIAL TYPE	PRODUCT CODE	RESIDUAL VOLUMES 2mm FROM BASE	RESIDUAL VOLUMES 1mm FROM BASE
2mL flat base	2-CV	157.1µL	78.6µL
Round bottomed	1.1-CRV	14.1µL	7.1µL
300µL fused insert	03-FIV	1.6µL	0.8µL
1.5mL High Recovery	1.5-HRCV	3.5µL	1.8µL
200µL SCI-VI™	02-CTVG	0.4µL	0.2µL
900µL fused insert	09-FIV	1.6µL	0.8µL
Conical tapered insert	02-MTVWG	0.9µL	0.4µL

Mandrel Point Inserts

Where extraction of the last few microlitres of sample is critical then an internal mandrel point insert should be used. The mandrel point gives a controlled inner profile that allows the extraction needle to consistently reach the last few microlitres of sample.

Microsampling - Sci-Vi System

PART NUMBER	SIZE	DESCRIPTION
SV-S1	12 x 29mm	Designed to replace standard 12 x 32mm vials. Suitable for most autosamplers.
SV-S2	8 x 27mm	Designed to replace 8 x 30mm vials (08-CV).
SV-S3A	12 x 31mm	Designed to replace standard 12 x 32mm vials. Similar to the SV-S1, but with a solid base.
SV-S4	12 x 32mm	Designed to be used in the Agilent 1090A. This can also be used in most autosamplers to protect light sensitive materials.
SV-S11A	12 x 33mm	Specially designed to replace standard 12 x 32mm vials in robotic autosamplers. May also be used in most autosamplers.
SV-S11G	12 x 33mm	Glass version of the SV-S11A. Specially designed to replace standard 12 x 32mm vials in robotic autosamplers. May also be used in most autosamplers. Comes with a T-25 tray.
SV-S12A	23 x 13mm	Replaces 12 x 32mm screw top vials with flanged caps, when used in Shimadzu and Jasco instruments.
SV-S14	12 x 33mm	Designed to replace a standard 12 x 32mm vial. Suitable for most autosamplers. This has a longer neck than the SV-S11A, and is ideal for the Agilent 7673A.
SV-CE	12 x 40mm	Designed to replace the 2.5-CV (12 x 40mm vial) on the Thermo Scientific AS 800 (CE and Fisons).
SV-TSP	12 x 34mm	Designed to replace a standard 12 x 32mm vial on Thermo Scientific instruments.
SV-S15	15 x 45mm	Designed to replace a standard 15 x 46mm 4mL vial in Waters Wisp, and any other instrument that uses 4mL vials.

ADDITIONAL NOTES

- All of the Sci-Vi system sleeves are made from PTFE apart from the SV-S4, SV-S15 and SV-S11G, which are made from black polyethylene, polyethylene and glass respectively.
- The Sci-Vi system may now be used with our low cost polyethylene snap cap 8-PEC1 and 8-PEC1X. In some cases the skirt of the 8-PEC1 and 8-PEC1X is widened as it grips the vial so it may not fit the SV-S3A, SV-S11A, SV-S11G and SV-S12A sleeves which have a cap recess. However, they are compatible with the SV-TSP.
- Sci-Vi system sleeves should not be used with the Spectra-Physics heater module.
- The SV-S2 requires the use of an S-06 spring when used in the Waters 96 vial tray.
- The Fisons AS 800 requires the additional use of a support sleeve, reference number PWS-11. See page 78.
- The PE ISS-200/Series 200, Gilson™, Kontron™, Merck/Hitatchi, Jasco and CMA all have carousels or trays which allow the use of the vials from the Sci-Vi system to be used without the need for a support sleeve.
- SV-S4 can be used for additional light protection.

Microsampling - Sci-Vi System

Key to products Vial Cap Plug Accessory

Vials

PART NUMBER	DESCRIPTION	SIZE	PACK SIZE
03-CVG	300µL Sci-Vi crimp top vial, round bottomed, Gold grade glass.	6 x 32 mm	500
02-CTV(A)	200µL Sci-Vi crimp top vial, tapered, amber glass.	6 x 32 mm	500
02-CTVG	200µL Sci-Vi crimp top vial, tapered, Gold grade glass.	6 x 32 mm	500
01-CVG	100µL Sci-Vi crimp top vial, round bottomed, Gold grade glass.	6 x 32 mm	500

8mm Crimp Caps

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-AC6	Cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	1000
8-AC6(B)	Blue cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	1000
8-AC6(R)	Red cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	1000
8-AC7	Cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	1000
8-ACB	Blank cap - no seal.		1000
8-AC-CBT1	Cap with grey chlorobutyl/PTFE seal.	For long term storage.	500
8-AC(B)-ST144	Blue cap with blue silicone/red PTFE seal.	Preferred for Fisons.	500
8-AC-ST15	Cap with white silicone/red PTFE seal.	Preferred for ICI and Pharmacia.	500
8-AC-ST101	Cap with blue silicone/PTFE seal.	Preferred for Fisons and Thermo Scientific. Good for ECD.	500
8-AC-ST101X	Cap with blue silicone/PTFE seal.	Pre-cut, for PerkinElmer ISS-200, Merck-Hitachi.	500
8-ACT	Cap with PTFE seal.	Suitable for PerkinElmer ISS-100.	1000
8-AC-TST1	Cap with red PTFE/white silicone/red PTFE seal.	Anti-coring, preferred for Gilson.	500
8-AC-V1	Cap with Viton™ seal.	Good for ECD.	500

Plugs and Snap Caps

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-PEP1	8mm polyethylene plug.		1000
8-PEC1	8mm polyethylene snap cap.		1000
8-PEC1X	8mm polyethylene snap cap.	Pre-cut, suitable for PerkinElmer (LC).	1000
8-PEC-ST1	8mm snap cap with a silicone/PTFE seal.		1000

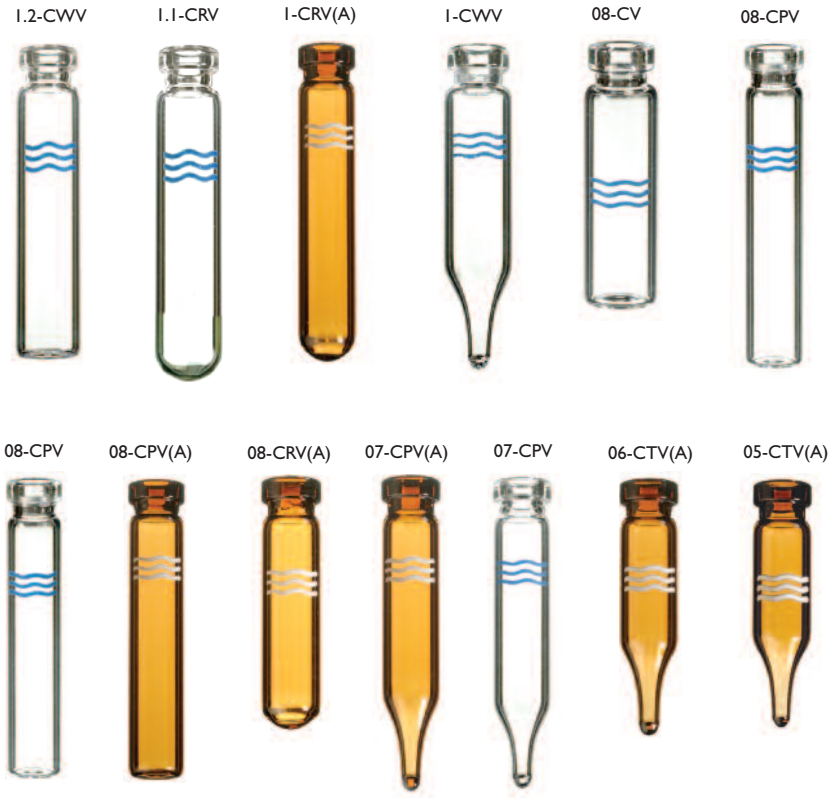
Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
CMS-0	Crimpmate bench-top crimp station, no jaws.	1
CMSP-0	Pneumatic Autocrimp™ benchtop crimp station, no jaws.	1
CMS-8	Crimpmate benchtop crimp station with 8mm jaw.	1
CMJ-8	Crimpmate benchtop crimp station jaw for 8mm crimp caps.	1
CDJ-8	Crimpmate benchtop crimp station de-capping jaw for 8mm crimp caps.	1
CR-8	Hand crimper for 8mm crimp caps.	1
DCR-8	De-capper for 8mm crimp caps - pliers type.	1
DCB-8	De-capper for 8mm crimp caps - hand crimper type.	1
T-200	Foam tray - 200 vial capacity for vials with 8mm o.d.	5
T-15/302	Hard tray - 15 vial capacity for vials with both 6mm and 8mm o.d.	1
T-104	Aluminium tray - 104 vials capacity for vials with 11mm o.d.	5
T-105	Foam tray - 105 vial capacity for vials with 11mm o.d.	5
T-25	Aluminium tray - 25 vials capacity for vials with 11mm o.d.	1

Vials Using 8mm Crimp Caps

Key to products Vial Cap Plug Accessory

PART NUMBER	DESCRIPTION	Vials Using 8mm Crimp Caps	SIZE	PACK SIZE
1.2-CWV	1.2 mL crimp top vial - clear - for Waters.		8 x 40 mm	500
1.1-CRV	1.1mL crimp top round bottom vial - clear for 96 square deep well plates.		7 x 42 mm	500
1-CRV(A)	1mL crimp top round bottom vial - amber.		7 x 40 mm	500
1-CWV	1mL crimp top tapered vial - clear - for Waters.		8 x 40 mm	500
08-CV	800µL crimp top vial - clear.		8 x 30 mm	500
08-CPV(A)	800µL crimp top vial - amber.		7 x 40 mm	500
08-CPV	800µL crimp top vial - clear.		7 x 40 mm	500
08-CRV(A)	800µL crimp top round bottom vial - amber.		7 x 32 mm	500
07-CPV(A)	700µL crimp top tapered vial - amber.		7 x 40 mm	500
07-CPV	700µL crimp top tapered vial - clear.		7 x 40 mm	500
06-CTV(A)	600µL crimp top tapered vial - amber.		7 x 32 mm	500
05-CTV(A)	500µL crimp top tapered vial - amber.		7 x 30 mm	500



ADDITIONAL NOTES

- The 1.2-CWV and 1-CWV may require a Fisons polyethylene support when used in the AS 800.
- The 07-CPV(A) and 07-CPV are used by some Waters' customers as limited volume inserts in the 4mL vial, where an S-15 spring is used.
- The 07-CPV(A) and 07-CPV can also be used in DuPont™ autosamplers in the 5mL vial (5-SV) where an S-40 spring is used.
- The 06-CTV(A) and 08-CTV(A) require the use of the WS-5 support sleeve. Any autosampler which uses the SV-S11A/SV-S11G may use these vials.
- The preferred type of closures for the HP 1050A are the 8-AC-TST1 or 8-PEC1.
- The 1.1-CRV vial requires the use of a 96 well titer plate reference number 1.1-MTPS-96

Vials Using 8mm Crimp Caps

8mm Crimp Caps

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-AC6	Cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	1000
8-AC6(B)	Blue cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	1000
8-AC6(R)	Red cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	1000
8-AC7	Cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	1000
8-ACB	Blank cap - with hole.		1000
8-AC-CBT1	Cap with grey chlorobutyl/PTFE seal.	For long term storage.	500
8-AC(B)-ST144	Blue cap with blue silicone/red PTFE seal.	Preferred for Fisons.	500
8-AC-ST15	Cap with white silicone/red PTFE seal.	Preferred for ICI and Pharmacia.	500
8-AC-ST101	Cap with blue silicone/PTFE seal.	Preferred for Fisons and Thermo Scientific.Good for ECD.	500
8-AC-ST101X	Cap with blue silicone/PTFE seal.	Pre-cut, for PerkinElmer ISS-200, Merck-Hitachi.	500
8-ACT	Cap with PTFE seal.	Suitable for PerkinElmer ISS-100.	1000
8-AC-TST1	Cap with red PTFE/white silicone/red PTFE seal.	Anti-coring, preferred for Gilson.	500
8-AC-V1	Cap with viton seal.	Good for ECD.	500

Plastic Caps and Plugs

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-PEP1	8mm polyethylene plug.		1000
8-PEC1	8mm polyethylene snap cap.		1000
8-PEC1X	8mm polyethylene snap cap.	Pre-cut, suitable for PerkinElmer (LC).	1000
8-PEC-ST1	8mm snap cap with a silicone/PTFE seal.		1000

Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
CMS-0	Crimpmate™ bench-top crimp station, no jaws.	1
CMSP-0	Pneumatic Autocrimp benchtop crimp station, no jaws.	1
CMS-8	Crimpmate benchtop crimp station with 8mm jaw.	1
CMJ-8	Crimpmate benchtop crimp station jaw for 8mm crimp caps.	1
CDJ-8	Crimpmate benchtop crimp station de-capping jaw for 8mm crimp caps.	1
CR-8	Hand crimper for 8mm crimp caps.	1
DCR-8	De-capper for 8mm crimp caps - pliers type.	1
DCB-8	De-capper for 8mm crimp caps - hand crimper type.	1
T-200	Foam tray-200 vial capacity for vials with 8mm o.d.	5
T-15/302	Hard tray-15 vial capacity for vials with both 6mm and 8mm o.d.	1
T-162	Aluminium tray-162 vial capacity for vials with 9mm o.d.	5

Vials Using 11mm Crimp Caps

Key to products Vial Cap Seal Plug Accessory

4-CV

2.5-CV

2-CV

2-CV(A)

2-CVG

Vials Using 11mm Crimp Caps

PART NUMBER	DESCRIPTION	SIZE	PACK SIZE
4-CV	4mL crimp top vial - clear.	15 x 46 mm	500
2.5-CV	2.5mL crimp top vial - clear.	12 x 40 mm	500
2-CV	2mL crimp top vial - clear wide mouth with write on patch.	12 x 32 mm	500
2-CV(A)	2mL crimp top vial - amber wide mouth with write on patch.	12 x 32 mm	500
2-CVG	2mL crimp top vial - clear gold grade - with write on patch.	12 x 32 mm	500
2-CRV	2mL round bottom vial with write on patch - clear.	12 x 32 mm	500
1.5-HRCV	1.5mL crimp top vial - clear - High Recovery.	12 x 32 mm	100
1.1-CTVG	1.1mL crimp top tapered vial - clear.	12 x 32 mm	500
1.1-CTV(A)	1.1mL crimp top tapered vial - amber.	12 x 32 mm	500
09-CTV	900µL crimp top tapered vial - clear.	10 x 32 mm	500
09-FIV	900µL crimp top fused insert vial - clear.	12 x 32 mm	500
07-HRPMPCV	700µL PMP crimp vial - High Recovery.	12 x 32mm	100
06-PECV	600µL polyethylene crimp top vial.	12 x 32 mm	500
06-PPCV	600µL polypropylene crimp top vial.	12 x 32 mm	500
03-FIV	300µL crimp top fused insert vial - clear with write on patch.	12 x 32 mm	500
03-FIV(A)	300µL crimp top fused insert vial-amber with write on patch.	12 x 32 mm	500
03-PECV	300µL polyethylene crimp top vial.	12 x 30 mm	500

A range of PTFE vials is also available. See page 39.

11mm Crimp Caps

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
11-AC6	Cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	500
11-AC6(B)	Blue cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	500
11-AC6(G)	Green cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	500
11-AC6(GO)	Gold cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	500
11-AC6(R)	Red cap with type 6 natural rubber/PTFE seal.	Sulphur free, ideal for ECD.	500
11-AC7	Cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	500
11-AC7(B)	Blue cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	500
11-AC7(G)	Green cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	500
11-AC7(GO)	Gold cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	500
11-AC7(R)	Red cap with type 7 natural rubber/PTFE seal.	Standard, suitable for Agilent.	500
11-ACB	Blank cap - with hole.	For use with the 11-LLX.	500
11-LLX	Blue silicone/PTFE seal.	For use with liquid liquid extraction.	100
11-AC-CBT1	Cap with grey chlorobutyl/PTFE seal.	For long term storage.	500
11-AC-PP	Cap with polypropylene seal.	Suitable for PerkinElmer(LC).	500
11-AC(B)-ST144	Blue cap with blue silicone/red PTFE seal.	Preferred for Fisons.	500
11-AC-ST15	Cap with white silicone/red PTFE seal.	Preferred for ICI and Pharmacia.	500
11-AC-ST101	Cap with blue silicone/PTFE seal.	For Fisons, Shimadzu and Thermo Scientific. Good for ECD.	500
11-AC-ST101X	Cap with blue silicone/PTFE seal.	Pre-cut, for PerkinElmer ISS-200, Merck-Hitachi.	500
11-ACT	Cap with PTFE seal.	Suitable for PerkinElmer ISS-100.	1000
11-AC-TST1	Cap with red PTFE/white silicone/red PTFE seal.	Anti-coring, preferred for Gilson.	500
11-AC-V1	Cap with Viton seal.	Good for ECD.	500
11-MC-8RT1	Cap with type 8 natural rubber/PTFE seal.	Magnetic, suitable for CTC/Leap.	500
11-MC-ST101	Cap with blue silicone/PTFE seal.	Magnetic, suitable for CTC/Leap.	500
11-MC-ST15	Cap with white silicone/red PTFE seal.	Magnetic, suitable for CTC/Leap.	500

Vials Using 11mm Crimp Caps

2-CRV

1.5-HRCV

1.1-CTVG

1.1-CTV(A)

09-CTV

09-FIV

Plastic Caps and Plugs

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
11-PEP2(B)	11mm black polyethylene plug.	For Varian autosamplers.	1000
11-PEP2W	11mm polyethylene plug for wide necked vials.		1000
11-PEPC3X	11mm polyethylene snap cap plug for narrow necked vials.	Anti vacuum generation, pre-cut.	1000
11-PEPC3XW	11mm snap cap plug for wide necked vials.	Anti vacuum generation, pre-cut.	1000
11-PEC1	11mm polyethylene snap cap.	Ideal for single injections.	1000
11-PEC1X	11mm polyethylene snap cap.	Pre-cut, suitable for PerkinElmer (LC).	1000
11-PEC-8RT1	11mm snap cap, rubber/PTFE seal.	General purpose, does not require a crimper.	1000
11-PEC-ST1	11mm snap cap, white silicone/red PTFE seal.	General purpose, does not require a crimper.	1000

07-HRPMPCV

06-PECV

06-PPCV

03-FIV

03-FIV(A)

03-PECV

Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
PWS-11	Plastic support sleeve for 1.1-CTVG/1.1-STVG in AS 800.	100
RTS-1	Rubber support sleeve for 1.1-CTVG.	500
TTS-312	PTFE support sleeve for 1.1-CTVG.	50
TTS-313	PTFE support sleeve for use with 1.1-CTVG with HP autosamplers except 7673 1/11.	50
TTS-314	PTFE support sleeve with solid base for use with 1.1-CTVG with Varian autosamplers.	50
WS-6	Plastic support sleeve for the 09-CTV.	100
CMS-0	Crimpmate benchtop crimp station, no jaws.	1
CMSP-0	Pneumatic Autocrimp benchtop crimp station, no jaws.	1
CMS-11	Crimpmate benchtop crimp station with 11mm jaw.	1
CMJ-11	Crimpmate benchtop crimp station jaw for 11mm crimp caps.	1
CDJ-11	Crimpmate benchtop crimp station de-capping jaw for 11mm crimp caps.	1
CR-11	Hand crimper for 11mm crimp caps.	1
DCR-11	De-capper for 11mm crimp caps - pliers type.	1
DCB-11	De-capper for 11mm crimp caps - hand crimper type.	1
ECR-11	11mm electronic hand-held crimper.	1
EDCB-11	11mm electronic hand-held decappers.	1
LP-1	Labelling pen for writing on vials with 'write-on' patches.	1
T-105	Foam tray-105 vial capacity for vials with 12mm o.d.	5
T-15/308	Hard tray-15 vial capacity for vials with both 6mm and 12mm o.d.	1
T-25	Aluminium tray-25 vial capacity for vials with 12mm o.d.	1
T-104	Aluminium tray-104 vial capacity for vials with 12mm o.d.	5
B-100	Plastic storage trays with lids for 2mL vials, assorted colours.	5

ADDITIONAL NOTES

- Due to lack of lateral support in some carousels, support sleeves may be required for 1.1-CTVG. See page 78.
- 11-PEPC3X and 11-PEPC3XW are not suitable for Spectra-Physics.
- In order to use a 1.1-CTVG in the Fisons AS 800, a TTS-312 and a PWS-11 must be used.
- The 09-CTV must be used with a WS-6 support. See page 78.
- The 06-PECV/06-PPCV have an internal rounded bottom and are suitable for microsampling work.

Vials Using 8mm Screw Caps

Key to products Vial Cap Seal Plug Accessory

Vials Using 8mm Screw Caps

PART NUMBER	DESCRIPTION	SIZE	PACK SIZE
2-SV	2mL screw top vial with write on patch - clear.	12 x 32 mm	500
2-SV(A)	2mL screw top vial with write on patch - amber.	12 x 32 mm	500
2-SVG	2mL screw top vial with write on patch - clear gold grade.	12 x 32 mm	500
1.1-STVG	1.1mL screw top tapered vial - clear gold grade.	12 x 32 mm	500
06-PESV	600µL polyethylene screw top vial.	12 x 32 mm	500
06-PPSV	600µL polypropylene screw top vial.	12 x 32 mm	500
03-PPSV	300µL polypropylene screw top vial.	12 x 32 mm	500

8mm Screw Caps

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-SC-8RT1	Cap with rubber/PTFE seal.	General purpose.	500
8-SC-ST15	Cap with white silicone/red PTFE seal.		500
8-SC	Black cap.		500
8-SC(B)	Blue cap for Agilent.	Screw cap for Agilent 7673 with 2-SV vials.	500
8-SC(BT)	Blue cap.		500
8-SC(R)	Red cap.		500
8-SC(W)	White cap.		500
8-SC(Y)	Yellow cap.		500
8-SCJ	Black cap with wider flange.	For Jasco, Hitachi and Shimadzu.	500
8-SCJ(R)	Red cap with wider flange.	For Jasco, Hitachi and Shimadzu.	500
8-SCJ(W)	White cap with wider flange.	For Jasco, Hitachi and Shimadzu.	500
8-SCJ(Y)	Yellow cap with wider flange.	For Jasco, Hitachi and Shimadzu.	500
8-SCS	Black solid cap, no central hole.	For long term storage and general purpose.	500

8mm Seals

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-6RT1	Type 6 natural rubber/PTFE seal.		1000
8-ST15	Red silicone/white PTFE seal.	Standard.	500
8-ST14	Blue silicone/PTFE seal.		500
8-ST14X	Blue silicone/PTFE seal, pre-cut.	Anti vacuum generation.	500
8-ST143	White silicone/PTFE seal.	Extremely soft, suitable for Shimadzu.	500
8-ST101	Blue silicone/PTFE seal.	Good for ECD.	500
8-TST11	PTFE/blue silicone/PTFE seal.		500
8-TST1	Red PTFE/white silicone/red PTFE seal.		500
8-T02	PTFE seal.		1000

Plugs

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
8-SCP	8mm polyethylene snap cap plug.	Push fit screw cap.	500
11-PEP2(B)	11mm black polyethylene plug.	For Varian autosamplers with I.R. detectors.	1000

Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
PWS-11	Plastic support sleeve for use in the Fisons AS 800 autosampler.	100
RTS-1	Rubber support sleeve for 1.1-STVG.	500
TTS-312	PTFE support sleeve for 1.1-STVG.	50
TTS-313	PTFE support sleeve for use with 1.1-STVG with Agilent autosamplers except 7673 1/11.	50
TTS-314	PTFE support sleeve with blank base for use with 1.1-STVG with Varian.	50
T-105	Foam tray-105 vial capacity for vials with 12mm o.d.	5
T-15/308	Hard tray-15 vial capacity for vials with both 6mm and 12mm o.d.	1
T-25	Aluminium tray-25 vial capacity for vials with 12mm o.d.	1
T-104	Aluminium tray-104 vial capacity for vials with 12mm o.d.	5
B-100	Plastic storage trays with lids for 2mL vials, assorted colours.	5

ADDITIONAL NOTES

- Customers using the PerkinElmer AutoSystem, Spectra-Physics/Thermo Scientific or Varian should use the following caps: 8-SC, 8-SC(BT), 8-SC(R), 8-SC-(W) or 8-SC(Y).
- The 8-SCP is not compatible with Shimadzu, Spectra-Physics/Thermo Scientific or Varian.

2-SVG

2-SV

2-SV(A)

1.1-STVG

06-PESV

06-PPSV

03-PPSV

All of these vials are narrow necked

Vials Using 9 and 11mm Screw Caps

Key to products Vial Cap Seal Accessory

PART NUMBER	DESCRIPTION	Vials	SIZE	PACK SIZE
4-SVQ	4mL screw top vial - clear - For Thermo Scientific.		15 x 46mm	500
2-DV	2mL Double Top™ vial - clear – uses 11mm screw caps.		12 x 32mm	500
2-DV(A)	2mL Double Top vial - amber – uses 11mm screw caps.		12 x 32mm	500
2-SVW	2mL screw top vial with write-on patch – clear.		12 x 32mm	500
2-SVW(A)	2mL screw top vial with write-on patch – amber.		12 x 32mm	500
1.5-HRSV	1.5mL High Recovery screw top vial – clear.		12 x 32mm	100
1.5-HRSV(S)	1.5mL High Recovery screw top vial – clear - silanised.		12 x 32mm	100
1.5-HRSV(A)	1.5mL High Recovery screw top vial – amber.		12 x 32mm	100
1.5-HRSV(A)S	1.5mL High Recovery screw top vial – amber - silanised.		12 x 32mm	100
09-FISV	900µL fused insert screw top vial – clear.		12 x 32mm	500
03-FISV	300µL fused insert screw top vial – clear.		12 x 32mm	500
03-FISV(A)	300µL fused insert screw top vial – amber.		12 x 32mm	500
03-PPSVW	300µL polypropylene screw top vial.		12 x 32mm	500

PART NUMBER	DESCRIPTION	Screw Caps and Seals for 2-DV and 2-DV(A)	PACK SIZE
11-DSC(R)-ST14X	11mm screw cap prefitted with a silicone/PTFE seal, pre-cut.		500
11-DSC(R)	11mm red screw cap.		500
11-6RT1	11mm type 6 red rubber/PTFE seal.		500
11-ST15	11mm white silicone/red PTFE seal.		500
11-ST14	11mm blue silicone/clear PTFE seal.		500
11-T02	11mm PTFE seal.		1000

PART NUMBER	DESCRIPTION	Screw Caps for 09-FISV, 2-SVW, 2-SVW(A), 03-FISV, 4-SVQ and 03-FISV(A)	PACK SIZE
9-SC(BLK)-BST1	9mm screw cap(black), prefitted with a bonded silicone/PTFE seal.		500
9-SC(GY)-BST1X	9mm screw cap(grey), prefitted with a bonded pre-cut silicone/PTFE seal.		500
9-SC(B)-8RT1	9mm screw cap (blue) prefitted rubber/PTFE seal.		500
9-SC(B)-8RT1X	9mm screw cap (blue) prefitted rubber/PTFE seal pre-cut.		500
9-SC(B)-ST1	9mm screw cap (blue) prefitted silicone/PTFE seal.		500
9-SC(B)-ST101	9mm screw cap (blue) prefitted silicone/PTFE seal for Thermo Scientific.		500
9-SC(B)-ST1X	9mm screw cap (blue) prefitted silicone/PTFE seal pre-cut.		500
9-SC(B)-TST1	9mm screw cap (blue) prefitted PTFE/silicone/PTFE seal.		500
9-SCS-8RT1	9mm solid screw cap (blue) prefitted rubber/PTFE seal - ideal for storage.		500
9-SCJ-ST15	9mm screw cap (black) with flange, prefitted with a silicone/PTFE seal.		500
9-SCJ-8RT1	9mm screw cap (black) with flange, prefitted with a rubber/PTFE seal.		500
9-SCJ-ST101	9mm screw cap (black) with flange, prefitted with a soft silicone/PTFE seal.		500
9-SCJ(W)-ST15	9mm screw cap (white) with flange, prefitted with a silicone/PTFE seal.		500
9-SCJ(W)-8RT1	9mm screw cap (white) with flange, prefitted with a rubber/PTFE seal.		500
9-SCJ(W)-ST101	9mm screw cap (white) with flange, prefitted with a soft silicone/PTFE seal.		500
9-SCJ(Y)-ST15	9mm screw cap (yellow) with flange, prefitted with a silicone/PTFE seal.		500
9-SCJ(Y)-8RT1	9mm screw cap (yellow) with flange, prefitted with a rubber/PTFE seal.		500
9-SCJ(Y)-ST101	9mm screw cap (yellow) with flange, prefitted with a soft silicone/PTFE seal.		500
9-MC*	Magnetic Cover for 9-SCJ Caps when used on Thermo Scientific and CTC.		100
9-SCJM-ST101*	9mm magnetic cover and screw cap, prefitted with a soft silicone/PTFE seal.		100

**The 9-MC is a magnetic cap that fits over any 9-SCJ cap, enabling wide necked screw top vials to be use in an autosampler where magnetic transport is used.*

9-SCJM-ST101 with 2-SVW

Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
B-100	Plastic storage tray with lid holding 100 vials with an o.d. of 12mm.	5
LP-1	Labelling pen for writing on vials with a 'write-on' patch.	1
T-105	Foam tray holding 105 vials with an o.d. of 12mm.	5
T-15/308	Hard tray holding 15 vials with an o.d. of 12mm and 15 vials with an o.d. of 6mm.	1
T-25	Aluminium tray holding 25 vials with an o.d. of 12mm.	1
T-104	Aluminium tray holding 104 vials with an o.d. of 12mm.	5

4-SVQ

2-DV

2-DV(A)

2-SVW

2-SVW(A)

1.5-HRSV

1.5-HRSV(A)

09-FISV

03-FISV

03-FISV(A)

03-PPSVW

All of these vials are wide necked

Vials Using 12mm and 13mm Screw Caps

Key to products Vial Cap Seal Plug Accessory

Vials

PART NUMBER	DESCRIPTION	SIZE	PACK SIZE
10-SV	10mL screw top round bottom vial - clear.	13 x 100mm	125
5-SV	5mL screw top round bottom vial - clear.	13 x 65mm	125
4-SV	4mL screw top vial - clear.	15 x 46mm	500
4-SV(A)	4mL screw top vial - amber.	15 x 46mm	500
3.5-HRSV	3.5mL screw top vial - High Recovery - uses 13mm screw caps.	15 x 46mm	500

Screw Caps and Plugs

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
13-SC-8RT1	13mm screw cap prefitted type 8 rubber/PTFE seal.	For 3.5-HRSV.	500
13-SC-ST15	13mm screw cap prefitted silicone/PTFE seal.	For 3.5-HRSV.	500
13-SC(W)-ST15X	13mm screw cap prefitted silicone/PTFE seal - pre-cut.	For 3.5-HRSV.	500
12-SC-8RT1	Cap with rubber PTFE seal.	General purpose.	500
12-SC-ST2	Cap with white silicone/red PTFE seal.	Suitable for Waters WISP.	200
12-SC	Black cap.		500
12-SC(R)	Red cap.		500
12-SC(W)	White cap.		500
12-SC(WG)	Green cap.		500
12-SC(Y)	Yellow cap.		500
12-SCS	Black solid cap, no central hole.	For long term storage and general purpose.	500
12-PEP4	Polyethylene plug.	For 4mL screw cap vials.	1000
12-SCP	Polyethylene snap cap plug.	For 4mL screw cap vials.	500

Seals

PART NUMBER	DESCRIPTION	SPECIAL NOTE	PACK SIZE
12-6RT1	Type 6 natural rubber/PTFE seal.		500
12-ST2	White silicone/red PTFE seal.	Standard.	500
12-ST18	White silicone/red PTFE seal.		500
12-ST143	White silicone/PTFE seal.	Extremely soft.	500
12-ST101	Blue silicone/PTFE seal.	Good for ECD.	500
12-T02	PTFE seal.	Does not reseal.	1000

Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
T-55	Aluminium tray for 55 vials that have an o.d. of 15mm.	5

ADDITIONAL NOTES

- Microsampling with a 5-SV can be achieved by using a 03-CVG, 02-CTVG or 01-CVG (see page 28) with an S-72 spring. Alternatively, the 07-CPV(A) (see page 30) may be used with an S-40.
- The 07-CPV(A) and 07-CPV (see page 30) are used by some Waters' customers as limited volume inserts in the 4mL vial, where an S-15 spring is used.
- The WS-7 (see page 78) support sleeve with one of our 2mL vials may be substituted for a 4mL vial in the Waters 717.

Neckless and PTFE Vials

Key to products Vial Cap Plug Combination Pack

Neckless Vials

PART NUMBER	DESCRIPTION	Neckless Vials	SPECIAL NOTE	PACK SIZE
4-NWV-C	4mL neckless glass vial - clear, with polyethylene cap - for Waters 48.		15 x 46mm	100
2.5-NV	2.5mL neckless vial - clear.		12 x 32mm	500
1-NMV-C	1mL neckless glass vial - clear - with polyethylene cap - for Alcott™/Micromeritics.		8 x 36mm	1000
1-NWV-C	1mL neckless glass vial - clear, with polyethylene cap - for Waters 96.		8 x 38mm	200
1-NWV(A)-C	1mL neckless glass vial - amber, with polyethylene cap - for Waters 96.		8 x 38mm	200
1-NWV	1mL neckless glass vial - clear - for Waters 96.		8 x 38mm	500
4-PPNWV-C	4mL polypropylene neckless vial with a polyethylene cap - for Waters 48.		15 x 46mm	100
1-PPNWV-C	1mL polypropylene neckless vial with a polyethylene cap - for Waters 96.		8 x 38mm	250
07-HRPPNWV-C	700µL polypropylene high recovery neckless vial and plug - for Waters 96.		8 x 38mm	250

2.5-NV

1-NWV

PART NUMBER	DESCRIPTION	Plugs	SPECIAL NOTE	PACK SIZE
12-NPEP4	12mm polyethylene plug.		For 2mL shell vials	1000
8-NPWP	8mm polyethylene plug.		For Waters 96 position shell vials	1000

PTFE Vials

Chromacol has developed a number of vials made from pure PTFE. These unique vials are suitable for use when sample components are likely to stick to a glass surface or when samples are dissolved in an aggressive solvent.

PART NUMBER	DESCRIPTION	PTFE Vials	SIZE	PACK SIZE
2-CVT	1.6mL PTFE vial		12 x 32mm	25
06-CTVT	600µL PTFE vial		12 x 32mm	25
03-CTVT	300µL PTFE vial		12 x 32mm	25

These 3 vials all use standard 11mm crimp caps (see page 32)

2-CVT

06-CTVT

03-CTVT

Headspace

Of the many headspace autosamplers currently available most use a 20mL, 10mL or 6mL vial. The exceptions are the headspace instruments from Teledyne® Tekmar™. These vials have a slightly larger diameter in order to maximise thermal contact and they must not be used in other headspace instruments.

Chromacol vials have a special design to ensure that the vial has the maximum possible strength to withstand higher positive internal pressures. The wall thickness is greater and the base is rounded to eliminate the weak area where the wall joins the base. The rim of the vial has a peak designed to press into the seal so that the seal is able to withstand higher pressures.

The headspace autosampler from CTC/Leap Technologies™ employs a unique magnetic system to transport the vials to and from the oven area. Our composite 20-MCBC crimp caps are ideal for this process. These caps with an aluminium skirt and a magnetic central disk, are easy to crimp and decap.

INSTRUMENTS	VIALS
Agilent	3,4,6,7,9,10,11
AI™ Cambridge	5,8
CTC/Leap	3,4,6,7,10,11
DANI™	3,4,6,7
DANI Purge and Trap	3,4
Fisons HS 500	6,7
Fisons HS 850	3,4
PerkinElmer	3,4,9,10,11
Shimadzu HSS-2B	1
Shimadzu AOC 5000	3,4,6,7,10,11
Tekmar	2,5,8
Varian	2,5,8

	VIALS	SIZE	VOLUME	PK SIZE
1	27-CV	30 x 60mm	27mL	125
2	22-CV	22 x 75mm	22mL	100
3	20-CV	22 x 75mm	20mL	100
4	20-CV(A)	22 x 75mm	20mL	100
5	12-CV	18 x 65mm	12mL	100
6	10-CV	22 x 45mm	10mL	100
7	10-CV(A)	22 x 45mm	10mL	100
8	9-CV	18 x 50mm	9mL	100
9	6-CV	22 x 38mm	6mL	100
10	20-HSV	22 x 75mm	20mL	100
11	10-HSV	22 x 45mm	10mL	100

PART NUMBER	DESCRIPTION	Crimp & Screw Top Combination Packs	PACK SIZE
20-HSVST3-CP	20mL screw top headspace vial and 18mm magnetic screw cap magnetic with prefitted silicone/PTFE liner.		125
20-CVCBT3-CP	20mL crimp top headspace vial and 20mm aluminium crimp cap with chlorobutyl/PTFE liner.		125
20-CVST3-CP	20mL crimp top headspace vial and 20mm aluminium crimp cap with silicone/PTFE liner.		125

Key to products Vial Cap Seal Plug Accessory Combination Packs

Newer high temperature headspace analysers require headspace seals which can operate at these higher temperatures without introducing additional components to the chromatogram. Our 20-ST3HT seal has been formulated for this requirement and may be used up to 250°C, depending also on the solvent being used.

20mm Crimp Caps

CODE	DESCRIPTION	SPECIAL NOTE	PACK SIZE
20-ACB	Blank cap		500
20-MCB	Blank cap, tin plate, magnetic	For CTC, Fisons, Leap and Alpha M.O.S.™	500
20-MCBC*	Composite blue magnetic cap	For CTC, Fisons, Leap and Alpha M.O.S.	500
20-MCBC-ST3*	Composite blue magnetic cap with blue silicone/PTFE seal	For CTC, Fisons, Leap and Alpha M.O.S.	500
20-AC-CBT3	Cap with blue chlorobutyl/PTFE seal	Standard	500
20-AC-ST3	Cap with blue silicone/PTFE seal	Ideal for Shimadzu HSS-2B, very clean.	500

** Also available in red.*

20mm Seals

CODE	DESCRIPTION	SPECIAL NOTE	PACK SIZE
20-AS3	White silicone/aluminium seal	For temperatures <170°C, aluminium face.	100
20-ASH3	Red silicone/aluminium seal	For temperatures >170°C, aluminium face.	100
20-B3P	Butyl rubber plug		500
20-CB3	Blue chlorobutyl seal		1000
20-CBT3	Blue chlorobutyl/PTFE seal		1000
20-CBT3B	Blue chlorobutyl/PTFE seal	Bellows type	1000
20-LLX	Blue silicone/PTFE seal	For use with liquid/liquid extraction.	100
20-ST3	Blue silicone/PTFE seal	Very clean for selective detectors.	500
20-ST3HT	Red silicone/PTFE seal	For temperatures up to 250°C.	100
20-ST15	Blue silicone/red PTFE seal	Preferred for Fisons.	500
20-ST101	Blue silicone/PTFE seal	Suitable for wash waste vials - not headspace.	500
20-1FB3	Butyl rubber freeze drying bung		2000
20-2FB3	Butyl rubber freeze drying bung		2000
18-ST101	18mm PTFE/silicone	Seal for 18-MSC. (magnetic screw cap)	125

18mm Magnetic Screw Caps and Seals

CODE	DESCRIPTION	PACK SIZE
18-MSC-CBT3	18mm screw cap - magnetic - 3mm chlorobutyl/PTFE liner.	125
18-MSC-ST101	18mm screw cap - magnetic - 1mm silicone/PTFE liner - not prefitted.	125
18-MSC-ST3	18mm screw cap - magnetic - 3mm silicone/PTFE liner.	125
18-MSC	18mm magnetic screw cap for 20-HSV and 10-HSV.	125

Plastic Cap/Plug

CODE	DESCRIPTION	SPECIAL NOTE	PACK SIZE
20-PEPC5	Polyethylene snap cap plug	Short term storage.	250

Accessories

PART NUMBER	DESCRIPTION	PACK SIZE
CMS-0	Crimpmate benchtop crimp station, no jaws.	1
CMSP-0	Pneumatic Autocrimp benchtop crimp station, no jaws.	1
CMS-20	Crimpmate benchtop crimp station with 20mm jaw.	1
CMJ-20	Crimpmate benchtop crimp station jaw for 20mm crimp caps.	1
CMJF-20	Crimpmate benchtop crimp station jaw for 20mm flip top crimp caps.	1
CDJ-20	Crimpmate benchtop crimp station de-capping jaw for 20mm crimp caps.	1
CR-20	Hand crimper for 20mm crimp caps.	1
DCR-20	De-capper for 20mm crimp caps - pliers type.	1
DCB-20	De-capper for 20mm crimp caps - hand crimper type.	1
T-10/20	Hard tray-10 vial capacity for vials with 22mm o.d.	1
T-28	Aluminium tray-28 vial capacity for vials with 22mm o.d.	5

High Recovery Storage Vials

Chromacol's new range of high recovery storage vials contain a tapered reservoir. This provides larger sample capacities whilst giving maximum sample recovery and prevent any waste of precious samples.

The tapered base acts to concentrate the sample in the centre of the reservoir where manual or automated syringes and pipettes can be utilised to extract to the last few microliters of liquid.

Manufactured from Type 1 Class A neutral borosilicate glass; the preferred material for long-term storage of organic liquid samples.

Vials with volumes up to 10mL have a new flatter base for enhanced stability in racks and trays.

2D barcode etching on base is compatible with vials from 3.8mL to 10mL

Key to products Vial Cap Seal

High Recovery Storage Vials

PART NUMBER	DESCRIPTION	HEIGHT (MM)	ODX (MM)	FINISH AND 2D BARCODE COMPATIBILITY	VIAL FEATURES	PACK SIZE
60-HRSV	Clear glass high recovery vial - screw-60mL	143	28	24-400	Large volume with high level of sample recovery EPA Dimensions	50
40-HRSV	Clear glass high recovery vial - screw-40mL	103	28	24-400	Large volume with high level of sample recovery EPA Dimensions	50
20-HRSV	Clear glass high recovery vial - screw-20mL	67	28	24-400	Large volume with high level of sample recovery EPA Dimensions	50
10-HRSV	Clear glass high recovery vial - screw-10mL	61	21	18-400 2D	Flatter base and large volume with high level of sample recovery	100
5-HRSV	Clear glass high recovery vial - screw-5mL	51	17	15-425 2D	Flatter base for better stability in sampling trays.	100
4-HRSV	Clear glass high recovery vial - screw-4mL	51	15	13-425 2D	Flatter base for better stability in sampling trays.	100
3.8-HRSV(A)	Amber glass high recovery vial - screw-3.8mL	46	15	13-425 2D	Flatter base for better stability in sampling trays.	100
3.8-HRSV	Clear glass high recovery viall - screw-3.8mL	46	15	13-425 2D	Flatter base for better stability in sampling trays.	100
3.5-HRSV	Clear glass high recovery vial - screw-3.5mL	46	15	13-425	3.5mL screw top vial-High Recovery	250
1.5-HRLSV	Clear glass high recovery vial - screw-1.5mL	44	13	13-425	Long taper reservoir	100

Phenolic Caps for High Recovery Sample Storage

PART NUMBER	DESCRIPTION	SCREW THREAD FINISH	PACK SIZE
13-SCST(BLK)	Black phenolic closed top with rubber/PTFE liner	13-425	100
15-SCST(BLK)	Black phenolic closed top with rubber/PTFE liner	15-425	100
18-SCST(BLK)	Black phenolic closed top with rubber/PTFE liner	18-400	100
24-SCST(BLK)	Black phenolic closed top with rubber/PTFE liner	24-400	100

Phenolic Injection Caps for High Recovery Vials

PART NUMBER	DESCRIPTION	SCREW THREAD FINISH	PACK SIZE
13-SC(BLK)	Black phenolic cap-open top	13-425	100
15-SC(BLK)	Black phenolic cap-open top	15-425	100
18-SC(BLK)	Black phenolic cap-open top	18-400	100
24-SC(BLK)	Black phenolic cap-open top	24-400	100

Replacement Septa for Phenolic Injection Caps

PART NUMBER	DESCRIPTION	PACK SIZE
13-ST15	13mm PTFE/Silicone Seal for 13-SC cap	100
15-ST3	15mm PTFE/Silicone Seal for 15-SC cap	500
18-ST3	18mm PTFE/Silicone Seal for 18-SC cap	500
24-ST3S	24mm Silicone/PTFE Seal for 24-SC cap	100

Thermo Scientific Columns and SPE

New Thermo Scientific HPLC columns and HyperSep SPE phases with innovative hardware designs chemistries and formats.

Thermo Scientific HPLC Columns

Chromacol now offers the well known Thermo Scientific range of Hypersil classical and BDS materials and the Hypersil GOLD advanced materials in particle sizes down to 1.9µm.

Hypersil GOLD columns -
- Excellent peak shapes for all analyte types
- Improved selectivity, resolution and productivity
- Base deactivated type B silica for LC-MS and pharmaceutical applications

	Diameter µm	PD(A)	SA(m^2/g)	Carbon%	End-Capping	Column USP	Shape	Replaces HPLC Technology
Hypersil GOLD	1.9, 3, 5, 8,12	175	220	10.0	Yes	L1	spherical, silica	Techinert ODS
Hypersil GOLD C8	1.9, 3, 5	175	220	8.0	Yes	L7	spherical, silica	Techinert C8
Hypersil GOLD CN	1.9, 3, 5	175	220	4.0	Yes	L10	spherical, silica	Techinert CN
Hypersil GOLD Phenyl	1.9, 3, 5	175	220	8.5	Yes	L11	spherical, silica	

Hypersil Classical columns -
- Reliable and reproducible
- Trusted for over 30 years
- General purpose type A silica for routine analysis

Hypersil ODS	3, 5, 10	120	170	10.0	Yes	L1	spherical, silica	Techsphere ODS
Hypersil SAS	3, 5, 10	120	170	2.5	Yes	L13	spherical, silica	Techsphere C1
Hypersil MOS	3, 5, 10	120	170	6.5	No	L7	spherical, silica	Techsphere C8
Hypersil Phenyl	3, 5, 10	120	170	5.0	No	L11	spherical, silica	Techsphere Phenyl
Hypersil SAX	5	120	170	2.5	Yes	L14	spherical, silica	Techsphere SAX
Hypersil CPS	3, 5, 10	120	170	4.0	No	L10	spherical, silica	Techsphere CN
Hypersil APS-2	3, 5, 10	120	170	1.9	No	L8	spherical, silica	Techsphere Amino
Hypersil Silica	3, 5, 10	120	170			L3	spherical, silica	Techsphere Si

BioBasic columns -
- Improved performance for peptides, proteins and biomolecules
- 300Å pore size

Biobasic™ 18	5	300	100	9.0	Yes	L1	spherical, silica	Techogel 300 C18
Biobasic 4	5	300	100	4.0	Yes	L26	spherical, silica	Techogel 300 C4
Biobasic 8	5	300	100	5.0	Yes	L7	spherical, silica	Techogel 300 C8
Biobasic AX	5	300	100	3.0			spherical, silica	Techogel 300 PAX
Biobasic SCX	5	300	100	3.0		L52	spherical, silica	

Hypersil BDS columns -
- Base deactivated for reduced peak tailing
- Highly reproducible and robust with long lifetimes

Hypersil BDS C18	3, 5	130	170	11.0	Yes	L1	spherical, silica	Techsphere BDS ODS
Hypersil BDS C8	3, 5	130	170	7.0	Yes	L7	spherical, silica	Techsphere BDS C8

Hypersil Green PAH - Dedicated columns for the analysis of polyatomic hydrocarbons

Hypersil Green PAH	3, 5	120	170	13.5	Yes		spherical, silica	Techsphere PAH

Material Range Specifications

Particle Diameter

The smaller the particle size the more efficient the separation, but the greater the operating pressure.

Surface Area

The larger the surface area the greater the adsorption of the material and the higher the retention of the material. Measured as m^2/g just 1 gram of packing material has an effective surface area of hundreds of square meters.

Pore Diameter

The porosity of the particle controls the size of molecules that may be separated. The pore diameter is usually stated in Angstrom units (Å) but may also be measured in nanometers (nm). 10 Angstrom = 1 nanometer. Narrow pore materials are most common in HPLC but wide pore materials are required if larger molecules such as proteins require separation. These have pore diameters of 30nm or greater.

Carbon Load

When the surface is chemically modified the coverage is measured as the % weight for weight of organic carbon. The higher the carbon load the more efficient the coating and more retentive the material when used in Reverse Phase separations.

End-Capping

This is a chemical process carried out to remove unwanted interactions with un-reacted sites on the material surface.

Particle Shape

Most HPLC materials are composed of porous spherical particles. Older irregular materials do not pack as well and can give higher than expected operating pressures.

Silica Type

Type A Silicas have an active surface and can show extra retention of basic compounds.
Type B Silicas have a deactivated surface and can be used for analysis of basic and polar compounds.

Hypersil GOLD columns -

- Outstanding peak shape using generic gradients with C18 selectivity
- Reduced peak tailing enhances resolution and improves sensitivity

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
1.9	20			25002-023030	25002-022130	25002-021030
	30			25002-033030	25002-032130	25002-031030
	50			25002-053030	25002-052130	25002-051030
	100			25002-103030	25002-102130	25002-101030
	150				25002-152130	
	200				25002-202130	
3	30	25003-034630	25003-034030	25003-033030	25003-032130	25003-031030
	50	25003-054630	25003-054030	25003-053030	25003-052130	25003-051030
	100	25003-104630	25003-104030	25003-103030	25003-102130	25003-101030
	150	25003-154630	25003-154030	25003-153030	25003-152130	25003-151030
5	30	25005-034630	25005-034030	25005-033030	25005-032130	25005-031030
	50	25005-054630	25005-054030	25005-053030	25005-052130	25005-051030
	100	25005-104630	25005-104030	25005-103030	25005-102130	25005-101030
	150	25005-154630	25005-154030	25005-153030	25005-152130	25005-151030
	250	25005-254630	25005-254030	25005-253030	25005-252130	25005-251030
8	150	25008-154630				
	250	25008-254630				

Hypersil GOLD C8 columns -

- Similar selectivity but less retention than a C18 column
- Ideal when a less hydrophobic phase is required

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
1.9	20			25202-023030	25202-022130	25202-021030
	30			25202-033030	25202-032130	25202-031030
	50			25202-053030	25202-052130	25202-051030
	100			25202-103030	25202-102130	25202-101030
	150				25202-152130	
	200				25202-202130	
3	30	25203-034630	25203-034030	25203-033030	25203-032130	25203-031030
	50	25203-054630	25203-054030	25203-053030	25203-052130	25203-051030
	100	25203-104630	25203-104030	25203-103030	25203-102130	25203-101030
	150	25203-154630	25203-154030	25203-153030	25203-152130	25203-151030
5	30	25205-034630	25205-034030	25205-033030	25205-032130	25205-031030
	50	25205-054630	25205-054030	25205-053030	25205-052130	25205-051030
	100	25205-104630	25205-104030	25205-103030	25205-102130	25205-101030
	150	25205-154630	25205-154030	25205-153030	25205-152130	25205-151030
	250	25205-254630	25205-254030	25205-253030	25205-252130	25205-251030

Hypersil GOLD CN columns -

- Can be used for both reversed and normal phase separations
- Alternative selectivity to C18

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
1.9	20			25802-023030	25802-022130	25802-021030
	30			25802-033030	25802-032130	25802-031030
	50			25802-053030	25802-052130	25802-051030
	100			25802-103030	25802-102130	25802-101030
	150				25802-152130	
	200				25802-202130	
3	30	25803-034630	25803-034030	25803-033030	25803-032130	25803-031030
	50	25803-054630	25803-054030	25803-053030	25803-052130	25803-051030
	100	25803-104630	25803-104030	25803-103030	25803-102130	25803-101030
	150	25803-154630	25803-154030	25803-153030	25803-152130	25803-151030
5	30	25805-034630	25805-034030	25805-033030	25805-032130	25805-031030
	50	25805-054630	25805-054030	25805-053030	25805-052130	25805-051030
	100	25805-104630	25805-104030	25805-103030	25805-102130	25805-101030
	150	25805-154630	25805-154030	25805-153030	25805-152130	25805-151030
	250	25805-254630	25805-254030	25805-253030	25805-252130	25805-251030

Thermo Scientific HPLC Columns

Hypersil GOLD Phenyl columns -

- Ideal for mixtures with varying polarity and aromaticity
- Enhanced pi-pi interactions with aromatic molecules

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
1.9	20			25902-023030	25902-022130	25902-021030
	30			25902-033030	25902-032130	25902-031030
	50			25902-053030	25902-052130	25902-051030
	100			25902-103030	25902-102130	25902-101030
	150				25902-152130	
	200				25902-202130	
3	30	25903-034630	25903-034030	25903-033030	25903-032130	25903-031030
	50	25903-054630	25903-054030	25903-053030	25903-052130	25903-051030
	100	25903-104630	25903-104030	25903-103030	25903-102130	25903-101030
	150	25903-154630	25903-154030	25903-153030	25903-152130	25903-151030
5	30	25905-034630	25905-034030	25905-033030	25905-032130	25905-031030
	50	25905-054630	25905-054030	25905-053030	25905-052130	25905-051030
	100	25905-104630	25905-104030	25905-103030	25905-102130	25905-101030
	150	25905-154630	25905-154030	25905-153030	25905-152130	25905-151030
	250	25905-254630	25905-254030	25905-253030	25905-252130	25905-251030

BioBasic 18 columns -

- Outstanding separation of small to medium peptides
- High peak capacity stationary phase

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
5	30	72105-034630	72105-034030	72105-033030	72105-032130	72105-031030
	50	72105-054630	72105-054030	72105-053030	72105-052130	72105-051030
	100	72105-104630	72105-104030	72105-103030	72105-102130	72105-101030
	150	72105-154630	72105-154030	72105-153030	72105-152130	72105-151030
	250	72105-254630	72105-254030	72105-253030	72105-252130	72105-251030

BioBasic 8 columns -

- Ideal for the separation of a wide range of peptides
- Excellent starting column for protein and peptide separations

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
5	50	72205-054630	72205-054030	72205-053030	72205-052130	72205-051030
	100	72205-104630	72205-104030	72205-103030	72205-102130	72205-101030
	150	72205-154630	72205-154030	72205-153030	72205-152130	72205-151030
	250	72205-254630	72205-254030	72205-253030	72205-252130	72205-251030

BioBasic 4 columns -

- Designed for the analysis of larger peptides and proteins
- Lower carbon loading for optimal retention of larger biomolecules

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
5	50	72305-054630	72305-054030	72305-053030	72305-052130	72305-051030
	100	72305-104630	72305-104030	72305-103030	72305-102130	72305-101030
	150	72305-154630	72305-154030	72305-153030	72305-152130	72305-151030
	250	72305-254630	72305-254030	72305-253030	72305-252130	72305-251030

BioBasic CN columns -

- Alternative selectivity for proteins
- Offers changes in elution order

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
5	50	72905-054630	72905-054030	72905-053030	72905-052130	72905-051030
	100	72905-104630	72905-104030	72905-103030	72905-102130	72905-101030
	150	72905-154630	72905-154030	72905-153030	72905-152130	72905-151030
	250	72905-254630	72905-254030	72905-253030	72905-252130	72905-251030

BioBasic SCX columns -

- Strong cation exchanger based on sulphonic acid chemistry
- Separation of proteins, peptides and cationic species

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
5	50	73205-054630	73205-054030	73205-053030	73205-052130	73205-051030
	100	73205-104630	73205-104030	73205-103030	73205-102130	73205-101030
	150	73205-154630	73205-154030	73205-153030	73205-152130	73205-151030
	250	73205-254630	73205-254030	73205-253030	73205-252130	73205-251030

BioBasic AX columns -

- Weak polyethyleneimine anion exchanger
- Offers retention of polar analytes in HILIC mode

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id	1mm id
5	50	73105-054630	73105-054030	73105-053030	73105-052130	73105-051030
	100	73105-104630	73105-104030	73105-103030	73105-102130	73105-101030
	150	73105-154630	73105-154030	73105-153030	73105-152130	73105-151030
	250	73105-254630	73105-254030	73105-253030	73105-252130	73105-251030

Hypersil BDS C18 columns -

- Base deactiviated with minimal residual silanol activity
- Economical general purpose columns

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	30	28103-034630	28103-034030	28103-033030	28103-032130
	50	28103-054630	28103-054030	28103-053030	28103-052130
	100	28103-104630	28103-104030	28103-103030	28103-102130
	150	28103-154630	28103-154030	28103-153030	28103-152130
5	50	28105-054630	28105-054030	28105-053030	28105-052130
	100	28105-104630	28105-104030	28105-103030	28105-102130
	125	28105-124630	28105-124030	28105-123030	28105-122130
	150	28105-154630	28105-154030	28105-153030	28105-152130
	200	28105-204630	28105-204030	28105-203030	28105-202130
	250	28105-254630	28105-254030	28105-253030	28105-252130

Hypersil BDS C8 columns -

- Ideal for mixtures with varying polarity and aromaticity
- Enhanced pi-pi interactions with aromatic molecules

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	28203-054630	28203-054030	28203-053030	28203-052130
	100	28203-104630	28203-104030	28203-103030	28203-102130
	150	28203-154630	28203-154030	28203-153030	28203-152130
5	50	28205-054630	28205-054030	28205-053030	28205-052130
	100	28205-104630	28205-104030	28205-103030	28205-102130
	150	28205-154630	28205-154030	28205-153030	28205-152130
	250	28205-254630	28205-254030	28205-253030	28205-252130

Hypersil ODS (C18) columns -

- Global standard for many existing methods
- High efficiency and proven reliability

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30103-054630	30103-054030	30103-053030	30103-052130
	100	30103-104630	30103-104030	30103-103030	30103-102130
	125	30103-124630	30103-124030	30103-123030	30103-122130
	150	30103-154630	30103-154030	30103-153030	30103-152130
	250	30103-254630	30103-254030	30103-253030	30103-252130
5	50	30105-054630	30105-054030	30105-053030	30105-052130
	100	30105-104630	30105-104030	30105-103030	30105-102130
	125	30105-124630	30105-124030	30105-123030	30105-122130
	150	30105-154630	30105-154030	30105-153030	30105-152130
	200	30105-204630	30105-204030	30105-203030	30105-202130
	250	30105-254630	30105-254030	30105-253030	30105-252130
10	250	30110-254630			

Hypersil ODS-2 (C18) columns -

- Rugged and reliable columns
- Selectivity over a wide range of applications

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	31603-054630	31603-054030	31603-053030	31603-052130
	100	31603-104630	31603-104030	31603-103030	31603-102130
	150	31603-154630	31603-154030	31603-153030	31603-152130
5	50	31605-054630	31605-054030	31605-053030	31605-052130
	100	31605-104630	31605-104030	31605-103030	31605-102130
	150	31605-154630	31605-154030	31605-153030	31605-152130
	250	31605-254630	31605-254030	31605-253030	31605-252130

Thermo Scientific HPLC Columns

Hypersil MOS (C8) columns -
- Reliable columns with less retention than ODS
- Long column lifetimes, even under basic conditions

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30203-054630	30203-054030	30203-053030	30203-052130
	100	30203-104630	30203-104030	30203-103030	30203-102130
	150	30203-154630	30203-154030	30203-153030	30203-152130
5	50	30205-054630	30205-054030	30205-053030	30205-052130
	100	30205-104630	30205-104030	30205-103030	30205-102130
	150	30205-154630	30205-154030	30205-153030	30205-152130
	250	30205-254630	30205-254030	30205-253030	30205-252130

Hypersil MOS-2 (C8) columns - An endcapped version of Hypersil MOS

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30303-054630	30303-054030	30303-053030	30303-052130
	100	30303-104630	30303-104030	30303-103030	30303-102130
	150	30303-154630	30303-154030	30303-153030	30303-152130
5	50	30305-054630	30305-054030	30305-053030	30305-052130
	100	30305-104630	30305-104030	30305-103030	30305-102130
	150	30305-154630	30305-154030	30305-153030	30305-152130
	250	30305-254630	30305-254030	30305-253030	30305-252130

Hypersil SAS (C1) columns -
- Short alkyl chain reversed phase material
- Least retentive Hypersil phase

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30503-054630	30503-054030	30503-053030	30503-052130
	100	30503-104630	30503-104030	30503-103030	30503-102130
	150	30503-154630	30503-154030	30503-153030	30503-152130
	250	30503-254630	30503-254030	30503-253030	30503-252130
5	50	30505-054630	30505-054030	30505-053030	30505-052130
	100	30505-104630	30505-104030	30505-103030	30505-102130
	150	30505-154630	30505-154030	30505-153030	30505-152130
	250	30505-254630	30505-254030	30505-253030	30505-252130

Hypersil Phenyl columns -
- Similar retention to MOS with alternative selectivity
- Recommended for the separation of aromatic and moderately polar analytes

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30903-054630	30903-054030	30903-053030	30903-052130
	100	30903-104630	30903-104030	30903-103030	30903-102130
	150	30903-154630	30903-154030	30903-153030	30903-152130
5	50	30905-054630	30905-054030	30905-053030	30905-052130
	100	30905-104630	30905-104030	30905-103030	30905-102130
	150	30905-154630	30905-154030	30905-153030	30905-152130
	250	30905-254630	30905-254030	30905-253030	30905-252130

Hypersil Phenyl-2 columns - An endcapped version of Hypersil Phenyl

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
5	50	31905-054630	31905-054030	31905-053030	31905-052130
	100	31905-104630	31905-104030	31905-103030	31905-102130
	150	31905-154630	31905-154030	31905-153030	31905-152130
	250	31905-254630	31905-254030	31905-253030	31905-252130

Hypersil CPS columns -

- Operate in both normal and reversed phase modes
- Useful to separate polar compounds

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30803-054630	30803-054030	30803-053030	30803-052130
	100	30803-104630	30803-104030	30803-103030	30803-102130
	150	30803-154630	30803-154030	30803-153030	30803-152130
5	50	30805-054630	30805-054030	30805-053030	30805-052130
	100	30805-104630	30805-104030	30805-103030	30805-102130
	150	30805-154630	30805-154030	30805-153030	30805-152130
	250	30805-254630	30805-254030	30805-253030	30805-252130

Hypersil CPS-2 columns - An endcapped version of Hypersil CPS

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
5	50	31805-054630	31805-054030	31805-053030	31805-052130
	100	31805-104630	31805-104030	31805-103030	31805-102130
	150	31805-154630	31805-154030	31805-153030	31805-152130
	250	31805-254630	31805-254030	31805-253030	31805-252130

Hypersil APS-2 columns -

- Versatile amino propyl phase
- Extra sensitivity for sugar analysis

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30703-054630	30703-054030	30703-053030	30703-052130
	100	30703-104630	30703-104030	30703-103030	30703-102130
	150	30703-154630	30703-154030	30703-153030	30703-152130
5	50	30705-054630	30705-054030	30705-053030	30705-052130
	100	30705-104630	30705-104030	30705-103030	30705-102130
	150	30705-154630	30705-154030	30705-153030	30705-152130
	250	30705-254630	30705-254030	30705-253030	30705-252130

Hypersil Silica columns -

- Excellent batch to batch reproducibility
- Narow particle size distribution

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	30003-054630	30003-054030	30003-053030	30003-052130
	100	30003-104630	30003-104030	30003-103030	30003-102130
	150	30003-154630	30003-154030	30003-153030	30003-152130
5	50	30005-054630	30005-054030	30005-053030	30005-052130
	100	30005-104630	30005-104030	30005-103030	30005-102130
	150	30005-154630	30005-154030	30005-153030	30005-152130
	250	30005-254630	30005-254030	30005-253030	30005-252130

Hypersil SAX columns -

- Quaternary amine ion exchange ligand
- Suitable for small organic molecules including nucleotides and organic acids

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
5	50	34105-054630	34105-054030	34105-053030	34105-052130
	100	34105-104630	34105-104030	34105-103030	34105-102130
	150	34105-154630	34105-154030	34105-153030	34105-152130
	250	34105-254630	34105-254030	34105-253030	34105-252130

Hypersil Green PAH columns -

- Dedicated columns for the analysis of polyaromatic hydrocarbons
- Optimised for EPA method 610

Particle Size (µm)	Length (mm)	4.6mm id	4mm id	3mm id	2.1mm id
3	50	31103-054630	31103-054030	31103-053030	31103-052130
	100	31103-104630	31103-104030	31103-103030	31103-102130
	150	31103-154630	31103-154030	31103-153030	31103-152130
5	100	31105-104630	31105-104030	31105-103030	31105-102130
	150	31105-154630	31105-154030	31105-153030	31105-152130
	250	31105-254630	31105-254030	31105-253030	31105-252130

Thermo Scientific Drop-in Guard Cartridges

- Convenient, economical replacement guard cartridges
- Variety of stationary phases and particle sizes
- Fits Thermo Scientific UNIGUARD™ direct-connection and stand-alone holders

Thermo Scientific drop-in guard cartridges and holders offer convenience, economy, and effective protection for extending analytical column lifetimes. Drop-in guard cartridges are available in all popular stationary phases. The 10 mm design offers maximum protection with minimal increase in retention. For light to moderate contamination, this dimension of guard has adequate capacity to trap and retain interferences from sample injections throughout an analysis sequence. Once contaminated, they should be disposed of and replaced with a new cartridge rather than performing a clean up. This ensures that your analytical column will always perform at its optimum level and remain free from contamination. The same replaceable cartridges fit the UNIGUARD and stand-alone holders, allowing your laboratory to standardize on a single guard cartridge for multiple holder designs.

Phase	Quantity	Particle Size	Length (mm)	4.6 mm/ 4.0 mm id	3.0 mm id	2.1 mm id	1.0 mm id
Hypersil GOLD	4	3 µm	10	25003-014001	25003-013001	25003-012101	25003-011001
	4	5 µm	10	25005-014001	25005-013001	25005-012101	25005-011001
Hypersil GOLD C8	4	3 µm	10	25203-014001	25203-013001	25203-012101	25203-011001
	4	5 µm	10	25205-014001	25205-013001	25205-012101	25205-011001
Hypersil GOLD aQ™	4	3 µm	10	25303-014001	25303-013001	25303-012101	25303-011001
	4	5 µm	10	25305-014001	25305-013001	25305-012101	25305-011001
Hypersil GOLD PFP	4	3 µm	10	25403-014001	25403-013001	25403-012101	25403-011001
	4	5 µm	10	25405-014001	25405-013001	25405-012101	25405-011001
Hypersil GOLD CN	4	3 µm	10	25803-014001	25803-013001	25803-012101	25803-011001
	4	5 µm	10	25805-014001	25805-013001	25805-012101	25805-011001
Hypersil GOLD	4	3 µm	10	25903-014001	25903-013001	25903-012101	25903-011001
Phenyl	4	5 µm	10	25905-014001	25905-013001	25905-012101	25905-011001
BioBasic 18	4	5 µm	10	72105-014001	72105-013001	72105-012101	72105-011001
BioBasic 8	4	5 µm	10	72205-014001	72205-013001	72205-012101	72205-011001
BioBasic AX	4	5 µm	10	73105-014001	73105-013001	73105-012101	73105-011001
BioBasic SCX	4	5 µm	10	73205-014001	73205-013001	73205-012101	73205-011001
Hypersil BDS C18	4	3 µm	10	28103-014001	28103-013001	28103-012101	28103-011001
Hypersil BDS C18	4	5 µm	10	28105-014001	28105-013001	28105-012101	28105-011001
Hypersil BDS C8	4	5 µm	10	28205-014001	28205-013001	28205-012101	28205-011001
Hypersil ODS	4	3 µm	10	30103-014001	30103-013001	30103-012101	30103-011001
Hypersil ODS	4	5 µm	10	30105-014001	30105-013001	30105-012101	30105-011001
Hypercarb™	2	3 µm	10	35003-014001	35003-013001	35003-012101	35003-011001
Hypercarb	2	5 µm	10	35005-014001	35005-013001	35005-012101	35005-011001

**Note: 4.0 mm drop-ins are used for both 4.0 and 4.6 mm analytical columns.*

Thermo Scientific Drop-in Guard Cartridges

Thermo Scientific UNIGUARD Direct-Connection Guard Cartridge Holder

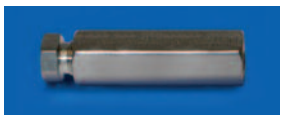
- Direct-connection design eliminates requirement for extra fittings
- Fast and simple fingertight installation on column
- Convenient replacement drop-in cartridges

The UNIGUARD holder is a convenient reusable direct-connection guard cartridge holder for 10 mm cartridges that attaches directly to the analytical column inlet. The stainless steel, fingertight direct-connection design requires no additional tubing for maximum chromatographic efficiency. The PEEK™ 1/16" male outlet fits all Thermo Scientific columns, as well as many other brands. The 1/16" female inlet connects with a standard 1/16" nut and ferrule, fingertight fitting, or Thermo Scientific SLIPFREE connector.

DESCRIPTION	4.6 mm/4.0 mm id	3.0 mm id	2.1 mm id	1.0 mm id
UNIGUARD Drop-in Holder	850-00	852-00	852-00	851-00
Standard Replacement Tip	850-RT	850-RT	850-RT	850-RT
Waters® Columns Replacement Tip	850-WT	850-WT	850-WT	850-WT

Thermo Scientific Stand-alone Guard Cartridge Holder

- Traditional in-line design is compatible with all HPLC column brands
- Convenient drop-in replacement cartridges



The stand-alone guard cartridge holder connects to the analytical column with short sections of tubing. The traditional design can be used with any brand of HPLC column, and uses the same convenient 10 mm drop-in guard cartridges as the UNIGUARD cartridge holder. When placed in-line using a short SLIPFREE connector, the stand-alone guard holder provides excellent chromatographic efficiency.

DESCRIPTION	4.6 mm/4.0 mm id	3.0 mm id	2.1 mm id	1.0 mm id
Stand-alone Guard Cartridge Holder	840-00	843-00	842-00	841-00

Thermo Scientific HyperSep SPE Products

Thermo Scientific HyperSep SPE

Solid phase extraction columns

- Unique sorbents available for normal phase, reversed phase and ion exchange extractions
- Highly reproducible and efficient phases
- Versatile and rugged sample preparation
- Available for use in biological, pharmaceutical, forensic, toxicological and environmental applications
- Consistently high recoveries free from contaminants and impurities

The manufacture of Thermo Scientific HyperSep sorbents ensures a controlled particle size distribution, providing reproducible flow characteristics and low backpressure for automation-friendly SPE columns. An even particle size distribution within the bed eliminates channeling, providing a larger surface area of sorbent available for interaction.

HyperSep solid phase extraction columns offer reproducible and reliable sample preparation in a traditional format. The polypropylene columns are chemically resistant. Two polyethylene frits are used to support the sorbent bed within the column. The columns are ideal for large samples and conform to industry standard configurations.

HyperSep columns are available in a range of bed weights to suit a wide range of applications. Samples can be processed through the columns by vacuum, by positive pressure or by centrifugation.

SORBENT	PHASE DESCRIPTION	MEAN PARTICLE SIZE (µm)	MEAN PORE SIZE (Å)	ENDCAPPED	PRIMARY RETENTION MECHANISMS
HYPERCARB	100% porous graphitic carbon stable across the entire pH range	30	250		Hydrophobic reversed phase. Normal phase adsorption. Polar retention effect on graphite (PREG)
RETAIN PEP	Polar enhanced polymer, poly-divinyl benzene with urea functionality	30-50	70	No	Hydrophobic reversed phase and hydrophilic normal phase.
RETAIN-CX	Polar enhanced polymer, poly-divinyl benzene partially functionalized with sulfonic acid	30-50	70	No	Hydrophobic reversed phase and cation exchange
RETAIN-AX	Polar enhanced polymer, poly-divinyl benzene partially functionalized with quaternary amine	30-50	70	No	Hydrophobic reversed phase and anion exchange
C18	Trifunctional octadecyl	40-60	60	No	Hydrophobic reversed phase
C8	Trifunctional octyl	40-60	60	No	Hydrophobic reversed phase
PHENYL	Trifunctional phenyl	40-60	60	No	Hydrophobic reversed phase
SILICA	Unbonded activated silica	40-60	60	No	Hydrophobic normal phase
SAX	Trifunctional quaternary amine, 0.25 mEq/g, Cl^- counter ion	40-60	60	No	Anion exchange
SCX	Trifunctional benzene sulfonic acid, 0.32 mEq/g, H^+ counter ion	40-60	60	No	Cation exchange
VERIFY™-CX	Mixed mode, containing C8 and benzene sulfonic acid	40-60	60	No	Cation exchange, non-polar
VERIFY-AX	Mixed mode, containing C8 and quaternary amine	40-60	60	No	Anion exchange, non-polar
FLORISIL	Florisil	40-60		No	Hydrophobic normal phase
AMINOPROPYL	Trifunctional aminopropyl, 0.31 mEq/g	40-60	60	No	Normal phase, weak anion exchange
CYANO	Trifunctional cyanopropyl	40-60	60	No	Polar (nonpolar organic matrix) or weak nonpolar (aqueous matrix)

Thermo Scientific HyperSep SPE Products

HyperSep SPE Column <1g

PART	DESCRIPTION	Aminopropyl	PK
SPEAPL-364	Aminopropyl 100mg/1mL		100
SPEAPL-424	Aminopropyl 50mg/1mL		100
SPEAPL-425	Aminopropyl 200mg/3mL		50
SPEAPL-518	Aminopropyl 500mg/3mL		50
SPEAPL-519	Aminopropyl 500mg/6mL		30

PART	DESCRIPTION	C18	PK
SPEC18-390	C18 50mg/1mL		100
SPEC18-302	C18 100mg/1mL		100
SPEC18-303	C18 200mg/3mL		50
SPEC18-304	C18 500mg/3mL		50
SPEC18-305	C18 500mg/6mL		30

PART	DESCRIPTION	C8	PK
SPEC8-391	C8 50mg/1mL		100
SPEC8-392	C8 100mg/1mL		100
SPEC8-393	C8 200mg/3mL		50
SPEC8-309	C8 500mg/3mL		50
SPEC8-394	C8 500mg/6mL		30

PART	DESCRIPTION	Cyano	PK
SPECN-746	Cyano 50mg/1mL		100
SPECN-745	Cyano 100mg/1mL		100
SPECN-747	Cyano 200mg/3mL		50
SPECN-748	Cyano 500mg/3mL		50
SPECN-749	Cyano 500mg/6mL		30

PART	DESCRIPTION	Florisil	PK
SPEFSIL-402	Florisil 50mg/1mL		100
SPEFSIL-403	Florisil 100mg/1mL		100
SPEFSIL-404	Florisil 200mg/3mL		50
SPEFSIL-405	Florisil 500mg/3mL		50
SPEFSIL-500	Florisil 500mg/6mL		30

PART	DESCRIPTION	Retain	PK
SPEPEP-201	Retain PEP 30mg/1mL		100
SPEPEP-202	Retain PEP 30mg/3mL		50
SPEPEP-203	Retain PEP 60mg/3mL		50
SPEPEP-204	Retain PEP 200mg/3mL		50
SPEPEP-205	Retain PEP 500mg/3mL		50
SPEPEP-206	Retain PEP 500mg/6mL		30

PART	DESCRIPTION	Hypercarb	PK
SPEPGC-301	Hypercarb 200mg/3mL		30
SPEPGC-302	Hypercarb 100mg/1mL		30
SPEPGC-303	Hypercarb 50mg/1mL		50
SPEPGC-402	Hypercarb 500mg/6mL		20

PART	DESCRIPTION	Phenyl	PK
SPEPH-516	Phenyl 50mg/1mL		100
SPEPH-386	Phenyl 100mg/1mL		100
SPEPH-387	Phenyl 200mg/3mL		50
SPEPH-388	Phenyl 500mg/3mL		50
SPEPH-389	Phenyl 500mg/6mL		30

HyperSep SPE Column >1g

PART	DESCRIPTION	Aminopropyl	PK
SPEAPL-432	Aminopropyl 1g/6mL		30
SPEAPL-738	Aminopropyl 2g/15mL		20
SPEAPL-739	Aminopropyl 5g/25mL		20
SPEAPL-740	Aminopropyl 10g/75mL		10

PART	DESCRIPTION	C18	PK
SPEC18-301	C18 1g/6mL		30
SPEC18-701	C18 2g/15mL		20
SPEC18-702	C18 5g/25mL		20
SPEC18-703	C18 10g/75mL		10

PART	DESCRIPTION	C8	PK
SPEC8-427	C8 1g/6mL		30
SPEC8-704	C8 2g/15mL		20
SPEC8-705	C8 5g/25mL		20
SPEC8-706	C8 10g/75mL		10

PART	DESCRIPTION	Cyano	PK
SPECN-750	Cyano 1g/6mL		30
SPECN-751	Cyano 2g/15mL		20
SPECN-752	Cyano 5g/25mL		20
SPECN-753	Cyano 10g/75mL		10

PART	DESCRIPTION	Florisil	PK
SPEFSIL-431	Florisil 1g/6mL		30
SPEFSIL-735	Florisil 2g/15mL		20
SPEFSIL-736	Florisil 5g/25mL		20
SPEFSIL-737	Florisil 10g/75mL		10

PART	DESCRIPTION	Hypercarb	PK
SPEPGC-403	Hypercarb 1g/6mL		10
SPEPGC-404	Hypercarb 2g/15mL		10

PART	DESCRIPTION	Phenyl	PK
SPEPH-517	Phenyl 1g/6mL		30
SPEPH-707	Phenyl 2g/15mL		20
SPEPH-708	Phenyl 5g/25mL		20
SPEPH-709	Phenyl 10g/75mL		10

Thermo Scientific HyperSep SPE Products

HyperSep SPE Column <1g (continued)

PART	DESCRIPTION	Verify-AX	PK
SPEAX-727	Verify-AX 130mg/1mL		100
SPEAX-728	Verify-AX 300mg/3mL		50
SPEAX-729	Verify-AX 500mg/3mL		50
SPEAX-730	Verify-AX 200mg/6mL		50
SPEAX-731	Verify-AX 500mg/6mL		30

PART	DESCRIPTION	Verify-CX	PK
SPECX-741	Verify-CX 50mg/1mL		100
SPECX-719	Verify-CX 130mg/1mL		100
SPECX-722	Verify-CX 200mg/6mL		50
SPECX-742	Verify-CX 200mg/10mL		50
SPECX-720	Verify-CX 300mg/3mL		50
SPECX-721	Verify-CX 500mg/3mL		50
SPECX-723	Verify-CX 500mg/6mL		30

PART	DESCRIPTION	Retain-CX	PK
SPERCX-301	Retain-CX 30mg/1mL		100
SPERCX-302	Retain-CX 30mg/3mL		50
SPERCX-303	Retain-CX 60mg/3mL		50
SPERCX-304	Retain-CX 200mg/3mL		50
SPERCX-305	Retain-CX 500mg/3mL		50
SPERCX-306	Retain-CX 500mg/6mL		30

PART	DESCRIPTION	Retain-AX	PK
SPERAX-401	Retain-AX 30mg/1mL		100
SPERAX-402	Retain-AX 30mg/3mL		50
SPERAX-403	Retain-AX 60mg/3mL		50
SPERAX-404	Retain-AX 200mg/3mL		50
SPERAX-405	Retain-AX 500mg/3mL		50
SPERAX-406	Retain-AX 500mg/6mL		30

PART	DESCRIPTION	SAX	PK
SPESAX-417	SAX 50mg/1mL		100
SPESAX-418	SAX 100mg/1mL		100
SPESAX-419	SAX 200mg/3mL		50
SPESAX-521	SAX 500mg/3mL		50
SPESAX-360	SAX 500mg/6mL		30

PART	DESCRIPTION	SCX	PK
SPESCX-420	SCX 50mg/1mL		100
SPESCX-421	SCX 100mg/1mL		100
SPESCX-422	SCX 200mg/3mL		50
SPESCX-423	SCX 500mg/3mL		50
SPESCX-520	SCX 500mg/6mL		30

PART	DESCRIPTION	Silica	PK
SPESIL-409	Silica 50mg/1mL		100
SPESIL-317	Silica 100mg/1mL		100
SPESIL-410	Silica 200mg/3mL		50
SPESIL-315	Silica 500mg/3mL		50
SPESIL-411	Silica 500mg/6mL		30

HyperSep SPE Column >1g (continued)

PART	DESCRIPTION	Verify-AX	PK
SPEAX-732	Verify-AX 1g/6mL		30

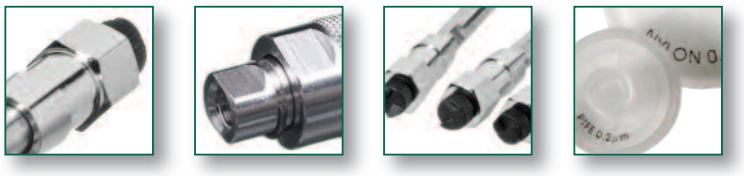
PART	DESCRIPTION	Verify-AX	PK
SPECX-724	Verify-CX 1g/6mL		30

PART	DESCRIPTION	SAX	PK
SPESAX-434	SAX 1g/6mL		30
SPESAX-713	SAX 2g/15mL		20
SPESAX-714	SAX 5g/25mL		20
SPESAX-715	SAX 10g/75mL		10

PART	DESCRIPTION	SCX	PK
SPESCX-433	SCX 1g/6mL		30
SPESCX-716	SCX 2g/15mL		20
SPESCX-717	SCX 5g/25mL		20
SPESCX-718	SCX 10g/75mL		10

PART	DESCRIPTION	Silica	PK
SPESIL-426	Silica 1g/6mL		30
SPESIL-710	Silica 2g/15mL		20
SPESIL-711	Silica 5g/25mL		20
SPESIL-712	Silica 10g/75mL		10

GC Septa, Data Handling, Syringe Filters and Spares



A wide range of chromatography consumables including GC septa, data handling software and instrument spares

GC Septa

CHROMSEAL 9001

High Performance GC Septa

These GC septa have been developed by Chromacol to:

- Operate at true operating temperatures up to 306°C
- Provide better, cleaner chromatography
- Offer a longer operating life
- Be packed in a chromatographically clean container

The CHROMSEAL 9001 Range

HT - High Temperature

This red septum has been designed to provide clean chromatography at a true operating temperature of 306°C.

LL - Long Life

This blue septum has been designed for use with an autosampler where it is likely to be penetrated many times.
This septum has been designed to have a maximum operating temperature of 290°C. Note this is a true operating temperature not an indicated temperature.

ECO - Economy

The Chromseal ECO grade septa have been designed to provide low operating costs without sacrificing cleanliness or operating life.
All Chromseal septa are available in a variety of sizes and as Shimadzu plug type septa.

Quality Control and Packing

All Chromseal 9001 septa are carefully packed immediately after production to protect them from laboratory contaminants and from contamination during their shelf life.
They are all packed in glass bottles, since glass has been shown to contribute nothing to the contents during extended period of storage.

Manufacturer	Model	Septa size mm	Septa size ins.	Chromseal References		
A I Cambridge	All models	9	11/32	HT-9	LL-9	ECO-9
Antek	All models	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5
Carlo Erba	FV2000 and FV 4000 Mega and Vega series	12		HT-12	LL-12	ECO-12
CE 8000 and TRACE	All models	17	21/32	HT-17	LL-17	ECO-17
Chrompak	All models	9	1/32	HT-9	LL-9	ECO-9
Gow Mac	All models	9	11/32	HT-9	LL-9	ECO-9
Agilent/Hewlett-Packard	5700	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5
	5880, 5890, 6890	11	7/16	HT-11	LL-11	ECO-11
PerkinElmer	All models	11	7/16	HT-11	LL-11	ECO-11
Shimadzu	All models	plug type		HT-SP	LL-SP	ECO-SP
Tracor	All models	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5
Varian	All packed column models	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5
	3300,3400,3500,3600,	11	7/16	HT-11	LL-11	ECO-11
	3700, Vista	11	7/16	HT-11	LL-11	ECO-11
Unicam	4600	9.5	3/8	HT-9.5	LL-9.5	ECO-9.5

Prime Chromatography Data Handling

New Version 4 with Enhanced Capabilities and compliance

Prime for Windows™ is ideally suited for use with any chromatograph offering a host of powerful features at a very affordable price that you won't find in any other package.

Prime is a multi-channel PC based chromatography data system that works under Windows 95/98, Windows NT/2000 and Windows XP operating systems.

Please contact us for a demo CD

Features

Operations

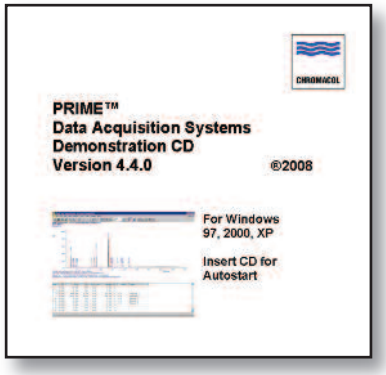
- Multiple Channels from single PC
- Multitasking in Windows
- Network Capable for Remote Operation
- External A/D converter 24-bit enhanced resolution with 32-bit calculation.
- Digital I/O

Calibration and Reporting

- Comprehensive Sequence and Multilevel Standard capabilities.
- SST module included with USP tailing component.
- Internal and External Standards
- Custom reports and Data Export
- Chromatogram Overlay

Validation and Compliance

- GLP/GMP Compliance
- Full IQ and OQ reporting
- 21 CFR Part 11 (Electronic Records and Electronic Signatures) Compliant



PART NUMBER	DESCRIPTION
PW-500	Prime for Windows – Complete single channel software with external A/D converters cables and manual.
PW-500 DEMO	Demonstration CD

Solvent Degassers

Vacuum Degassers

Vacuum degassers use only electrical power and can degas up to four solvent lines.

Gases are removed by passing the solvent through a permeable membrane, on the outside of which is a vacuum. As the solvent passes, dissolved gases diffuse through the membrane into the vacuum chamber and are removed. The membrane porosity ensures that only the unwanted gases pass through, no solvent vapours enter the laboratory. In addition, when mixed solvents are used, there is no depletion of the more volatile component.

Wetted components are PTFE or similarly inert compounds, suitable for all HPLC applications. Dead volumes are negligible, compatible with the required degassing quality and flowrates. When a four-channel system is used, the parameters of degassing quality and available flow rate can be varied by piping the various channels in parallel or in series.

SPECIFICATIONS	DESCRIPTION
Flow Rate Range:	0.2 to 5mL/min
Gas Removal:	Better than 1ppm at 1mL/min
Vacuum Source:	Vacuum pump with silencer
Vacuum Chamber:	Single vacuum chamber with one, two or four degassing lines.
Vacuum Sensor:	Automatically engages pump when required.
Dimensions:	12cm(W) x 26cm(D) x 22cm(H)
Weight:	8 kilos, 17.5lbs
Power:	220VA at 230V

PART NUMBER	DESCRIPTION
HDG-1615/1	Single Channel Degasser
HDG-1615/2	Dual Channel Degasser
HDG-1615/4	Four Channel Degasser

Each Degasser comes complete with PTFE connection tubing, finger-tight nuts and PTFE ferrules.

Syringe Filters

Sample preparation has always been one of the most important steps in successful chromatography. It has also been one of the most time consuming.

Chromacol's 30mm and 17mm filter formats provide superior throughput and sample loading over standard, competive 25mm and 13mm filters. Now you can process up to 50% more sample before reaching maxium sample loading for our new 30mm filters.

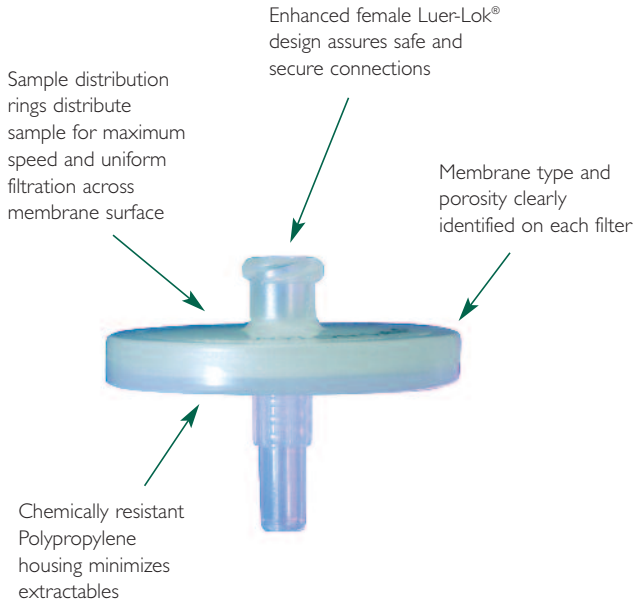
The new sample distribution rings promote uniform application of the sample across the membrane area. This feature maximizes the available filltration area, speed and reduces backpressure when filtering highly particulate samples.

For full details of our Syringe Filters range please request a brochure.

(All Chromacol syringe filters are packed in 100)

MATERIAL	DIAMETER	PORE SIZE 0.45µm	PORE SIZE 0.2µm
Nylon	30mm	30-SF-45(N)	30-SF-02(N)
	17mm	17-SF-45(N)	17-SF-02(N)
	4mm	4-SF-45(N)	4-SF-02(N)
With pre-filter	30mm	30-SF-45(N)P	30-SF-02(N)P
PTFE	30mm	30-SF-45(T)	30-SF-02(T)
	17mm	17-SF-45(T)	
	4mm	4-SF-45(T)	4-SF-02(T)
With pre-filter	30mm	30-SF-45(T)P	
PVDF	30mm	30-SF-45(PV)	30-SF-02(PV)
	17mm		17-SF-02(PV)
	4mm	4-SF-45(PV)	4-SF-02(PV)
Polypropylene (PP)	30mm	30-SF-45(PP)	30-SF-02(PP)
	17mm	17-SF-45(PP)	17-SF-02(PP)
	4mm	4-SF-45(PP)	4-SF-02(PP)
With pre-filter	30mm	30-SF-45(PP)P	
Polyether Sulphone (PES)	30mm	30-SF-45(PES)	30-SF-02(PES)
	17mm	17-SF-45(PES)	17-SF-02(PES)
Regenerated Cellulose(RC)	30mm	30-SF-45(RC)	
	17mm	17-SF-45(RC)	17-SF-02(RC)
	4mm	4-SF-45(RC)	4-SF-02(RC)
Cellulose Acetate (CA)	30mm	30-SF-45(CA)	30-SF-02(CA)
	17mm	17-SF-45(CA)	17-SF-02(CA)
	4mm	4-SF-45(CA)	

Comprehensive quality systems ensure interference free results



PORE SIZE	DIAMETER	GLASS FIBRE (GMF)	NYLON	PFTE
0.7µm	30mm	30-SF-07(GMF)		
1.0µm	30mm			30-SF-10(T)
1.2µm	30mm	30-SF-12(GMF)		
1.5µm	30mm		30-SF-15(N))	
3.1µm	30mm	30-SF-31(GMF)		
5.0µm	30mm			30-SF-50(T)

Ion Chromatography Certified Syringe Filters

Certified Filters with ultra-low ionic residues.

PART NUMBER	DESCRIPTION	Ion Chromatography Certified Syringe Filters
13-MF-02(IC)	Econofil IC Syringe Filters 13mm 0.2µm	
25-MF-02(IC)	Econofil IC Syringe Filters 25mm 0.2µm	

HPLC - Detector Lamps

Can't find the lamp for your detector or spectrophotometer?

For further details of lamps for UV-Vis Spectrophotometers and other HPLC manufacturers contact us for a complete listing.

PART NUMBER	DESCRIPTION	MODEL	Agilent Technologies (Hewlett-Packard)	MANUFACTURER'S P/N
DHP-901	Deuterium	HP 1040/HP 1050 (G1306A) DAD/HP 1050 DA (1050 MWD)/ HP 1050 MW (79854A) /HP 1090 (75880A) DAD		79883-60002
DHP-902	Deuterium	HP 1080/HP 1081/HP1081B/HP1082B/ HP1084/HP1084B		79875-60012
DHP-903	Deuterium	HP 1050 VW (79853C)		79853-60002
DHP-906	Xenon	HP 1046/HP1046A		
DHP-909	Deuterium	HP 8450/8450A		08450-60106
DHP-910	Deuterium	HP 1100 (G1314) VW		G1314-60100
DHP-910LL	LL deuterium	Agilent 1100 VWD long life		
DHP-911	Deuterium	HP 1100 (G1315A) DAD		2140-0590
DHP-911LL	LL deuterium	Agilent 1100 DAD long life		5181-1530
DHP-912	Deuterium	HP 8453		2140-8605
DHP-913	Deuterium	HP 8452 A DAD/HP 8452A Opt 002		08452-60104

PART NUMBER	DESCRIPTION	MODEL	Beckman	MANUFACTURER'S P/N
DAB-905	Deuterium	155		22887153
DAB-906	Deuterium	164/165/167		236920
DAB-909	Deuterium	163		22947029
DAB-913A	Deuterium	Beckman 166 D2 lamp (prealigned) System Gold		538706
DAB-915A	Deuterium	Beckman 168 D2 lamp (prealigned) System Gold		538711
DAB-916	Deuterium	Beckman P/ACE 2000 D2 (prealigned)		

Lamps for Beckman DU Series Spectrophotometers are also available

PART NUMBER	DESCRIPTION	MODEL	Gilson/Rainin	MANUFACTURER'S P/N
DGI-901	Deuterium	Holochrome		HMD(9510)
DGI-902	Deuterium	Spectrochrome		2900-0496
DGI-903	Mercury	111B/112 FW		03-03277-10
DGI-915	Deuterium	115/116/117		100-123
DGI-918	Deuterium	118/119/151/152/155/156		100-326
DGI-918LL	LL deuterium	Gilson 115/116/117/118/119/151 152/155/156 long life		
DGI-919LL	LL deuterium	Gilson 170 DAD D2 long life		
DHP-911	Deuterium	170 Diode Array		2140-60001

PART NUMBER	DESCRIPTION	MODEL	Kontron: Biotek-Kontron	MANUFACTURER'S P/N
DKO-901	Deuterium	LC 430		93-00636
DKO-901H	Deuterium	LC 330		54-02003
DKO-903	Deuterium	Uvikon 720/720LC		035-1001
DKO-904	Xenon	Kontron SFM25 Xe lamp		54-01002
DKO-905	Deuterium	LC 433		93-00636
DKO-906	Deuterium	LC 710/LC 715/Uvikon 820/930		54-02002
DKO-908	Deuterium	Uvikon 725		
DKO-909	Deuterium	Uvikon 740/800/810/860		54-02002
DKO-910	Deuterium	440 DAD		91-910-95
DKO-911	Deuterium	735LC/Uvikon 722/730/922		54-02001
DKO-912	Deuterium	LC 332/335		93-00636
DKO-912H	Deuterium	535 VWD		91-91494

HPLC - Detector Lamps

Kontron: Biotek-Kontron

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DKO-912LL	LL deuterium	Kontron 332 335 430 432 433 535 long life	91-91494
DKO-913	Deuterium	Uvikon 941/942/943	54-02002
DKO-913LL	LL deuterium	Kontron 535DAD long life	91-91494
DKO-914LL	LL deuterium	Kontron 540DAD 540+ 545V long life	54-02007
DKO-914	Deuterium	540 DAD/540+ DAD/545DAD	54-02007

Merck-Hitachi (Hitachi)

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DHI-901	Deuterium	101/102/111	
DHI-902	Deuterium	100-10/100-40/100-50/100-60	799-9991
DHI-903	Deuterium	150-20/200/220/300/330/340/2000/3000/ 4000/L2500/L3000/L4000/L-4500	885-3570
DHI-908	Deuterium	L4200/L4250/L4500	371140005
DHI-910	Deuterium	LaChrom L4720/L4520/L7400/L450	371140005
DHI-911	Xenon	Hitachi fluorescence detectors F1000/2000/4000 Series	

Lamps for Hitachi Spectrophotometers are also available.

ABI, Kratos

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DKA-902	Deuterium	757/769/770/773/775/783/873/FS970/120/130	2900-0496 (-0487) (-0489)
DKA-904	Tungsten	757/769/770/773/775/783/873/FS970/120/130	2450-0213
DKA-910	Deuterium	785A/FS980	2900-0484

PerkinElmer

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DPE-903	Deuterium	Lambda 3/7/9	C055-0505
DPE-906	Deuterium	360/460/560	0057-0194
DPE-908	Tungsten	Lambda 2/2S/10/11 and others	
DPE-911	Deuterium	Integral 2000/Integral 4000/LC55/LC65/LC85/LC95	B016-0917/0271-340/0271-1706
DPE-913	Deuterium	LC-90/LC-290	0271-2224
DPE-914	Deuterium	Lambda 2/2S/10/11 and others	B016-0817
DPE-915	Deuterium	Series 200 DAD	N2922010

Lamps for other PerkinElmer Lambda Series Spectrophotometers are also available.

Shimadzu

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DSH-901	Deuterium	UV120/UV160/UV160A/UV240/UV260/UV265	200-75503-01
DSH-902	Deuterium	SPD-2A/SPD-3/SPD-4	062-65056
DSH-903	Deuterium	D300L/UV200S	062-70606-00
DSH-912	Xenon	Shimadzu RF530/RF510	
DSH-913	Xenon	Shimadzu RF540/RF535/RF551/RF500	
DSH-914	Xenon	Shimadzu RF1501.5301/5000	
DSH-915	Xenon	RF10A RF10AX	
DSH-916	Deuterium	SPD 6A/SPD-6AV	
DSH-917	Deuterium	SPD 10A/SPD 10AS/SPD-10AV/SPD-10AVP	228-34016-02
DSH-918	Deuterium	SPD-M10AVP PDA	228-34016
DSH-918LL	LL deuterium	Shimadzu SPD-10 Series long life	

Thermo Scientific SpectaPhysics/LDC/Milton Roy/ Linear/Spectronics/TSP

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DLD-901	Deuterium	LDC Spectromonitor III	108035
DLD-907	Deuterium	LDC Spectromonitor I/II	
DLD-909	Deuterium	LDC SM4000 series	900918001
DLD-910	Deuterium	LDC SM3000/3100/3200	108035
DLD-911	Xenon	LDC Fluoromonitor FM4100	
DPY-915	Deuterium	Aquamate/UV1/UV2/UV3/UV4	
DPY-916	Tungsten	Helios Epsilon	
DTL-901	Tungsten	Helios Delta/Gamma	
DSP-901	Deuterium	SP8400/SP8430/SP8440/SP8450/SP8480/SP8490	3302-9540
DSP-903	Deuterium	SP8200/LC871	
DSP-905	Xenon	FL2000/LC304	
DSP-907	Deuterium	SP8480XR/SP8773XR	
DSP-908	Deuterium	Linear UV100/UV200/UV1000/UV2000/ UV3000/Focus/Spectrochrom	9551-0202
DSP-908	Deuterium	Thermo Surveyor	
DSP-912	Deuterium	TSP UV6000LP	108052

Unicam (Philips/ATI/Pye)

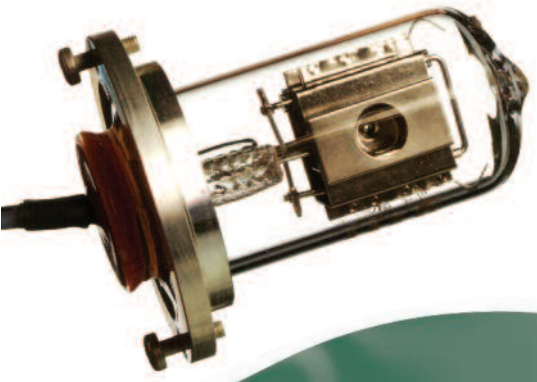
PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DPY-901	Deuterium	4020/4025	4013164-45861
DPY-902	Deuterium	4110	4013166-66428
DPY-903	Deuterium	SP8200/SP8400/SP8600	4013163-75402
DPY-904	Deuterium	600UV	4013161-05993
DPY-905	Deuterium	4021	4013164-39401
DPY-906	Deuterium	8500/8740/8625/8675	9423186-0811
DPY-907	Deuterium	SP8700/SP8750	9423185-03021
DPY-914	Deuterium	4225	9435242-25401
DPY-915	Deuterium	Helios/UV300/UV550	
DTL-901	Tungsten	Helios/UV300/UV550	943-UV9-0001E
DTL-902	Tungsten	SP8200/SP8400/SP8600 (Vis)	9423 185

Lamps for Unicam spectrophotometers are also available.

Varian

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
DVA-901	Deuterium	UV 2050	03-951303-99
DVA-903	Deuterium	UV 50/Varichrom	03-951305
DVA-904	Deuterium	UV100/UV200	03-916077
DVA-905	Deuterium	UV5/2550	00-996800
DVA-906	Deuterium	LC5000/LC5500	03-916077-00
DVA-907	Deuterium	Star 9050	03-916077-00
DVA-909	Deuterium	ProStar 340/345 UV/Vis	03-91615691

Lamps for Varian CARY Spectrophotometers and other models also available.



HPLC - Detector Lamps

PART NUMBER	DESCRIPTION	MODEL	Waters	MANUFACTURER'S P/N
DWA-901	Mercury	440/441/490		WAT 097323
DWA-910	Deuterium	480/481/480LC/481LC/Lambda Max/LC1		WAT 099499
DWA-911	Tungsten	RI/R401/R403/R404		WAT 048419
DWA-912	Cadmium	440/441/490		WAT 097731
DWA-913	Zinc	440/441/490		WAT 097723
DWA-915	Deuterium	484		WAT 080357
DWA-918	Deuterium	486		WAT 080678
DWA-918LC	Deuterium	2486		WAT 080678
DWA-921	Deuterium	996 PDA/2996		WAT 057760
DWA-921LL	LL deuterium	Waters 996		WAT 057760
DWA-923	Xenon	470/475/2475 lamp only		WAT 047018
DWA-926	Deuterium	990/991/994 PDA		WAT 021516
DWA-929	Xenon	474		WAT 047447
DWA-930	Deuterium	2487 Dual Wavelength/2488		WAT 081142
DWA-930LL	LL deuterium	Waters Alliance 2487/2488		WAT 081142

PART NUMBER	DESCRIPTION	MODEL	Cecil	MANUFACTURER'S P/N
DCE-901	Deuterium	Cecil Series 1		2202-0142
DCE-902	Deuterium	Cecil Series 2		2900-0484

Lamps for Cecil UV Spectrophotomers also available

PART NUMBER	DESCRIPTION	MODEL	Dionex (Gynkotek-Softron)	MANUFACTURER'S P/N
DGP-903	Deuterium	Gynkotek UVD-340S		
DDX-901	Deuterium	Dionex Summit PDA-100		

PART NUMBER	DESCRIPTION	MODEL	Knauer	MANUFACTURER'S P/N
DKN-904	Deuterium	8600/8700		
DKN-905	Deuterium	Wellchrom K-2500/2501/2600		

PART NUMBER	DESCRIPTION	MODEL	Severn Analytical	MANUFACTURER'S P/N
DSA-901	Deuterium	SA6500/SA6503/SA6504/SA6508		

ADDITIONAL NOTES

- Deuterium lamps are usually supplied ready for installation with pre-aligned bases. In some cases the holder or bracket from the lamp assembly will need to be reused. Deuterium lamps are usually warranted for 1000 hours of operation. The long-life deuterium lamps are now supplied with an extended operational life of 2000 hours+.
- Xenon lamps are supplied without mounting brackets and require manual alignment.
- Tungsten lamps are pre-aligned.

Agilent 1100
DHP-911LL

Shimadzu
DSH-917LL

Gilson
DGI-918

Varian
DVA-907

Pump Spares

Gold seals give extended lifetime in corrosive and buffered mobile phases. Universal check valves allow one check valve unit to be used as spares for a number of different pumps.

PART NUMBER	DESCRIPTION	MODEL	Agilent Technolgies (Hewlett -Packard) Pistons	MANUFACTURER'S P/N
SHP-200	Piston Assembly - Sapphire	1090		3080-0672
SHP-400	Piston Assembly - Sapphire	1050 and 1100		5062-2441

PART NUMBER	DESCRIPTION	MODEL	Agilent Technologies *(Hewlett-Packard)* Piston Seals	MANUFACTURER'S P/N
SHP-220G	Piston Seal - Yellow All Models	1050, 1090 and 1100		
SHP-220	Piston Seal - Black 1090	1090		5062-2494
SHP-420K	Piston Seal - Black 1050 &1100	1050 and 1100		5062-8516

PART NUMBER	DESCRIPTION	MODEL	Agilent Technologies *(Hewlett-Packard)* Check Valves	MANUFACTURER'S P/N
SHP-5002	Replacement Inlet/Outlet Check Valve Cartridge1090	1090		79835-67101
SHP-5001	Inlet/Outlet Check Valve Assembly 1090	1090		79835-25211

PART NUMBER	DESCRIPTION	MODEL	Beckman-Coulter (Beckman, Altex) Piston	MANUFACTURER'S P/N
SBA-200	Piston Assembly - Sapphire	100		100-07
SBA-400	Piston Assembly - Sapphire	110,112		243053
SBA-414	Piston Assembly - Sapphire	114, 116, 126 128 System Gold		240714

PART NUMBER	DESCRIPTION	MODEL	Beckman-Coulter (Beckman, Altex) Piston Seals	MANUFACTURER'S P/N
SBA-220	Piston Seal - Black	100		887138
SBA-220G	Piston Seal - Gold	100		
SBA-420	Piston Seal - Black	110		887138
SBA-520	Piston Seal - Black	112		236797
SBA-620	Piston Seal - Black	114, 116, 126 128 System Gold		237162/241037

PART NUMBER	DESCRIPTION	MODEL	Beckman-Coulter (Beckman, Altex) Check Valves	MANUFACTURER'S P/N
SBA-3001	Inlet Check Valve Assembly	100, 112, 114, 116, 126 128 System Gold		243038/240720
SBA-3002	Outlet Check Valve Assembly	100, 112, 114, 116, 126 128 System Gold		243040/240721
SBA-6001	Inlet Check Valve Assembly	110		243054
SBA-6002	Outlet Check Valve Assembly	110		243040

PART NUMBER	DESCRIPTION	MODEL	Gilson Piston Assemblies	MANUFACTURER'S P/N
SGI-200	WSC Piston Assembly - Sapphire	300 Series- WSC 10mL Head		E 50010
SGI-600	SC Piston Assembly - Sapphire	300 Series- SC & WSC 25mL Head		E 50011
SGI-580	SC Piston Assembly - Sapphire	300 Series- SC & WSC 5mL Head		E 500008
SGI-590	SC Piston Assembly - Sapphire	300 Series- SC & WSC 10mL Head		E 50009

Pump Spares

Gilson Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-GIL220G	Piston Seal - Yellow	300 Series- SC & WSC 10mL Head	400121
SOT-GIL220	Piston Seal - Black	300 Series- SC & WSC 10mL Head	400111
SOT-GIL250G	Piston Seal - Yellow	300 Series- SC & WSC 25mL Head	400122
SOT-GIL250	Piston Seal - Black	300 Series- SC & WSC 25mL Head	400117
SOT-GIL520G	Piston Seal - Yellow	300 Series- SC & WSC 5mL Head	400120
SOT-GIL520	Piston Seal - Black	300 Series- SC & WSC 5mL Head	400112
SOT-GIL500G	Piston Seal - Yellow	300 Series- SC & WSC 50mL Head	400123

Gilson Check Valves

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SGI-1144	Inlet Check Valve Cartridge	300 Series- SC & WSC Head	E 50082
SGI-1145	Outlet Check Valve Cartridge	300 Series- SC & WSC Head	E 50085
SGI-3001	Inlet Check Valve Cartridge Assembly	300 Series- SC & WSC Head	645042
SGI-3002	Outlet Check Valve Cartridge Assembly	300 Series- SC & WSC Head	645243
SGI-8001	Inlet Check Valve Body	300 Series- SC & WSC Head	E 45356
SGI-8002	Outlet Check Valve Body	300 Series- SC & WSC Head	E 45219

Kontron Pistons

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SKO-200	Piston Assembly - Sapphire	410, 414	
SKO-300	Piston Assembly - Sapphire	320 M, 325 M, 422	96-90015
SKO-400	Piston Assembly - Sapphire	420 L	92-00834
SKO-500	Piston Assembly - Zirconia	500, 522, 525	67-90030
SKO-800	Piston Assembly - Sapphire	420M	92-00833
SKO-900	Piston Assembly - Sapphire	420S	92-00832

Kontron Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SKO-220	Piston Seal - Black	410, 414	35-30011
SKO-320	Piston Seal - Black (Standard)	320 M, 325 M, 422	35-99005
SKO-420	Primary Piston Seal - Black	420 L	35-99004
SKO-420S	Secondary Piston Seal-Clear	420 L	35-30018
SKO-520	Piston Seal - Black	500, 522, 525	35-99025C
SKO-520G	Piston Seal - Yellow	500, 522, 525	35-99025
SKO-820	Primary Piston Seal - Black	420M	35-99002
SKO-820S	Secondary Piston Seal-Clear	420M	35-30016
SKO-920	Primary Piston Seal - Black	420S	35-99003
SKO-920S	Secondary Piston Seal-Clear	420S	35-30020

Kontron pumps may have different heads installed. These may give micro, analytical or preparative versions. Check head unit before ordering.

Kontron Check Valves

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SKO-3001	Inlet Check Valve Assembly	410, 414	92-00626
SKO-3002	Outlet Check Valve Assembly	410, 414	87-00462
SKO-5001	Inlet Check Valve Assembly	420 L, 500, 522, 525	92-90003
SKO-5002	Outlet Check Valve Assembly	420 L, 500, 522, 525	92-90278
SKO-6001	Inlet Check Valve Assembly (Isocratic)	420M, 420MDA, 420S	92-90007
SKO-6002	Outlet Check Valve Assembly	420M, 420MDA, 420S	92-90008
SKO-6003	Dummy Check Valve Assembly	420M	
SKO-7001	Inlet Check Valve Assembly (Isocratic)	320 M, 325 M, 422	92-90007
SKO-7002	Outlet Check Valve Assembly	320 M, 325 M, 422	92-0008
SKO-6001G	Inlet Check Valve Assembly (Gradient)	420M	92-90016

Kratos ABI Piston Assembly

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-KS200	Piston Assembly - Sapphire	SF 400 Analytical	1400-1970

Kratos ABI Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SKS-220G	Piston Seal - Yellow	SF 400 Analytical	
SKS-220	Piston Seal - Grey	SF 400 Analytical	7200-0088
SKS-220U	Piston Seal - Clear	SF 400 Analytical	

Kratos ABI Check Valve Assembly

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SKS-6002	Outlet Check Valve Assembly	SF 400 Analytical	7200-0062
SKS-6001	Inlet Check Valve Assembly	SF 400 Analytical	7200-0060

Also used with - Gynkotek 300C, M480, P580, Severn Analytical SA6200, Dionex 300C, M480, P580

Merck Hitachi Pistons

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SMH-200	Piston Assembly - Sapphire	655, LaChrom L6000, L7100	635-1021

Merck Hitachi Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SMH-220	Piston Seal - Black	655, LaChrom L6000, L7100	655-1080

Merck Hitachi Check Valves

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SMH-3001	Inlet Check Valve Assembly (Not L7100)	655, LaChrom L6000	885-1330
SMH-3002	Outlet Check Valve Assembly (Not L7100)	655, LaChrom L6000	885-1331
SMH-4001	Inlet/Outlet Check Valve Cartridge (L7100 only) *	655, LaChrom L6000, L7100	

PerkinElmer Pistons

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-PE600	H. P. Piston Assembly - Sapphire	SERIES 200, 400, 410, 620, Model 250, Integral 4000	N2600124
SOT-PE500	L. P. Piston Assembly - Sapphire	SERIES 200, 400, 410, 620, Model 250, Integral 4000	N2600104

PerkinElmer Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-PE220	H. P. Piston Seal - Grey	SERIES 200, 400, 410, 620, Model 250, Integral 4000	9907328
SOT-PE220G	H. P. Piston Seal - Yellow	SERIES 200, 400, 410, 620, Model 250, Integral 4000	9907324
SOT-PE320	L. P. Piston Seal - Black	SERIES 200, 400, 410, 620, Model 250, Integral 4000	9907330
SOT-PE320G	L. P. Piston Seal - Yellow	SERIES 200, 400, 410, 620, Model 250, Integral 4000	9907339

PerkinElmer Check Valves

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-PE3001	Inlet/Intermediate Check Valve Assembly	SERIES 200, 400, 410, 620, Model 250, Integral 4000	2540177
SOT-PE3002	Outlet Check Valve Assembly	SERIES 200, 400, 410, 620, Model 250, Integral 4000	2540197

Shimadzu Pistons

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-SH200	Piston Assembly - Sapphire	LC-10 AS, LC-6, LC-6A	228-17019-00
SOT-SH202	Piston Assembly - Sapphire	LC-9, LC-10AD, LC-600	228-18523-91

Shimadzu Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-SH-100-01	Piston Seal - Yellow	LC-10 AT	228-21975-00
SOT-SH-100-02	Wash Seal - White	LC-10 AT	228-28499-00
SOT-SH220	Piston Seal - Grey	LC-3, LC-4, LC-5, LC-6, LC-6A, LC-10 AS	228-11999
SOT-SH220G	Wash Seal - White	LC-3, LC-4, LC-5, LC-6, LC-6A, LC-10 AS	228-28499
SOT-SH520G	Piston Seal - Yellow	LC-3, LC-4, LC-5, LC-6, LC-6A, LC-10 AS	228-21975
SOT-SH420	Piston Seal - Grey	LC-9, LC-10AD, LC-600	228-18745
SOT-SH520	Piston Seal - Black	LC-10 ATvp	228-35145-00

Shimadzu Check Valves

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-SSH3001	Inlet Check Valve Assembly	LC-3, LC-4, LC-5, LC-6, LC-6A, LC-10 AS	228-12353-91
SOT-SSH3002	Outlet Check Valve Assembly	LC-3, LC-4, LC-5, LC-6, LC-6A, LC-10 AS	228-090540-93
SSH-6001	Inlet Check Valve Assembly - Cartridge Type	LC-9, LC-10AD, LC-600	Equiv. to 228-18522-91
SSH-6002	Outlet Check Valve Assembly - Cartridge Type	LC-9, LC-10AD, LC-600	Equiv. to 228-18522-92

Thermo Scientific Pistons

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SLD-200	Piston Assembly - Sapphire	CONSTAMETRIC I, II, III, 3000, 4000	8013060000
SOT-SP200	Piston Assembly - Sapphire	8100, 8700	A 1593-010
SOT-SP202	Piston Assembly - Sapphire	8800, 8810, ISOCHROM, P-SERIES	A 3102-010
SFS-200	Piston Assembly - Sapphire	Surveyor LC	00950-30020S
SFS-300	Piston Assembly - Zirconia	Surveyor MS	00201-11324

Thermo Scientific Piston Seals

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SOT-SP220	Piston Seal - Black	8100, 8700	
SOT-SP220G	Piston Seal - Yellow	8100, 8700	
SOT-SP100	Piston Seal - Black	8800, 8810, ISOCHROM, P-SERIES	A 2962-020
SOT-SP420	Piston Seal - Black	8800, 8810, ISOCHROM, P-SERIES	A 2962-020
SOT-SP420U	Piston Seal - Clear	8800, 8810, ISOCHROM, P-SERIES	
SOT-SP420G	Piston Seal - Yellow	8800, 8810, ISOCHROM, P-SERIES	A 2962-010
SOT-SP102	Piston Wash Seal - White	8800, 8810, ISOCHROM, P-SERIES	A 2963-010
SLD-220	Piston Seal - Black	CONSTAMETRIC I, II, III, 3000, 4000	2061290010
SLD-220G	Piston Seal - Yellow	CONSTAMETRIC I, II, III, 3000, 4000	2062340000
SLD-500	Standard Seal Kit - Black	CONSTAMETRIC I, II, III, 3000, 4000	8015980000
SLD-500G	Standard Seal Kit - Yellow	CONSTAMETRIC I, II, III, 3000, 4000	8018920010
SFS-220	Piston Seal - Black	Surveyor LC	00950-30004B
SFS-220G	Piston Seal - Yellow	Surveyor LC	00950-30004Y
SFS-230	Wash Seal White	Surveyor LC	00950-30025
SFS-320	Piston Seal - Black	Surveyor MS	00107-18110
SFS-320U	Piston Seal - Clear	Surveyor MS	00107-18111
SFS-330	Wash Seal - Clear	Surveyor MS	00107-18114

Thermo Scientific Check Valves

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
SLD-3501	Inlet Check Valve Assembly Cartridge Type	CONSTAMETRIC I, II, III, 3000, 4000	9009470010
SLD-3502	Outlet Check Valve Assembly Cartridge Type	CONSTAMETRIC I, II, III, 3000, 4000	9009470020
SOT-SP304	Transducer Check Valve Assembly	8100, 8700, 8800, 8810, ISOCHROM, P-SERIES	A 3990-010
SSP-6001	Inlet Check Valve Assembly	8100, 8700, 8800, 8810, ISOCHROM, P-SERIES	A 3495-010
SSP-6002	Outlet Check Valve Assembly	8100, 8700, 8800, 8810, ISOCHROM, P-SERIES	A 3480-010
SFS-3001	Inlet Check Valve Assembly - Cartridge Type	Surveyor LC	00950-30026
SFS-3002	Outlet Check Valve Assembly - Cartridge Type	Surveyor LC	00950-30021
SFS-6001C	Inlet/Outlet Check Valve Cartridge	Surveyor MS	00110-05110

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
		Varian Sapphire Pistons	
SOT-VA200	Piston Assembly - Sapphire	5000, 5500, 5600	03-905337-00
SOT-VA400	Piston Assembly - Sapphire	2010, 2210, 2510	00-997261-08

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
		Varian Piston Seals	
SOT-VA220	Piston Seal - Black	5000, 5500, 5600	27-459632-00
SOT-VA320	Piston Seal - Black	2010, 2210, 2510	
SOT-VA320G	Piston Seal - Yellow	2010, 2210, 2510	00-997261-37

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
		Varian Check Valves and Spares	
SVA-3001	Inlet Check Valve Assembly	2010, 2210, 2510	00-997261-09
SVA-3002	Outlet Check Valve Assembly	2010, 2210, 2510	00-997261-10

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
		Waters Pistons	
SWA-WA200	Piston Assembly - Sapphire	M510, M590, M600, M610 M6000	WAT025656
SWA-WA200R	Piston Assembly - Ruby	M510, M590, M600, M610 M6000	
SWA-WA205	Piston Assembly - Sapphire	M45, M501	WAT026524
SWA-WA600S	Piston Assembly - Sapphire	M510EF, M590EF, M600EF, M610EF, M6000EF	WAT060304
SWA-WA800	Piston Assembly - Sapphire	M515	WAT0207069
SWA-WA900	Piston Assembly - Sapphire	Alliance 2690	WAT0270959

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
		Waters Piston Seals	
SWA-WA220	Piston Seal - Black	M45, M501, M510, M590, M600, M610 M6000	WAT026613
SWA-WA220G	Piston Seal - Yellow	M45, M501, M510, M590, M600, M610 M6000	WAT022934
SWA-WA600	Piston Seal - Grey	M510EF, M590EF, M600EF, M610EF, M6000EF	WAT026644
SWA-WA820	Piston Seal - Black	M515	WAT026613
SWA-WA820G	Piston Seal - Yellow	M515	WAT022934
SWA-WA920	Piston Seal - Black	Alliance 2690	
SWA-WA920G	Piston Seal - Yellow	Alliance 2690	WAT0270789

PART NUMBER	DESCRIPTION	MODEL	MANUFACTURER'S P/N
		Waters Check Valves and Spares	
SWA-3201	Inlet Check Valve Assembly	M45, M501, M510, M590, M600, M610 M6000	25214
SWA-3202	Outlet Check Valve Assembly Actuator Type	M45, M501, M510, M590, M600, M610 M6000	25028
SWA-3202B	Outlet Check Valve	M45, M501, M510, M590, M600, M610 M6000	25216
	Assembly Ball & Seat Type		
SWA-3212	Inlet Check Valve Repair Kit	M510, M590, M600, M610 M6000	60495
SWA-3402B	Outlet Check Valve Assembly Ball & Seat Type	M45, M501, M510, M590, M600, M610 M6000	25216
SWA-3402	Outlet Check Valve Assembly Actuator Type	M510, M590, M600, M610 M6000	25028
SWA-4107	Inlet Check Valve Assembly	M510EF, M590EF, M600EF, M610EF, M6000EF	60307
SWA-4123	Inlet Check Valve Repair Kit	M510EF, M590EF, M600EF, M610EF, M6000EF	88223
SWA-8001	Inlet Check Valve Assembly	M515	25214
SWA-8002	Outlet Check Valve Assembly	M515	25216
SWA-9001	Check Valve Cartridge	Alliance 2690	

ADDITIONAL NOTES

- The spare parts are suitable for the analytical version of the pumps referenced.
- When preperative pump heads are used please insure that the piston dimensions are known.

Storage Vials



A range of larger volume glass vials for use in liquid storage and environmental testing.

This includes TOC certified, barcoded and enviromantal liquid sampling vials.

Key to products Vial

For general storage applications Chromacaol dram vials take caps with standard GPI threads. Both injection caps with piercable seals or solid PTFE lined storage caps may be supplied separately, or in part of convenience packs. The vials are Class 1 hydrolytic extraction neutral borosilicate glass to give assurance of sample stability and low extraction. Most configurations are also supplied in amber glass with similar hydrolytic activity.

Additional Features

When using in automated storage systems the vials may be supplied with pre-applied barcoded labels to your specification.

Dram Vials GPI Thread

Part Number	Nominal Volume	OD (mm)	HT (mm)	Screw (mm)	Description	Pack Size
40-SV	40mL	28	95	24	8 dram vial with 24-400 screw neck	100
40-SV(A)	40mL	28	95	24	8 dram vial with 24-400 screw neck	100
22-SV	22mL	23	85	20	6 dram vial with 20-400 screw neck	200
16-SV	16mL	21	70	18	4 dram vial with 18-400 screw neck	200
16-SV(A)	16mL	21	70	18	4 dram amber vial with 18-400 screw neck	200
12-SV	12mL	19	65	15	3 dram vial with 15-425 screw neck	185
12-SV(A)	12mL	19	65	15	3 dram amber vial with 15-425 screw neck	200
8-SV	8mL	17	60	15	2 dram vial with 15-425 screw neck	200
8-SV(A)	8mL	17	60	15	2 dram amber vial with 15-425 screw neck	200
4-SV	4mL	15	45	13	1 dram vial with 13-425 screw neck	500
4-SV(A)	4mL	15	45	13	1 dram amber vial with 13-425 screw neck	500
3.5-HRSV	3.5mL	15	45	13	1 dram high recovery vial with 13-425 screw neck	500
2-SV	2mL	12	32	8	0.5 dram vial with 8-425 screw neck	500
2-SV(A)	2mL	12	32	8	0.5 dram vial amber with 8-425 screw neck	500

Storage Vials

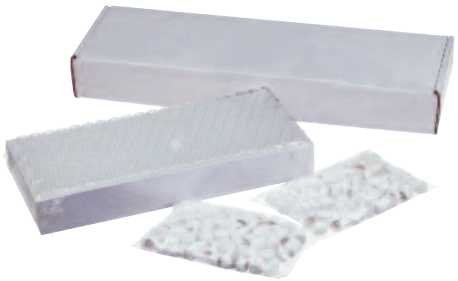
Key to products Vial Cap Combi Pack Seal

Combination Packs

Common combinations of vials and closures can be ordered together for greater convenience and assured fit.

Storage Combination Packs

PART NUMBER	VIAL	CAP	PACK SIZE
22-SV-CP	22-SV	20-SCST	200
16-SV-CP	16-SV	18-SCST	200
16-SV(A)-CP	16-SV(A)	18-SCST	200
12-SV-CP	12-SV	15-SCST	200
12-SV(A)-CP	12-SV(A)	15-SCST	200
8-SV-CP	8-SV	15-SCST	200
8-SV(A)-CP	8-SV(A)	15-SCST	200



Injection Combination Packs

PART NUMBER	VIAL	CAP	SEPTUM	PACK SIZE
22-SVST-CP	22-SV	20-SC	20-ST3S	200
16-SVST-CP	16-SV	18-SC	18-ST3S	200
16-SV(A)ST-CP	16-SV(A)	18-SC	18-ST3S	200
12-SVST-CP	12-SV	15-SC	15-ST3S	200
12-SV(A)ST-CP	12-SV(A)	15-SC	15-ST3S	200
8-SVST-CP	8-SV	15-SC	15-ST3S	200
8-SV(A)ST-CP	8-SV(A)	15-SC	15-ST3S	200

Caps and Seals

Screw Caps

PART NUMBER	GPI FINISH	PACK SIZE
24-SCST	24-400 storage cap with liner - white	100
20-SCST	20-400 storage cap with liner - white	100
18-SCST	18-400 storage cap with liner - white	100
15-SCST	15-425 storage cap with liner - white	100
13-SCST	13-425 storage cap with liner - white	100
8-SCST	8-425 storage cap with liner - white	100
24-SC	24-400 injection cap only - white	100
20-SC	20-400 injection cap only - black	100
18-SC	18-400 injection cap only - black	100
15-SC	15-425 injection cap only - black	100
13-SC-ST15	13-425 injection cap with seal - black	500
8-SC-ST15	8-425 injection cap with seal - black	500
12-SCS	12mm solid cap - black	500
8-SCS	8-425 solid cap - black	500
22-SCS	R3 PP solid cap - white - unlined	100
18-SCS	R3 PP solid cap - white - unlined	1000
14-SCS	14mm custom - white	1000
24-ST3S	Silicone/PTFE seal for 24-SC cap	100
20-ST3S	Silicone/PTFE seal for 20-SC cap	100
18-ST3S	Silicone/PTFE seal for 18-SC cap	100
15-ST3S	Silicone/PTFE seal for 15-SC cap	100

Powder Vials

For dry powder weighing and dispensing the walls of these vials are free of neck constrictions and traps. The external custom 14mm thread takes a white polypropylene cap that is compatible with most robotic transfer systems.
Two versions are available with nominal volumes of 5mL and 7mL with a 14mm od.

PART NUMBER	NOMINAL VOLUME	OD (MM)	HT (MM)	SCREW (MM)	DESCRIPTION	Powder Vials	PACK SIZE
6.7-SV	6.7mL	15	70	14	7mL powder vial with 14mm custom external thread		175
5.3-SV	5.3mL	15	48	14	5mL powder vial with 14mm custom external thread		187
14-SCS	-	-	-	-	14mm white solid screw cap		1000

Universal Vials

This 30mL vial is ideally suited for sample storage.

PART NUMBER	NOMINAL VOLUME	OD (MM)	HT (MM)	SCREW (MM)	DESCRIPTION	Universal R3 Threaded Vials & Caps	PACK SIZE
30-USVC	30mL	28	83	22	Universal vial with 22mm R3 screw neck, cap included		125
10-USVC	10mL	16	96	18	Universal vial with 18mm R3 screw neck, cap included		528
5-USVC	5mL	16	43	18	Universal vial with 18mm R3 screw neck, cap included		221

Other Storage Tubes

Round bottom tubes with 12mm screw threads for secure closure. Use with 12mm or 13-425 caps, both storage and injection versions; see page 38.

PART NUMBER	NOMINAL VOLUME	OD (mm)	HT (mm)	SCREW (mm)	DESCRIPTION	Other Storage Tubes	PACK SIZE
10-SV	10mL	13	100	12	Clear screw top round bottom vial		125
5-SV	5mL	13	60	12	Clear screw top round bottom vial		125

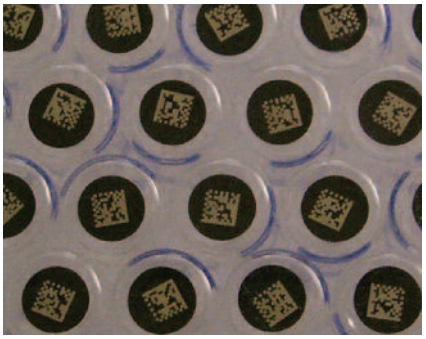
Other Applications

For COD (Chemical Oxygen Demand) one type of tube is available. This vial is compatible with heating and measurement systems from a range of manufacturers. Made from neutral glass to withstand the heating required. Use with either 15-SCST (storage cap) or 15-SC (injection cap) with 15-ST3S (Seal), see page 70.

PART NUMBER	NOMINAL VOLUME	OD (mm)	HT (mm)	SCREW (mm)	DESCRIPTION	COD Vials 15-425 Thread	PACK SIZE
AGE-A1003	10mL	15	100	15	Clear neutral narrow neck screw vial		1126

Compound Storage

Key to products Vial



Barcoded Vials

Vials are pre-printed with a unique code, that is machine-readable and can be downloaded into database and sample handling software.

2D Coded Etched Vials

2D codes are used because the amount of information carried by the code is as great as a linear code of many times the length.
Datamatrix coding is used as standard with a number of reading systems and scanners.
Vials may be read singly or an array of tubes may be logged using a bottom reading scanner.
In almost all cases it is possible to give a permanent marking directly onto the glass surface that is not affected by moisture, heat or solvent attack. By utilising the correct 2D label size and resolution much more data can be included than is possible with even high-resolution linear 1D codes.
(2D base labels are not available on the 3.5-HRSV).

Linear Pre-Applied Labels

Most Chromacol glass vials may be pre-labelled with a variety of barcode symbologies, including Code 128, Code 39 and Interleaved 2 of 5

Label Specifications

Labels are selected to give resistance to commonly used solvents and chemicals including DMSO and Xylene.
Adhesives are selected to give a very high level of attachment with minimal edge lift.
The labels are resistant to high levels of humidity and low temperatures found in cooled sample storage units.

Etched Linear Labels

For the ultimate in chemical and physical resistance the linear code may be permanently etched onto the vial. With high contrast background high levels of readability and error checking is found. These can be specified for Dram and Powder Storage Vials.

Coded Vials

PART NUMBER	NOMINAL VOLUME	OD (MM)	HT (MM)	SCREW (MM)	DESCRIPTION
4-SV-BC-DM2	4mL	15	45	13	1dram vial with specified etched linear and matched 2D datamatrix code
4-SV-BC-DM	4mL	15	45	13	1dram vial with specified etched 2D datamatrix code
4-SV-BC-1L	4mL	15	45	13	1dram vial with specified etched linear barcode
2-SV-BC-DM2	2mL	12	32	8	0.5 dram vial with specified etched 2D datamatrix code and matched 2D datamatrix code
2-SV-BC-DM	2mL	12	32	8	0.5 dram vial with specified etched 2D datamatrix code
2-SV-BC-1L	2mL	12	32	8	0.5 dram vial with specified etched linear barcode

Special Dual Labels

Linear and 2D datamatrix matched etched codes are available on the 4mL dram vials and 2mL 0.5 dram vials.

Custom Labels

In addition to the required symbology the labels may be supplied with additional information such as company information, logo or hazard information. The digital printing methods are able to produce coloured logos, print and key colour patches as shown.

Key to products Combi Pack

Level 300 Cleaned and Certified

These containers are processed and packaged under a registered ISO Quality Management System. The containers are laboratory certified to meet U.S. EPA Super Fund Standards in accordance with the latest edition of EPA's "Specifications and Guidance for Contaminant Free Sample Containers". The Level 300 Certificate of Analysis is backed by third party generated validatable laboratory data, and provides complete traceability through the production process. Every case of Level 300 product contains a Certificate of Analysis and is custody sealed to ensure reliable chain of-custody.

Level 200 Cleaned

These containers are processed and packaged under a strict registered ISO Quality Management System in the same manner as Level 300 products; however, Level 200 products are not certified. Every case of product is labelled with its production number and is custody sealed to ensure reliable chain-of-custody.

Level 100 Cleaned

These containers are processed and packaged under a strict registered ISO Quality Management System in the same manner as Level 300 products; however, Level 100 products are not certified or pre-cleaned. Every case of product is labelled with its production number and is custody sealed to ensure reliable chain-of-custody.

TOC Vials

Chromacol offers the only low-level certified vials in the market for Total Organic Carbon testing and sampling.
Major TOC instrument manufacturers recommend these vials when analysis of low levels of TOC requires low background level assurance.
Each lot of vials is tested and certified to contribute less than 10ppb TOC as background or for less stringent applications the 20ppb TOC version. The Certificate of Analysis is included with lot production numbers.

PART NUMBER	NOMINAL VOLUME	OD (mm)	HT (mm)	SCREW (mm)	DESCRIPTION	TOC	PACK SIZE
40-TOCSV-10	40mL	28	96	24	TOC clear vial with cap cover, open top cap TOC 10ppb		72
40-TOCSV-20	40mL	28	96	24	TOC clear vial with cap cover, open top cap TOC 20ppb		72

EPA Type Vials

Key to products Vial Cap Combi Pack Seal

For water samples and for environmental testing 20mL and 40mL EPA pattern vials are available with both injection and solid storage caps. These vials are to the same external size as other EPA pattern vials but in this form are supplied in separate packaging. All are manufactured from neutral borociliate glass Type 1, meeting USP and EPA requirements.

EPA Vials, Caps and Seals

PART NUMBER	NOMINAL VOLUME	OD (MM)	HT (MM)	SCREW (MM)	DESCRIPTION	PACK SIZE
40-EPASV	40mL	28	96	24	EPA clear vial	100
40-EPASV(A)	40mL	28	96	24	EPA amber vial	100
20-EPASV	20mL	28	57	24	EPA clear vial	100
20-EPASV(A)	20mL	28	57	24	EPA amber vial	100
24-ST3-EPA	-	-	-	-	EPA septa silicone/PTFE	100
24-SC-EPA	-	-	-	-	White EPA screw cap	100

Pre-assembled EPA vial kits

PART NUMBER	NOMINAL VOLUME	OD (MM)	HT (MM)	SCREW (MM)	DESCRIPTION	PACK SIZE
40-EPAVCS-PC3	40mL	28	96	24	EPA clear vial kit Level 300 vial/septa/cap	72
40-EPAVCS(A)-PC3	40mL	28	96	24	EPA amber vial kit Level 300 vial/septa/cap	72
40-EPAVCS-PC	40mL	28	96	24	EPA clear vial kit Level 200 vial/septa/cap	72
40-EPAVCS(A)-PC	40mL	28	96	24	EPA amber vial kit Level 200 vial/septa/cap	72
40-EPAVCS	40mL	28	96	24	EPA clear vial kit Level 100 vial/septa/cap	100
40-EPAVCS(A)	40mL	28	96	24	EPA amber vial kit Level 100 vial/septa/cap	100
20-EPAVCS-PC3	20mL	28	57	24	EPA clear vial kit Level 300 vial/septa/cap	72
20-EPAVCS-PC	20mL	28	57	24	EPA clear vial kit Level 200 vial/septa/cap	72
20-EPAVCS	20mL	28	57	24	EPA clear vial kit Level 100 vial/septa/cap	100
20-EPAVCS(A)	20mL	28	57	24	EPA amber vial kit Level 100 vial/septa/cap	100

Scintillation Vials

Chromacal scintillation vials provide the very lowest background count and benefit from very high optical clarity. They have a typical background count of 13CPM or lower, compared to an average 16-65CPM from competitive products. In addition these vials have a noise level of 2.28 and a quenching index factor of 349.

Scintillation Vials

PART NUMBER	DESCRIPTION	NOISE	BACKGROUND COUNT	QUENCHING INDEX FACTOR	PACK SIZE
20-EPSVCA	20mL vial with foil lined caps	2.28	13 CPM	349	500
20-EPSVCPE	20mL vial with polythene lined caps	2.28	13 CPM	349	500
20-EPSCA	Foil lined caps	-	-	-	500
20-EPSCPE	Polyethylene lined caps	-	-	-	500

Fraction Collection Tubes

Chromacol products that are capable of dealing with the demands of preparative liquid fraction collection equipment and liquid handling systems.

These fraction collection tubes are manufactured from neutral borosilicate glass giving reproducible recovery of compounds, whether acidic or basic. The base is precision formed to give a stable and secure position in the chosen racks.

The wall thickness is such as to give the robustness required for routine use and collection. The 33 expansion versions are re-usable and may be used in a range of drying, heating and evaporation instruments.

PART NUMBER	NOMINAL VOLUME	OD (mm)	HT (mm)	DESCRIPTION (Disposable)	PACK SIZE
FRAC-19150	34mL	19	150	34mL fraction collection tube, rimless, clear, round bottom	125
FRAC-18150	30mL	18	150	27mL fraction collection tube, rimless, clear, round bottom	125
FRAC-16100	15mL	16	100	15mL fraction collection tube, rimless, clear, round bottom	250
FRAC-13100	10mL	13	100	10mL fraction collection tube, rimless, clear, round bottom, may be used in genevac evaporation systems	250
FRAC-1275	6mL	12	75	6mL fraction collection tube, rimless, clear, round bottom, may be used in genevac evaporation systems	250
FRAC-1075	4mL	10	75	4mL fraction collection tube, rimless, clear, round bottom	250
FRAC-0650	0.7mL	6	50	0.7mL fraction collection tube, rimless, clear, round bottom	100

PART NUMBER	NOMINAL VOLUME	OD (mm)	HT (mm)	DESCRIPTION (Re-usable)	PACK SIZE
FRACG-19150	30mL	19	150	30mL fraction collection tube, rimless, clear, round bottom, type 33 glass	100
FRACG-16100	15mL	16	100	15mL fraction collection tube, rimless, clear, round bottom, type 33 glass	100
FRACG-13100	10mL	13	100	10mL fraction collection tube, rimless, clear, round bottom, may be used in genevac evaporation systems, type 33 glass	100
FRACG-1275	6mL	12	75	6mL fraction collection tube, rimless, clear, round bottom, may be used in genevac evaporation systems, type 33 glass	100
FRACG-1075	4mL	10	75	4mL fraction collection tube, rimless, clear, round bottom, type 33 glass	100

Vials and Caps

HPLC Technology Vials

For economy with quality these standard 12 x 32mm vials are manufactured from Type 1 neutral borosilicate glass in clear and amber with standard 11mm crimps and 8-425-screw finish.

The caps are provided pre-assembled with either rubber/PTFE or silicone/PTFE seals for use in most routine GC and HPLC applications.

PART NUMBER	DESCRIPTION (12 x 32 mm Crimp Top Vials)	Pack
AGE-A1100AHW	Amber crimp top vial 2mL	100
AGE-A1100HW	Crimp top vial 2mL-clear	100

PART NUMBER	DESCRIPTION (11 mm Crimp Caps)	Pack
AGE-A1150	11mm crimp cap rubber/PTFE seal	1000
AGE-A1153	11mm crimp cap silicone/PTFE seal	1000

PART NUMBER	DESCRIPTION (12 x 32 mm Screw Top Vials)	Pack
AGE-A1200AH	Amber screw top vial 2mL	100
AGE-A1200H	Screw top vial 2mL-clear	100

PART NUMBER	DESCRIPTION (8mm Screw Caps)	Pack
AGE-A1225	Screw cap with red rubber/PTFE liner	1000
AGE-A1227	Screw cap with silicone/PTFE liner	1000

Accessories and Reference Information




The Chromacol range of tools and accessories have been developed as a result of Chromacol's 30 years involvement in chromatography.

The range has been designed to make life easier for the chromatographer.

Instrument compatability, vial drawings and other valuable reference tools.

Seal Hardness

The hardness testing of plastics is most commonly measured by the Shore (Durometer) test. This method measures the resistance of plastics toward indentation and provides an empirical hardness value. Shore Hardness, is the preferred method for rubbers/elastomers and is also commonly used for 'softer' plastics such as fluoropolymers. Most septa hardness values are stated in Shore A. The results obtained from this test are a useful measure of relative resistance to piercing of various grades of polymers. This gives guidance on the type of needle that will penetrate the seal and whether thinner gauge needles may be used.

Seals in 8mm, 9mm, 11mm, 12mm Caps

Seal Material	Shore Hardness	Thickness
–TST1 Red PTFE/white silicone/red PTFE	57	1mm
–CBT1 Chlorobutyl/PTFE	52	1mm
–ST14 Blue silicone/PTFE	50	1.2mm
–6RT1/AC6 Natural rubber/PTFE	38	1mm
–ST101Blue silicone/PTFE	30	1mm
–ST143 White silicone/PTFE	20	1.4mm
–ST144 Blue silicone/redPTFE	20	1.4mm

Seal material	Shore Hardness	Thickness
–V1 Viton	62	1mm
–AC7 Natural rubber/PTFE	60	1mm
–8RT1 Natural rubber/PTFE	58	1mm
–ST2 White silicone/red PTFE	57	2mm
–ST18 White silicone/red PTFE	57	1.8mm
–ST15 White silicone/red PTFE	57	1.5mm
–ST1 White silicone/red PTFE	57	1mm

Seals in 20mm Caps

Seal Material	Shore Hardness	Thickness	Max temp
–CBT3B Chlorobutyl/PTFE	52	3mm	120˚C
–CBT3 Chlorobutyl/PTFE	52	3mm	120˚C
–CB3 Chlorobutyl/PTFE	52	3mm	120˚C
–ST3 Blue silicone/PTFE	45	3mm	200˚C

Seal Material	Shore Hardness	Thickness	Max temp
–ST3HT Red silicone/PTFE	45	3mm	250˚C
–ST3(W) White silicone/PTFE	57	3mm	200˚C
–AS3 White silicone/ aluminium	45	3mm	<170˚C
–ASH3 Red silicone/ aluminium	45	3mm	>170˚C

Seal properties

Rubber	Used primarily for routine analysis in gas chromatography. Offers moderate resealability and good chemical inertness. Not recommended for multiple injections or holding samples for further analysis. PTFE is protective layer that once broken exposes rubber to chemical attack.
PTFE/Red rubber - AC6, 6RT1	Low durometer of rubber allows ease of needle penetration. A popular and economical septa for general GC purposes.
PTFE/red rubber - AC7, 8RT1	Harder grade of rubber for use with piercing needle. Most popular and economical septa for general GC purposes in Agilent systems.
Pre-slit PTFE/red rubber - 8RT1X	Pre-slit, high quality red rubber with a thin (0.003") layer PTFE. For applications using a very thin-gauge syringe needle or in instances when a vacuum may form in the vial.
Silicone rubber	High quality, silicone rubber laminated to PTFE. Use when excellent resealing qualities are a must. Septum resists coring and is recommended when multiple injections are required. Preferred septa for use in liquid chromatography applications.
PTFE/silicone - ST1, ST15, ST18, ST2	A white medium hardness silicone with red PTFE protective layer available in a range of thickness.
PTFE/silicone - ST101, ST14	A very pure soft silicone laminated to PTFE. Septum resists coring and is recommended for instruments with fine gauge needles. Also recommended for LC-MS and GC-MS due to high purity.
PTFE /silicone/PTFE - ST143, ST144	A very soft silicone laminated to PTFE. Use with flexible needle.
PTFE /silicone/PTFE - TST1, TST11	A layer of PTFE on each side of medium hardness silicone. Most resistant to coring with above average resealing characteristics. Recommended for most demanding applications such as trace analysis, longer time between injections or for internal standards. Use with Gilson instruments and with any autosampler using large diameter, blunt-tip syringe needles.
Pre-slit PTFE/Silicone - ST1X, ST101X, ST14X	Pre-slit, high quality pure white silicone faced with PTFE. For applications using a very thin-gauge syringe needle or in instances when a vacuum may form in the vial. Highly recommended for Shimadzu and Hitachi autosampler units.
PTFE and fluoropolymers	Very good chemical resistance and used as a protective layer for less resistant elastomers.
PTFE – T, T02	For single injections and short sample cycles. This type of septa is not resealable.
Viton - V1	Viton provides the best chemical resistance with limited resealability. Recommended for chlorinated solvents. Due to Viton®'s intrinsic hardness, these septa are not suitable for 32-gauge syringe needles.
Integral plastic seal	Moulded as part of the cap.
Polyethylene – PE, Polypropylene – PP	Chemically resistant but for one time use only with no resealability.

20mm seal selection for Headspace applications

Butyl rubber/chlorobutyl rubber	An economical choice for low temperature (< 125°C) or low-pressure applications. Not suitable for alkanes, benzene, chlorinated solvents or cyclohexane without a protective PTFE layer.
Grey butyl stopper - B3P	Does not provide PTFE barrier.
Blue chlorobutyl - CB3	Does not provide PTFE barrier.
Blue chlorobutyl/natural PTFE - CBT3	Has PTFE barrier that makes it suitable for work with general organic solvents.
Grey PTFE/chlorobutyl molded - CBT3B	Specially molded seal with PTFE insert. Sealing surface of Butyl and PTFE affects a more positive seal than non-PTFE-faced septa. Ideal choice for temperatures below 125°C. Good sealing characteristics, excellent resistance to most solvents and coring, and high puncture tolerance. PTFE provides increased chemical resistance.
Silicone rubber	Excellent septa choice for volatiles with very low background peaks and low permeability. Also ideal for alcohols and aqueous samples. Good resealing characteristics and resistant to coring.
Natural PTFE/blue silicone – ST3	Best septa choice when temperatures are over 125°C.
Natural PTFE/red silicone - ST3HT	High temperature formulated seal with low bleed.. Best septa choice when temperatures are up to 250°C.
Blue Silicone/red PTFE - ST15	Thin 1.4mm seal with PTFE face for use with Fisons/ Carlo Erba Instruments. Resealing capability limited due to thinner silicone layer.
Aluminium/white silicone - AS3	Reflective aluminium face protects the silicone seal. The white silicone is suitable for use up to 170°C
Aluminium/red silicone - ASH3	Reflective aluminium face protects the silicone seal. The red silicone is suitable for use at temperatures of >170°C
Blue silicone/natural PTFE – ST101	Soft silicone with clean formulation for minimal interference. Thinner seal suitable for solvent washing, solvent extraction and SPME applications with some resealing. Not for direct headspace applications.
Freezer bungs - 2FB3	Butyl bungs for sealing of lyophilized products. Compatible with low storage temperatures.
PTFE/silicone ring – LLX	Thin PTFE layer with sealing ring to give secure closure for strong solvents. For use in liquid extraction or SPME stage during sample preparation. Does not reseal.

Sleeves and Springs

Support Sleeves

1 **TTS-312**
PTFE sleeve for 1.1-CTVG and 1.1-STVG.

2 **TTS-313**
PTFE sleeve for 1.1-CTVG and 1.1-STVG for all Agilent except 7673 1/11.

3 **TTS-314**
PTFE sleeve, blanked off base for use with Varian 1.1-CTVG and 1.1-STVG.

4 **RTS-1**
Rubber support, grips taper of 1.1-CTVG and 1.1-STVG.

5 **PWS-11**
Support for 12 x 32mm vials for use in the Fisons AS 800, in place of a 2.5mL vial.

6 **WS-1**
PTFE sleeve for use with 05-CTV(A).

7 **WS-2**
PTFE sleeve for use with Waters 48 vial tray, 1.1-CTVG and 2-CV.

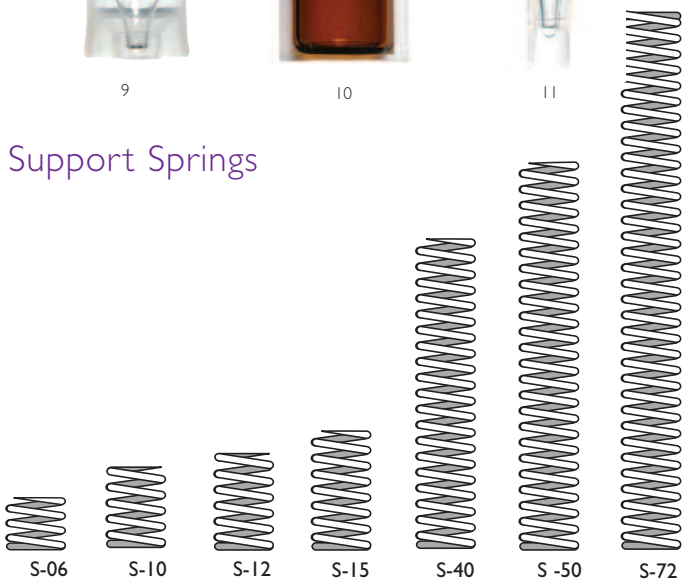
8 **WS-5**
PTFE sleeve for use with 06-CTV(A) and 08-CRV(A) with all Agilent Technologies except 1090A.
Also used with Autometric 4100, Beckman 501/502/507, Dani ALS 86.80, LDC.
PerkinElmer Integral 4000, PU-4247, Shimadzu AOC-14/1400, SIL-6B/9A/LC-10A, Spark, Spectra-Physics.
Any autosampler that uses an SV-S11A sleeve, can also use WS-5 sleeve.

9 **WS-6**
A polyethylene support for use with 09-CTV when used with Agilent 7673 autosamplers, Series I and II.

10 **WS-7**
PTFE sleeve for use with Waters 717 and 2mL crimp-top vials.

11 **MTS-1**
Polyethylene self-centering support device for use with 02-MTV and 02-MTVWG inserts.

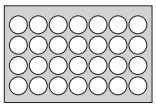
Support Springs

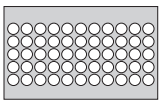


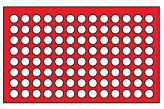
Vial Racks

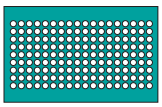
Sci-Rak

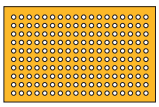

T-25


T-28

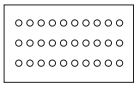

T-55

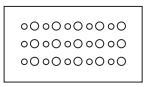

T-104

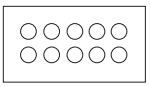

T-162

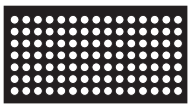

T-180

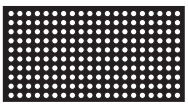
Other Trays

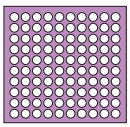

T-15/308


T-15/302


T-10/20


T-105


T-200

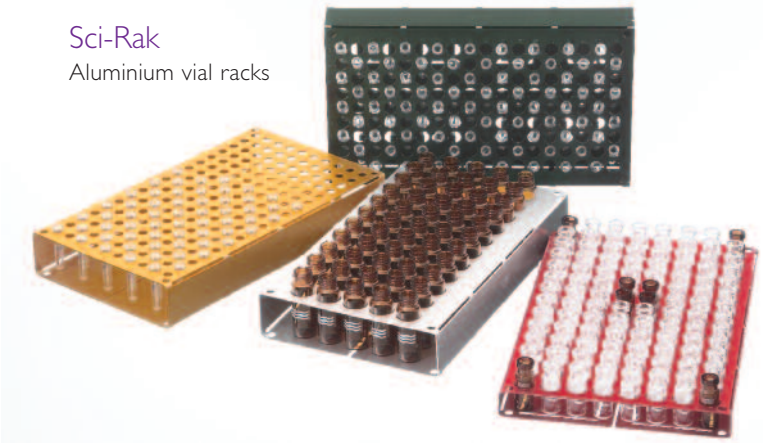

B-100

B-100 vial racks

These racks are supplied in packs of five assorted colours. Each rack is alpha numerically indexed and has its own lid.

Sci-Rak

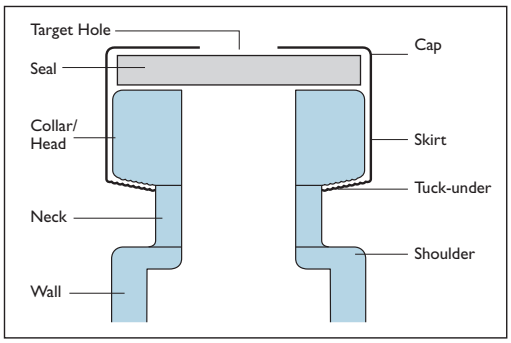
Aluminium vial racks



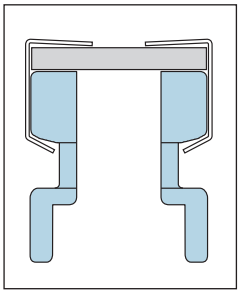
PART NUMBER	SIZE (mm)	MATERIAL	COLOUR	NO OF VIALS	O.D. OF VIALS (mm)	STACKABLE	DUAL PURPOSE
B-100	140 x 140	Plastic	Various	100	12	Yes	No
T-25	85 x 85	Anodised aluminium	Blue	25	12	No	No
T-55	210 x 134	Anodised aluminium	Silver	55	15	Yes	No
T-28	210 x 134	Anodised aluminium	Silver	28	22	No	No
T-104	210 x 134	Anodised aluminium	Red	104	12	Yes	No
T-162	210 x 134	Anodised aluminium	Green	162	9	Yes	No
T-180	210 x 134	Anodised aluminium	Gold	180	6	Yes	No
T-15/308	178 x 108	Hard inert plastic	White	15	8 and 6	No	Yes
T15/302	188 x 108	Hard inert plastic	White	15	12 and 6	No	Yes
T-10/20	195 x 103	Hard inert plastic	White	10	22	No	No
T-105	210 x 134	Foam	Black	105	12	No	No
T-200	210 x 134	Foam	Black	200	8	No	No

Crimpers and Capping Systems

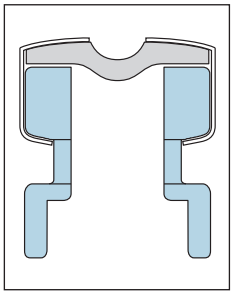
Your selection and technique for crimping can have a significant effect on the preservation of sample integrity. The crimpmate system creates a perfect seal, ensuring sample integrity.



Correctly Crimped Vial



Undercrimped Vial



Overcrimped Vial

An over crimped vial will undoubtedly cause coring and needle bending, however, tests revealed that over crimping will also cause the injection site hole to increase by as much as 50% over that of a correctly crimped vial. The softer the seal the more prevalent this condition becomes. The Chromacol Crimpmate system provides a consistant reproducible perfect crimped seal.

Crimpmate

The benchtop crimper is a complete workstation which requires little effort to create a perfect seal. Steel jaws provide a long life and reproducible crimp pressures. It can be assembled or dismantled in a few minutes and has a substantial steel base for balance and stability. Crimpmate has a unique lever action, which greatly reduces the effort needed to generate a perfectly crimped vial.

Each workstation can handle a wide variety of different seals and caps, since it is designed to accept interchangeable jaws.

Four jaw sizes are currently available for 8, 11, 13 and 20mm crimp caps. Jaws can be changed in as little as 6 seconds and each is adjustable to cope with variations in vial collar and seal thickness.

Crimpmate and Autocrimp Systems

PART NUMBER	DESCRIPTION	Complete Workstations
CMS-8	Workstation with 8mm jaws	
CMS-11	Workstation with 11mm jaws	
CMS-13	Workstation with 13mm jaws	
CMS-20	Workstation with 20mm jaws	

PART NUMBER	DESCRIPTION	Workstation Components Base Unit
CMS-0	Workstation without jaws	
CMSP-0	Autocrimp pneumatic workstation without jaws	

PART NUMBER	DESCRIPTION	Crimping Jaws
CMJ-8	8mm jaw set	
CMJ-11	11mm jaw set	
CMJ-13	13mm jaw set	
CMJ-20	20mm jaw set	
CMJF-20	20mm jaw set for flip top caps	

PART NUMBER	DESCRIPTION	De-capping Jaws
CDJ-8	De-capper jaw for 8mm vials	
CDJ-11	De-capper jaw for 11mm vials	
CDJ-20	De-capper jaw for 20mm vials	

Autocrimp

This unit is actuated by compressed air (5-6 bar) and is operated by a foot pedal leaving the operator with both hands free for sample manipulation.

The CMSP-0 Autocrimp workstation uses the same interchangeable jaws for crimping and decapping as the Crimpmate, see previous page.

Electronic Crimpers

Chromacol electronic handheld crimpers give tight, reproducible seals every time. Adjustable, slim steel jaws fit around closely spaced vials, enabling users to crimp vials directly in crowded autosampler trays. Using the same handheld design as the crimpers, Chromacol's new electronic decappers remove caps instantly and are designed for laboratories that recycle vials.

PART NUMBER	DESCRIPTION
ECR-11	Electronic crimper with 11mm steel jaws
ECR-20	Electronic crimper with 20mm steel jaws
EDCB-11	Electronic decapper with 11mm steel jaws
EDCB-20	Electronic decapper with 20mm steel jaws

Hand Crimpers

All Chromacol hand crimpers have an adjustable stop, to give reproducible crimp pressures and to compensate for any small variations in vial collar and seal thickness. Crimpers for fliptop caps are also available upon request.

PART NUMBER	DESCRIPTION
CR-8	Hand crimper with 8mm steel jaws
CR-11	Hand crimper with 11mm steel jaws
CR-13	Hand crimper with 13mm steel jaws
CR-20	Hand crimper with 20mm steel jaws
CR-30	Hand crimper with 30mm steel jaws

De-Cappers

The DCB-8, 11 and 20 allow they removal of 8, 11 and 20mm caps with considerable less effort and eliminate the risk of the vial breaking in the process. This system is ideal for the environmentally conscious company who wishes to separate all four elements (the sample, the glass, the cap and the seal).
A range of pliers type de-cappers is also available which allow the easy removal of aluminium crimp top caps from glass vials.

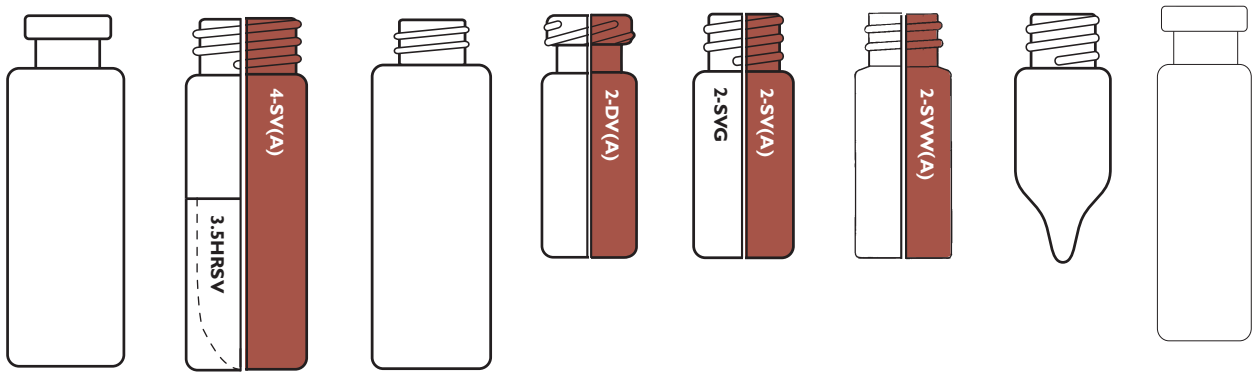
PART NUMBER	DESCRIPTION
DCB-8	De-capper with 8mm jaws
DCB-11	De-capper with 11mm jaws
DCB-20	De-capper with 20mm jaws
DCR-8	De-capper (pliers type) for 8mm caps
DCR-11	De-capper (pliers type) for 11mm caps
DCR-13	De-capper (pliers type) for 13mm caps
DCR-20	De-capper (pliers type) for 20mm caps
DCR-30	De-capper (pliers type) for 30mm caps

Instrument	Model	Crimp 8mm	Snap/Crimp 11mm	Screw 8mm/9mm	Sci-Vi Sleeve	Headspace	Number of WebSeal Plates
Agilent	1050	✔	✔	9mm	SV-S11A		
	1100/1200/NanoFlow		✔	9mm	SV-S11A	✔	
	1100/1200 Well-Plate		✔	9mm	SV-S11A		2
	1090A	✔	✔	✔	SV-S4	✔	
	6850 ALS		✔		SV-S11A		
	7673A/7683		✔		SV-S14		
	7680A SFE/7694/G1888					✔	
	G1888					✔	
	Model 220						12
	1200 SL plus		✔	✔			2
AI	42 Vial Tray		✔		SV-S1		
	60 Vial Tray	✔			SV-S2		
AIM	CPS-100/200		✔	✔	SV-S1		
Alcott	708AL				Neckless		
	718AL/719D		✔	✔	SV-S3A		2 or 31
Alpha M.O.S.	Fox/Prometheus		✔	✔	SV-S1	M	
	Kronos		✔	✔	SV-S1		
Altex™	**See Beckman-Coulter**						
Antec Leyden™	Alexys		✔	✔	SV-S1		
ATAS GL™	Focus		✔	✔	SV-S1	M	
Beckman-Coulter™	501/507/System Gold	✔	✔	✔	SV-S11A		
	504				SV-S2		
Bruker™	MapII						12
	LC51			4mL	SV-S15		
Carlo Erba	**See Fisons Instruments**						
CTC Analytics	LC PAL/GC PAL	✔	✔	✔	SV-S1		4
	Combi PAL	✔	✔	✔	SV-S1	M	4
	HTC PAL/HTS PAL	✔	✔	✔	SV-S1		9
	TwinPAL	✔	✔	✔		M	2
	IFC PAL			✔			24
DANI	Master AS		✔	✔			
	Master DHS					✔	
	ALS-1000/39.80/86.80		✔		SV-S1		
	HSS 39.50/86.50/SPT 37.50					✔	
Dionex	AS-HV			✔			
	Ultimate 3000	✔	✔	✔			3
	ASI-100/AS50		✔	✔	SV-S1		
	AS40			4mL	SV-S15		
	FAMOS		✔	✔	SV-S1		1
Dynatech	LC-241	✔	✔	✔	SV-S2		
Eksigent®	NanoLC-AS1		✔	✔			1
ESA®	540-MT		✔	✔	SV-S1		1
	540		✔	✔	SV-S1		
EST™	Markelov 9000					✔	
	LC-241plus	✔	✔		SV-S1		
	Cobra	✔	✔	✔			
Fisons Instruments	A-200S/AS 150/800/8000		✔	✔	SV-CE		
	AS 200	✔					
GBC™	LC 1650		✔	✔	SV-S1		
GE Healthcare™	Ettan A-950		✔	✔			1
GE Instruments™	Sievers 900			✔			
Gerstel	MPS 2		✔	✔	SV-S1	M	4
	MPS 3		✔	✔	SV-S1		
Gilson	234/Asted/Aspec		✔	✔	SV-S1		
	235		✔	✔	SV-S1		4
	231 XL/232 XL/233 XL	✔	✔	✔	SV-S1		
	215		✔	✔	SV-S1		12
	250		✔	✔	SV-S1		2
Gynkotek/Softron	GINA 50/160		✔	✔	SV-S1		
HTA™	HT310A		✔	✔			
	HT300A		✔		SV-S1		4
	HT200H		✔				
ICI	**See GBC**						
Jasco	851/AS-950/1550/1555			Flange	SV-S12A		
	AS-2059/AS-2059Plus			Flange	SV-S12A		2
	AS-2055/AS-2057			Flange	SV-S12A		1
	AS-2059-SF/X-LC	✔		✔	SV-S12A		2
Konik™	K-Mass		✔				
Kontron	MSI-660			4mL	SV-S15		
	360/460/560/565		✔	✔	SV-S1		
Knauer™	Smartline 3800/3900		✔	✔	SV-S1		
LDC	**See TSP**						
LEAP Technologies	**See CTC Analytics**						
Merck-Hitachi	AS-1000/AS-2000		✔	✔	SV-S3A		
	AS-4000		✔		SV-S3A		
	Lachrom L-7200		✔	✔	SV-S1		

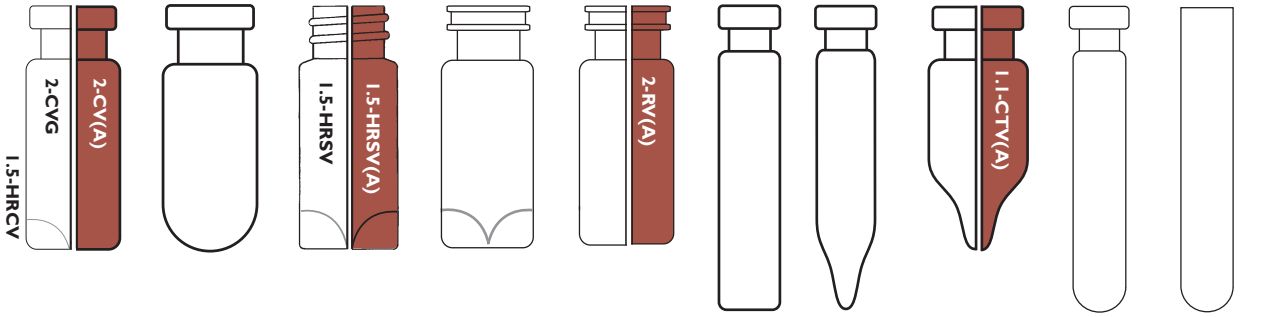
Instrument	Model	Crimp 8mm	Snap/Crimp 11mm	Screw 8mm/9mm	Sci-Vi Sleeve	Headspace	Number of WebSeal Plates
	Lachrom Elite L-2200		✔	✔	SV-S1		2
	Lachrom Ulta L-2200U		✔	✔	SV-S1		2
Metrohm™	Triathlon		✔	✔	SV-S1		
NLG™ HTA	HT300A/HT300L		✔	✔	SV-S1		
	HT200H					✔	
PerkinElmer	Autosystem/AS-2000/ Clarus 500/600		✔	4mL	SV-S1		
	Integral 4000		✔	✔	SV-S11A		
	ISS-100/200/Series 200	✔	✔	✔	SV-S11A		
	Model 225		✔	✔	SV-S1		
	HS16/40/120					✔	
	LC Plus	✔	✔	✔	SV-S11A		1
	Turbomatrix HS110					✔	
Pharmacia	2157/Akta A-900		✔	✔	SV-S1		
Philips	**See Unicam**						
Polymer Labs	GPC 110/210		✔	✔	SV-S1		
Pye	**See Unicam**						
Selerity™	3100		✔	✔	SV-S1		
Sepiatec™							30
SGE™	LS-3200		✔	✔	SV-S1		
Shimadzu	AOC-8B/9 AOC-14/1400		✔	✔	SV-S11A		
	AOC-5000		✔		SV-S1	M	
	AOC-20		✔		SV-S1		
	AOC-20S	✔	✔	✔	SV-S1	✔	4
	HSS-2B/4B					✔	
	SIL-2A			4mL	SV-S15		
	SIL-2/6A/6B/9A			Flange	SV-S12A		
	SIL-10A			✔	SV-S11A		
	SIL-20A		✔	✔	SV-S11A		
	SIL-HT/10ADVP	✔	✔	✔	SV-S11A		2
	LC-2010	✔	✔	✔	SV-S11A		4
	Prominence		✔	✔	SV-S11A		2 or 14
Spark	Marathon/Promis/Midas		✔	✔	SV-S1		
	Symbiosis/Reliance		✔	✔	SV-S1		24
	Symbiosis Pico						24
	Alias/Prospekt 2		✔	✔	SV-S1		2
	Endurance/Triathlon		✔	✔	SV-S1		2
Spectra Physics	SP8875/8880		✔	✔	SV-S3A		
	AS100/300/1000/3000		✔	✔	SV-S1		
Teledyne Tekmar	7000/7050					✔	
	HT3A					✔	
Thermo Scientific	Surveyor™/Accela		✔	✔	SV-S1		2
	AS 3000/TraceGC/ Surveyor Plus™ Lite		✔	9mm	SV-S1		
			✔	✔	SV-S1		2
	Focus GC						
	TriPlus AS		✔	✔	SV-S1		
	TriPlus HS					✔	
TOA	ICA-5000450/5450		✔	Flange	SV-S12A		
Tosoh™	TSK-6080/AS-8010/ AS-8020		✔	Flange & 4mL	SV-S12A		
Tracor	770/771/772		✔		SV-S1		
TSP	AM4100		✔		SV-TSP		
	AS3000		✔	✔	SV-TSP		
Unicam	LC-XP/4710/4247		✔	4mL	SV-S1 & SV-S15		
	4700GC/LC/S4/S8	✔	✔		SV-S1		
	612	✔	✔		SV-S2		
Varian	CP-8410		✔	✔	SV-S3A		
	Genesis					✔	
	CombiPAL					M	
	8034/8035/8100/8200		✔		SV-S3A		
	9095/9100		✔	✔	SV-S1		
	920-LC		✔	✔	SV-S1		3
	940-LC		✔	✔	SV-S2		4
	ProStar 400/410/420/430		✔	✔	SV-S1		
Waters	WISP 96	✔			SV-S2 & Neckless		
	WISP 48			4mL	SV-S15		
	717Plus	✔	✔	✔	SV-S11A		
	Alliance 2690		✔	✔	SV-S1		2
	Model 2707		✔	✔	SV-S1		4
	Model 2767						4
	Model 2777						12
	Alliance HTS						2
	Acquity		✔	✔	SV-S1		2 or 21
	Acquity Sample Organizer		✔	✔			12
	NanoAcquity		✔	✔	SV-S1		2
	CapLC		✔	✔	SV-S1		1

Vials

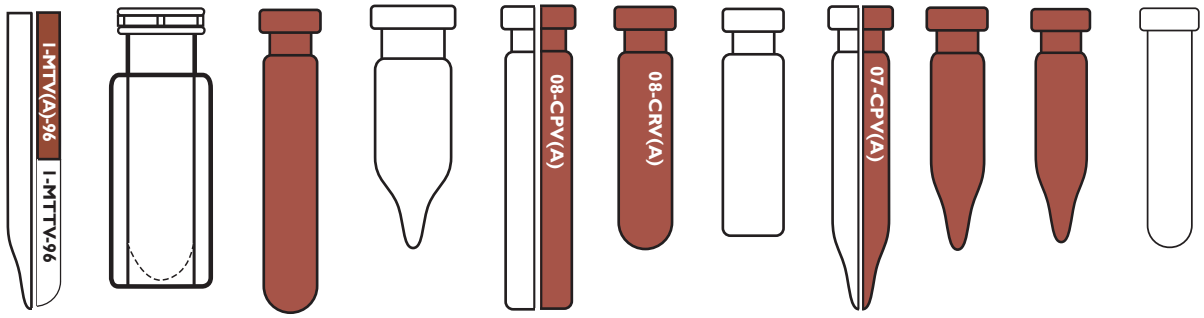
4-CV	4-SV	4-SVQ	2-DV	2-SV	2-SVW	1.1-STVG	2.5-CV
15 x 46mm	15 x 46mm	15 x 46mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 40mm



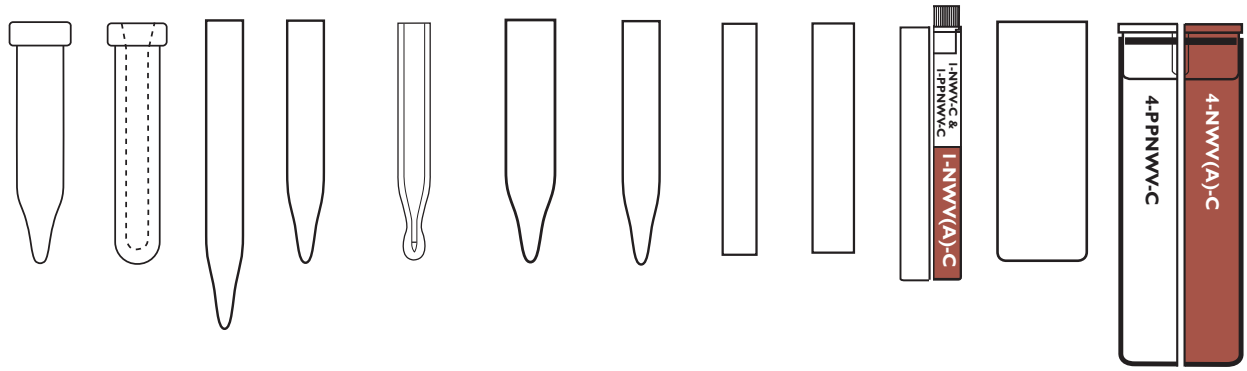
2-CV	2-CRV	1.5-HRSV(S)	1.5-HRRV	2-RV	1.2-CWV	1-CWV	1.1-CTVG	1.1-CRV	1.1-MTV-96
12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	8 x 40mm	8 x 40mm	12 x 32mm	7 x 42mm	7 x 42mm



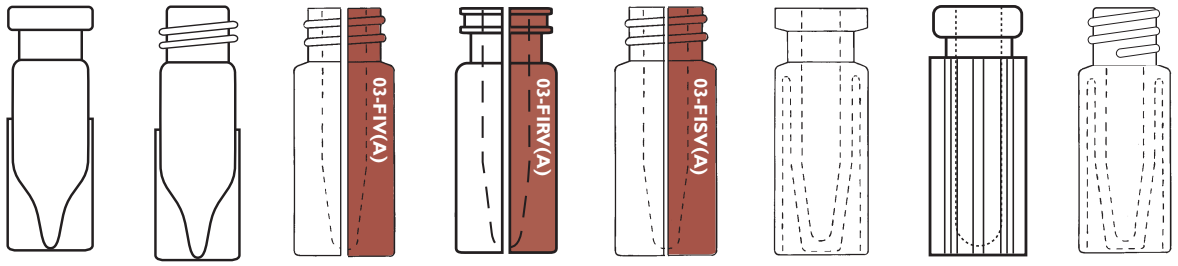
1-MTV-96	07-HRPMPCV	1-CRV(A)	09-CTV	08-CPV	08-CRV(A)	08-CV	07-CPV	06-CTV(A)	05-CTV(A)	03-CVG
6 x 42mm	12 x 32mm	7 x 40mm	10 x 32mm	7 x 40mm	7 x 32mm	8 x 30mm	7 x 40mm	7 x 32mm	7 x 30mm	6 x 32mm



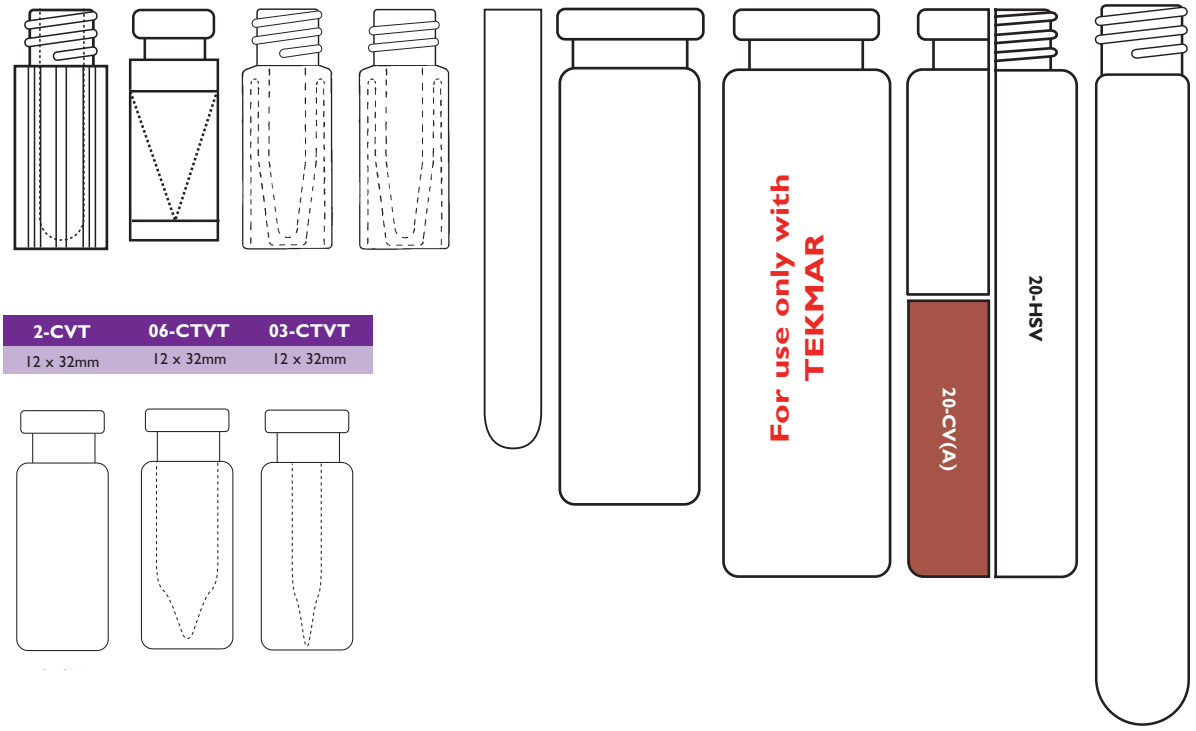
02-CTVG	01-CVG	03-MTV	02-MTV	02-MTVMP	02-MTVWG	05-MTV-96	02-NV	03-NV	1-NWV	2.5-NVG	4-NWV-C
6 x 32mm	6 x 32mm	5 x 38mm	5 x 30mm	6 x 30mm	6 x 30mm	6.5 x 31mm	5 x 31mm	6 x 31mm	8 x 40mm	12 x 32mm	15 x 46mm



09-FIV	09-FISV	03-FIV	03-FIRV	03-FISV	06-PECV	06-PPCV	06-PESV
12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm	12 x 32mm



06-PPSV	03-PECV	03-PPSV	03-PPSVW	1.5-MTV-96	12-CV	22-CV	20-CV	10-SV
12 x 32mm	12 x 30mm	12 x 32mm	12 x 32mm	7 x 60mm	18 x 65mm	22 x 75mm	22 x 75mm	13 x 100mm



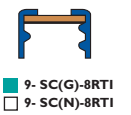
2-CVT	06-CTVT	03-CTVT
12 x 32mm	12 x 32mm	12 x 32mm

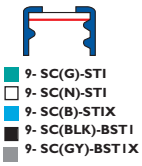
5-SV	9-CV	6-CV	20-EPSVCA	27-CV	10-CV
13 x 65mm	18 x 50mm	22 x 38mm	27 x 57mm	30 x 60mm	22 x 45mm

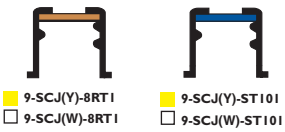
Profiles

12-SC	12-SCS	12-SC-ST2	12-SC-8RTI	11-DSC(R)	11-DSC(R)-ST14X
12 x 10mm	12 x 10mm	12 x 10mm	12 x 10mm	11 x 6.5mm	11 x 6.5mm

9-SC(B)-8RTI	9-SC(B)ST101	9-SC(B)-STI	9-SC(B)-TSTI	9-SCS-8RTI	9-SCJ-8RTI	9-SCJ-ST101	9-SCJ-ST15
9 x 6.5mm	9 x 6.5mm	9 x 6.5mm	9 x 6.5mm	9 x 6.5mm	9 x 9mm	9 x 9mm	9 x 9mm

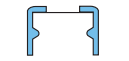


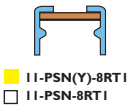


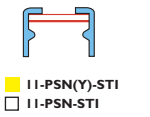


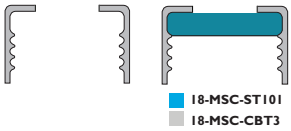
8-SCS	8-SC	8-SCJ	8-SC(B)	8-SC-8RTI	8-SC-ST15	11-PSN(B)	11-PSN(B)-ST101
8 x 9mm	8 x 9mm	8 x 9mm	8 x 6mm	8 x 9mm	8 x 9mm	9 x 6.5mm	9 x 6.5mm

11-PSN(B)-T02	11-PSN(B)-TSTI	11-PSN(B)-8RTI	11-PSN(B)-STIX	11-PSN(B)-STI	18-MSC	18-MSC-ST3
9 x 6.5mm	9 x 6.5mm	9 x 6.5mm	9 x 6.5mm	9 x 6.5mm	18 x 13mm	18 x 13mm









12-ST2	12-ST143	12-ST18	12-6RTI	12-ST101	12-T02	11-6RTI
12 x 2mm	12 x 1.5mm	12 x 1.8mm	12 x 1mm	12 x 1mm	12 x 0.25mm	10 x 1mm

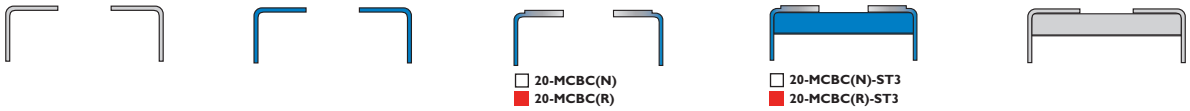
11-LLX	11-ST14	11-ST15	11-T02	8-ST14	8-ST14X	8-ST143
11 x 3mm	10 x 1.4mm	10 x 1.5mm	11 x 0.25mm	8 x 1.4mm	8 x 1.4mm	8 x 1.5mm

8-ST144	8-6RTI	8-ST101	8-T02	8-TSTI	8-TSTII	8-ST15	20-AS3/ASH3
8 x 1.4mm	8 x 1mm	8 x 1mm	8 x 0.25mm	8 x 1mm	8 x 1mm	8 x 1.5mm	20 x 3mm

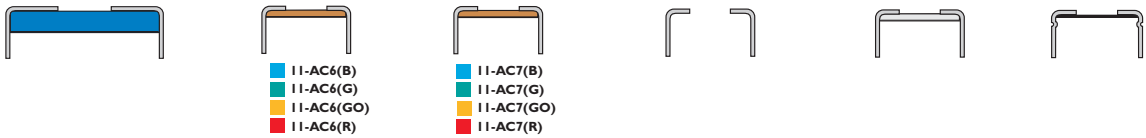
20-CB3	20-CBT3	20-CBT3B	20-LLX	20-ST3	20-ST3HT
20 x 3mm	20 x 3mm	20 x 3mm	20 x 3mm	20 x 3mm	20 x 3mm

18-ST3	20-ST101	18-ST101	20-B3P	20-2FB3
18 x 3mm	20 x 1mm	18 x 1mm	20 x 9mm	20 x 13mm

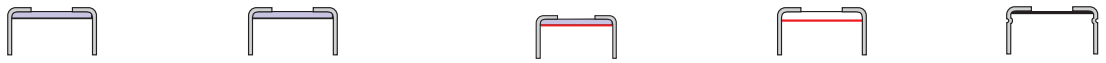
20-ACB	20-MCB	20-MCBC	20-MCBC-ST3	20-AC-CBT3
20 x 7mm	20 x 7mm	20 x 7mm	20 x 7mm	20 x 7mm



20-AC-ST3	11-AC6	11-AC7	11-ACB	11-AC-CBT1	11-AC-PP
20 x 7mm	11 x 6mm	11 x 6mm	11 x 6mm	11 x 6mm	11 x 6mm

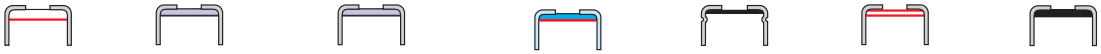


11-AC-ST101	11-AC-ST101X	11-AC(B)-ST144	11-AC-ST15	11-ACT
11 x 6mm	11 x 6mm	11 x 6mm	11 x 6mm	11 x 6mm



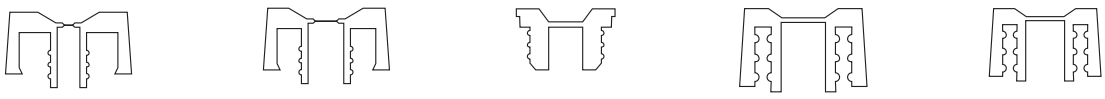
11-AC-TST1	11-AC-V1	8-AC6	8-AC7	8-ACB	8-AC-CBT1
11 x 6mm	11 x 6mm	8 x 5mm	8 x 5mm	8 x 5mm	8 x 5mm

8-AC-ST15	8-AC-ST101	8-AC-ST101X	8-AC(B)-ST144	8-ACT	8-AC-TST1	8-AC-V1
8 x 5mm	8 x 5mm	8 x 5mm	8 x 5mm	8 x 5mm	8 x 5mm	8 x 5mm



12-PEP4	11-PEP2	11-PEP2W	8-PEP1	8-NPWP	20-PEPC5
15 x 10mm	11 x 6mm	11 x 6mm	8 x 9mm	8 x 9mm	20 x 10mm

11-PEPC3X	11-PEPC3XW	12-NPEP4	12-SCP	8-SCP
11 x 6mm	11 x 6mm	12 x 7mm	12 x 10mm	8 x 9mm



11-PEC1	8-PEC1	8-PEC-ST1X	11-PEC1X	8-PEC1X	11-PEC-8RT1	11-PEC-ST1
11 x 6mm	8 x 5mm	8 x 5mm	11 x 6mm	8 x 5mm	11 x 7mm	11 x 7mm

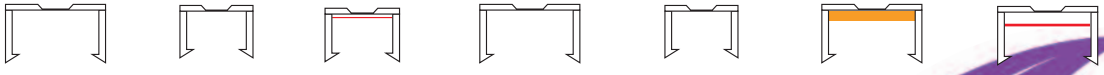


Table of Solubilities

SEALING MATERIAL

SOLVENT

	AC6	AC7	B3P	CBT1	CB3	CBT3	LDPE	HDPE	PP	PTFE
Acetic Acid Aqueous	A(A)	A(B)	A(B)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Acetone	A(A)	A(C)	A(A)	A(A)	A(A)	A(A)	D(D)	B(B)	B(B)	A(A)
Acetonitrile	A(A)	A(-)	-	A(A)	A(A)	A(A)	-	-	-	A(A)
Alcohols(Aromatic)	A(B)	A(D)	-	A(B)	B(B)	A(B)	D(D)	D(D)	B(B)	A(A)
Alcohols(Aliphatic)	A(A)	A(B)	A(B)	A(A)	A(A)	A(A)	D(D)	B(B)	B(B)	A(A)
Amyl Acetate	A(A)	A(D)	A(C)	A(A)	A(A)	A(A)	D(D)	D(D)	-	A(A)
Aqueous Solutions Dilute	A(A)	A(-)	-	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Benzene	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Butyl Alcohol	A(B)	A(A)	A(B)	A(B)	B(B)	A(B)	B(B)	B(B)	B(B)	A(A)
Carbon Disulphide	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Carbon Tetrachloride	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Chloroform	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Cyclohexane	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	-	-	-	A(A)
Cyclohexanol	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	B(B)	A(A)
Diethyl Ether	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Dimethyl Sulphoxide	A(C)	A(D)	D(D)	A(C)	C(C)	A(C)	-	-	-	A(A)
Dioxane	A(B)	A(D)	A(B)	A(B)	B(B)	A(B)	-	-	-	A(A)
Esters	A(B)	A(D)	A(C)	A(B)	B(B)	A(B)	D(D)	D(D)	B(B)	A(A)
Ethyl Acetate	A(B)	A(D)	A(B)	A(B)	B(B)	A(B)	D(D)	D(D)	B(B)	A(A)
Ethyl Alcohol	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	D(D)	B(B)	B(B)	A(A)
Ethylene Chloride	A(D)	A(D)	A(C)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Ethylene Glycol	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Formaldehyde	A(B)	A(B)	A(A)	A(B)	B(B)	A(B)	A(A)	A(A)	A(A)	A(A)
Glycol	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Halogenated Hydrocarbons	A(D)	A(C)	A(B)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Hexane	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	-	-	-	A(A)
Hydrochloric Acid Dilute	A(A)	A(C)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Iso-Octane	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	-	-	-	A(A)
Ketones	A(A)	A(C)	A(B)	A(A)	A(A)	A(A)	D(D)	B(B)	B(B)	A(A)
MeOH/H_2O/Acetonitrile	A(A)	A(-)	-	A(A)	A(A)	A(A)	-	-	-	A(A)
Methanol	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	-	-	-	A(A)
Methyl Chloride	A(C)	A(D)	A(C)	A(C)	C(C)	A(C)	D(D)	D(D)	D(D)	A(A)
Methyl Acetate	A(B)	A(C)	A(A)	A(B)	B(B)	A(B)	D(D)	D(D)	B(B)	A(A)
Methyl Ethyl Ketone	A(A)	A(D)	A(B)	A(A)	A(A)	A(A)	D(D)	B(B)	B(B)	A(A)
Methylene Chloride	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Nitric Acid Dilute	A(A)	A(D)	A(B)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Pentane	A(D)	A(-)	-	A(D)	D(D)	A(D)	-	-	-	A(A)
Petroleum Ether	A(D)	A(-)	-	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Sodium Hydroxide	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Sulphuric Acid Dilute	A(D)	A(C)	A(B)	A(D)	D(D)	A(D)	A(A)	A(A)	A(A)	A(A)
Surfactants	A(A)	A(-)	-	A(A)	A(A)	A(A)	-	-	-	A(A)
Toluene	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	B(B)	A(A)
Trichloroethylene	A(D)	A(D)	D(D)	A(D)	D(D)	A(D)	D(D)	D(D)	D(D)	A(A)
Water	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)

SOLVENT

	ST3	ST2	ST18	ST15	ST14	ST144	ST143	ST101	TST11	TST1	VITON
Acetic Acid Aqueous	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	D(D)
Acetone	A(D)	A(B)	A(A)	A(A)	A(A)	A(D)	A(B)	A(A)	A(A)	A(B)	D(D)
Acetonitrile	A(A)	A(-)	A(A)	A(A)	A(A)	A(A)	A(-)	A(A)	A(A)	A(-)	B(B)
Alcohols(Aromatic)	A(B)	A(-)	A(A)	A(A)	A(A)	A(B)	A(-)	A(A)	A(A)	A(-)	-
Alcohols(Aliphatic)	A(B)	A(-)	A(A)	A(A)	A(A)	A(B)	A(-)	A(A)	A(A)	A(-)	-
Amyl Acetate	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	D(D)
Aqueous Solutions Dilute	A(A)	A(-)	A(A)	A(A)	A(A)	A(A)	A(-)	A(A)	A(A)	A(-)	-
Benzene	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	A(A)
Butyl Alcohol	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(A)
Carbon Disulphide	A(D)	A(-)	A(A)	A(A)	A(A)	A(D)	A(-)	A(A)	A(A)	A(-)	A(A)
Carbon Tetrachloride	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	A(A)
Chloroform	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	A(A)
Cyclohexane	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	A(A)
Cyclohexanol	A(D)	A(-)	A(B)	A(B)	A(B)	A(D)	A(-)	A(B)	A(B)	A(-)	A(A)
Diethyl Ether	A(D)	A(-)	A(B)	A(B)	A(B)	A(D)	A(-)	A(B)	A(B)	A(-)	D(D)
Dimethyl Sulphoxide	A(D)	A(-)	A(A)	A(A)	A(A)	A(D)	A(-)	A(A)	A(A)	A(-)	C(C)
Dioxane	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	D(D)
Esters A(B)	A(-)	A(B)	A(B)	A(B)	A(B)	A(-)	A(B)	A(B)		A(-)	-
Ethyl Acetate	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	A(B)	D(D)
Ethyl Alcohol	A(A)	A(B)	A(A)	A(A)	A(A)	A(A)	A(B)	A(A)	A(A)	A(B)	-
Ethylene Chloride	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	-
Ethylene Glycol	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)
Formaldehyde	A(B)	A(B)	A(A)	A(A)	A(A)	A(B)	A(B)	A(A)	A(A)	A(B)	D(D)
GlycolA(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)		A(A)	-
Halogenated Hydrocarbons	A(D)	A(-)	A(A)	A(A)	A(A)	A(D)	A(-)	A(A)	A(A)	A(-)	-
Hexane	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	-
Hydrochloric Acid Dilute	A(D)	A(-)	A(A)	A(A)	A(A)	A(D)	A(-)	A(A)	A(A)	A(-)	A(A)
Iso-Octane	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	-
Ketones	A(D)	A(-)	A(B)	A(B)	A(B)	A(D)	A(-)	A(B)	A(B)	A(-)	-
MeOH/H_2O/Acetonitrile	A(A)	A(-)	A(B)	A(B)	A(B)	A(A)	A(-)	A(B)	A(B)	A(-)	-
Methanol	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	D(D)
Methyl Chloride	A(D)	A(D)	A(A)	A(A)	A(A)	A(D)	A(D)	A(A)	A(A)	A(D)	A(A)
Methyl Acetate	A(D)	A(D)	A(B)	A(B)	A(B)	A(D)	A(D)	A(B)	A(B)	A(D)	D(D)
Methyl Ethyl Ketone	A(D)	A(D)	A(A)	A(A)	A(A)	A(D)	A(D)	A(A)	A(A)	A(D)	D(D)
Methylene Chloride	A(D)	A(-)	A(B)	A(B)	A(B)	A(D)	A(-)	A(B)	A(B)	A(-)	-
Nitric Acid Dilute	A(D)	A(B)	A(B)	A(B)	A(B)	A(D)	A(B)	A(B)	A(B)	A(B)	A(A)
Pentane	A(D)	A(-)	A(C)	A(C)	A(C)	A(D)	A(-)	A(C)	A(C)	A(-)	-
Petroleum Ether	A(D)	A(-)	A(C)	A(C)	A(C)	A(D)	A(-)	A(C)	A(C)	A(-)	-
Sodium Hydroxide	A(A)	A(B)	A(A)	A(A)	A(A)	A(A)	A(B)	A(A)	A(A)	A(B)	D(D)
Sulphuric Acid Dilute	A(D)	A(D)	A(B)	A(B)	A(B)	A(D)	A(D)	A(B)	A(B)	A(D)	A(A)
Surfactants	A(A)	A(-)	A(A)	A(A)	A(A)	A(A)	A(-)	A(A)	A(A)	A(-)	-
Toluene	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	A(A)
Trichloroethylene	A(D)	A(D)	A(C)	A(C)	A(C)	A(D)	A(D)	A(C)	A(C)	A(D)	A(A)
Water	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	A(A)	B(B)

Key: The first character indicates the characteristics of the seal prior to any injection.
The second character in ( ) indicates the potential characteristics of the seal after an injection.
A = Recommended B = Suitable for most purposes C = Use with care D = Not advisable - = Not tested

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Instrument compatibility

We believe that our instrument/vial compatibility suggestions are accurate at the time of going to press. However, changes in manufacturers' specifications may result in different instrument/vial compatibilities to those indicated. All dimensions and capacities are approximate.

Solubilities

We believe that the information included in our seal solubility table is accurate at the time of going to press. However, changes in manufacturers' specifications may alter the degree of solubility indicated. Where we indicate any degree of solubility we would always recommend that a test be carried out before commencing any analysis.

Intellectual property

Patents:

The Sci-Vi System, Crimpmate and WebSeal are patented in the UK and USA and are the subject of pending patent applications in other countries.

Uni-Vi™ vials - 1.1-CTVG, 1.1-STVG, 09-CTV, 08-CRV(A), 06-CTV(A), 05-CTV(A) - together with support sleeves WS-2, WS-5, WS-6 and WS-7 are larger capacity members of the Sci-Vi System patent.

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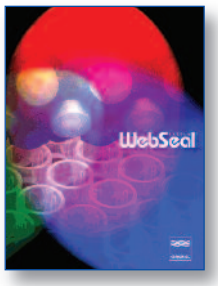

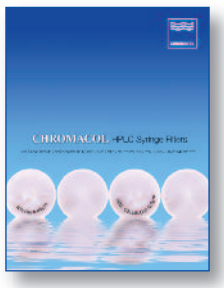

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