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QUICK PICK: AGILENT TECHNOLOGIES GC

Autosampler Syringes

All needles are 42mm long with a cone point. For a complete listing of all Agilent GC autosampler syringes, please see page 12.

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Pack Size	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
HP 7673, 7683 & 6850 ALS								
Fixed Tapered Needle								
5µL	23-26s (0.63/0.47)	5F-HP-0.63/0.47C	001821	1	–	–	–	–
10µL	23-26s (0.63/0.47)	10F-HP-0.63/0.47C	002821	1	–	–	–	–
10µL Gas Tight	23-26s (0.63/0.47)	10F-HP-GT-0.63/0.47C	002826	1	–	–	031808	2
Fixed Straight Needle								
5µL	26 (0.47)	5F-HP-0.47C	001800	1	–	–	–	–
5µL ^(M)	23 (0.63)	5F-HP-0.63C	001810	1	–	–	–	–
10µL	26 (0.47)	10F-HP-0.47C	002800	1	–	–	–	–
10µL ^(M)	23 (0.63)	10F-HP-0.63C	002810	1	–	–	–	–
10µL ^(M) Gas Tight	23 (0.63)	10F-HP-GT-0.63C	002812	1	–	–	031808	2
Removable Tapered Needle								
0.5µL	23-26s (0.63/0.47)	0.5BR-HP-0.63/0.47C	000415	1	033730	1**	–	–
5µL	23-26s (0.63/0.47)	5R-HP-0.63/0.47C	001825	1	036730	2	–	–
10µL	23-26s (0.63/0.47)	10R-HP-0.63/0.47C	002825	1	037730	2	–	–
10µL Gas Tight	23-26s (0.63/0.47)	10R-HP-GT-0.63/0.47C	002829	1	037730	2	031809	2
Removable Straight Needle								
0.5µL	26 (0.47)	0.5BR-HP-0.47C	000400	1	033708	1**	–	–
0.5µL ^(M)	23 (0.63)	0.5BR-HP-0.63C	000410	1	033715	1**	–	–
1µL	23 (0.63)	1BR-HP-0.63C	000610	1	034715	1**	–	–
5µL	26 (0.47)	5R-HP-0.47C	001805	1	036710	2	–	–
5µL ^(M)	23 (0.63)	5R-HP-0.63C	001815	1	036720	2	–	–
10µL	26 (0.47)	10R-HP-0.47C	002805	1	037715	2	–	–
10µL ^(M)	23 (0.63)	10R-HP-0.63C	002815	1	037717	2	–	–
10µL Gas Tight	26 (0.47)	10R-HP-GT-0.47C	002817	1	037715	2	031809	2
10µL ^(M) Gas Tight	23 (0.63)	10R-HP-GT-0.63C	002818	1	037717	2	031809	2
Wide Bore Needle	23 (0.63)							
(For use with 10µL syringe only)	/0.15 ID	N10-HP-0.63(0.15)C	–		037725	2	–	–

^(M)Suitable for use with the Merlin Microseal™ Injector.

** Denotes Spare Needle and Plunger kit.

Septa

Instrument	Diameter (mm)	Septum Type [§]	Pack Size	Part No.
6890, 5890, 5880, 4890 & 6850	11	CS	50	041826
	11	TCS	50	041846
	11	Auto-Sep™	25	041872
	11	Auto-Sep T™	25	041882
	11	Auto-Sep T™	100	041883
5700, 5800 & 5900	9.5	CS	50	0418240
	9.5	TCS	50	0418440
	9.5	Auto-Sep™	25	041871
	9.5	Auto-Sep T™	25	041880
	12.5	CS	50	041828
5750, 710, 720, 810 & 7610	12.5	TCS	50	041848
	12.5	Auto-Sep T™	25	041884
	5	CS	50	041820

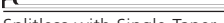
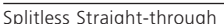
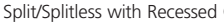
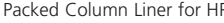
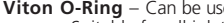
[§] For more information on septum type, refer to page 32.

Electron Multipliers

Instrument	Analyzer Type	Technique	Part No.
Agilent Technologies			
5970 (All)	Quadrupole	GC-MS	14511
5971, 5972, GCD	Quadrupole	GC-MS	14516
5973/5975 (Initial Installation – includes mount)	Quadrupole	GC-MS	14617
5973/5975 (Replacement multiplier)	Quadrupole	GC-MS	14616

Inlet Liners

Refer to page 32 for specialist Agilent Liners.
Description

	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
Deactivated Liners for HP5890, HP6890, HP6850 & HP4890					
Split/Splitless FocusLiner™	4.0	6.3	78.5	5	092002*
 TOP				25	092219
Split / Splitless Tapered FocusLiner	4.0	6.3	78.5	5	092003*
 TOP				25	092011
Split / Splitless FAST FocusLiner	2.3	6.3	78.5	5	092005
 TOP				25	092008
Split / Splitless Tapered FAST FocusLiner	2.3	6.3	78.5	5	092111
 TOP				25	092115
Split, Straight-through Liner	4.0	6.3	78.5	5	092007*
				25	092222
Split with Quartz Wool	4.0	6.3	78.5	5	092001
				25	092220
Split / Splitless with Single Taper	4.0	6.3	78.5	5	092017*
 TOP				25	092229
Splitless with Single Taper & Quartz Wool	4.0	6.3	78.5	5	092019*
 TOP				25	092218
Split / Splitless with Double Taper	4.0	6.3	78.5	5	092018
				25	092230
Direct Straight-through Liner	1.2	6.3	78.5	5	092016
				25	092224
Splitless Straight-through Liner, Quartz	2.0	6.1	78.5	5	092004
					
Splitless with Recessed Gooseneck	2.0	6.3	78.5	5	092013
					
Split/Splitless with Recessed Gooseneck & Quartz Wool	4.0	6.3	78.5	5	092010
				25	092223
Packed Column Liner for HP5880, 5890 & 6890 GCs	1.8	3.0	92	5	092234
				25	092235
Viton O-Ring – Can be used at temperatures up to 300°C Suitable for all inlet liners above except 092234 & 092235.					
				10	0726532
Graphite Sealing Ring – Can be used at temperatures up to 450°C Suitable for all inlet liners above except					
092004, 092234 & 092235.		6.35		10	0726005
Suitable for use with 092004.		6.1		10	0726006

* = Also available in *FluoroLiner*: a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092002F.

Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
15% Graphite / 85% Vespel® Ferrules				
For Injectors & Detectors at atmospheric pressure e.g. FID				
	0.1-0.25mm	0.4mm	10	073109
	0.32mm	0.5mm	10	073111
	0.53mm	0.8mm	10	073113
	for 1/8" OD Packed Columns	1/8"	10	072669
	for 1/4" OD Packed Columns	1/4"	10	072667
For GC-MS Interface Connection				
	0.1-0.25mm	0.4mm	10	072663
	0.32mm	0.5mm	10	072654
	0.53mm	0.8mm	10	072655
100% Graphite Ferrules				
Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)				
	0.1-0.32mm	0.5mm	10	072635
	0.45-0.53mm	0.8mm	10	072636
	for 1/8" OD Packed Columns	1/8"	10	072602
	for 1/4" OD Packed Columns	1/4"	10	072601
SilTite™ Metal Ferrules				
For GC-MS Interface Connection (Starter Kit)				
	0.1-0.25mm	0.4mm	10*	073200
	0.32mm	0.5mm	10*	073201
	0.53mm	0.8mm	10*	073202
For Split / Splitless Injectors (Starter Kit)				
	0.1-0.25mm	0.4mm	10#	073270
	0.32mm	0.5mm	10#	073271
	0.45-0.53mm	0.8mm	10#	073272
	1/32"	0.81mm	10#	073273
Replacement SilTite™ Metal Ferrules				
For All Connections				
	0.1-0.25mm	0.4mm	10	073220
	0.32mm	0.5mm	10	073221
	0.53mm	0.8mm	10	073222
	1/32"	0.81mm	10	073219
Replacement SilTite™ Nuts				
For GC-MS Interface Connection				
		–	5	073224
For Split / Splitless Injector				
		–	5	073226
Replacement SilTite™ Base Seals				
For Split / Splitless Injector				
		–	2	073400
		–	10	073401

*Includes 10 ferrules, 2 SilTite™ nuts. # Includes 10 ferrules, 2 SilTite nuts and 2 SilTite Inlet Base Seals.

QUICK PICK

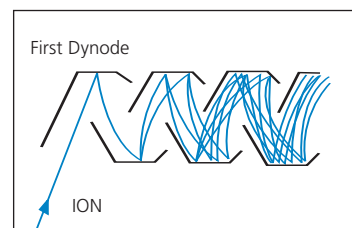
For SGE's full range of products, visit www.sge.com

Why choose SGE deactivated Liners?

- SGE is a leader in deactivation technology
- Liners deactivated using high temperature (420°C) gas phase deactivation
- Supplied in blister packs to prevent contamination
- Reduced active sites means no unwanted reactions in your sample
- All SGE liners are deactivated

Features of ETP Electron Multipliers

- Proprietary specialized surface material resulting in very high secondary electron emission
- Air stable
- 2 year shelf life guarantee
- Discrete dynode design results in extended operating life



Ion-optics of an ETP discrete-dynode electron multiplier showing the electron gain at each successive dynode. This electron cascading process results in gains up to 10⁸ being achieved with ~21 dynodes.

QUICK PICK: PERKIN ELMER GC

Autosampler Syringes

All needles are 70mm long with a cone point style.

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Pack Size	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
Autosystem Fixed Needle								
5µL	26 (0.47)	5F-PE-0.47C	001953	1	-	-	-	-
5µL	23 (0.63)	5F-PE-0.63C	001954	1	-	-	-	-
5µL Gas Tight	26 (0.47)	5F-PE-GT-0.47C	001955	1	-	-	031807	2
5µL Gas Tight	23 (0.63)	5F-PE-GT-0.63C	001957	1	-	-	031807	2
50µL	23 (0.63)	50F-PE-0.63C	004670	1	-	-	-	-
Removable Needle								
0.5µL	26 (0.47)	0.5BR-PE-0.47C	000475	1	033750	1**	-	-
0.5µL	23 (0.63)	0.5BR-PE-0.63C	000478	1	033765	1**	-	-

**Denotes spare Needle and Plunger kit.

Septa

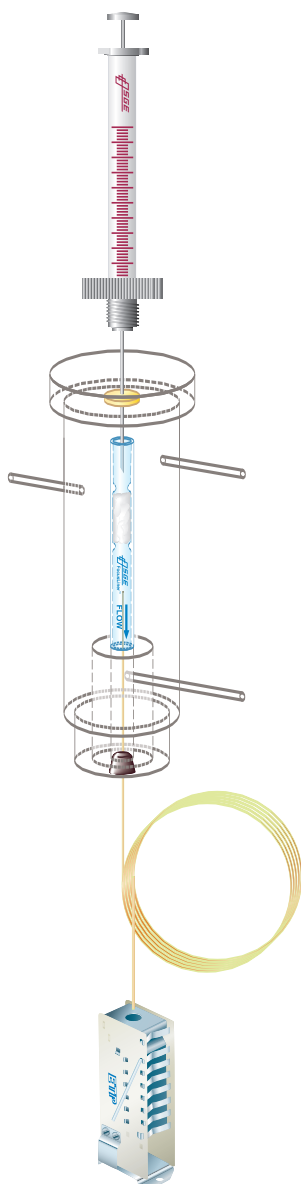
Instrument	Diameter (mm)	Septum Type [§]	Pack Size	Part No.
Sigma, 900, 990, 3920, 8300, 8400, 8500, AutoSystem & Clarus 500				
	11	CS	50	041826
	11	TCS	50	041846
	11	Auto-Sep™	25	041872
	11	Auto-Sep T™	25	041882
	11	Auto-Sep T™	100	041883

[§] For more information on septum type, refer to page 32.

Ferrules

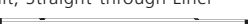
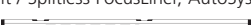
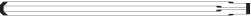
Material	Column ID	Size of Nut	Ferrule ID	Pack Size	Part No.
15% Graphite / 85% Vespel® Ferrules					
For Injectors & Detectors at atmospheric pressure e.g. FID					
	0.1-0.25mm	1/16"	0.4mm	10	072663
	0.1-0.25mm	1/8"	0.4mm	10	0726703
	0.32mm	1/16"	0.5mm	10	072654
	0.32mm	1/8"	0.5mm	10	0726702
	0.45-0.53mm	1/16"	0.8mm	10	072655
	0.45-0.53mm	1/8"	0.8mm	10	072671
	1/8" OD Packed Columns	1/8"	1/8"	10	072669
	1/4" OD Packed Columns	1/4"	1/4"	10	072667
100% Graphite Ferrules					
For Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)					
	0.1-0.32mm	1/16"	0.5mm	10	072627
	0.1-0.32mm	1/8"	0.5mm	10	072624
	0.45-0.53mm	1/16"	0.8mm	10	072626
	0.45-0.53mm	1/8"	0.8mm	10	0726280
	1/8" OD Packed Columns	1/8"	1/8"	10	072622
	1/4" OD Packed Columns	1/4"	1/4"	10	072621
SilTite™ Metal Ferrules					
For GC-MS Interface Connection (Starter Kit)					
	0.1-0.25mm	—	0.4mm	10*	073200
	0.32mm	—	0.5mm	10*	073201
	0.53mm	—	0.8mm	10*	073202
Replacement SilTite™ Ferrules					
For GC-MS Interface Connection					
	0.1-0.25mm	—	0.4mm	10	073220
	0.32mm	—	0.5mm	10	073221
	0.53mm	—	0.8mm	10	073222
	1/32"	—	0.81mm	10	073219
Replacement SilTite™ Nuts					
		—	—	5	073224

*Includes 10 ferrules, 2 SilTite™ nuts.



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of products, visit
www.sge.com

Inlet Liners

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
AutoSystem™ & Clarus 500					
Split / Splitless FocusLiner™ 	4.0	6.2	92	5	092092*
 TOP				25	09209225
Split / Splitless Tapered FocusLiner 	4.0	6.2	92	5	092095*
 TOP				25	09209525
Split, Straight-through Liner 	4.0	6.2	92	5	092100*
 TOP					
Splitless, Straight-through Liner 	2.0	6.2	92	5	092103
 TOP					
AutoSystem XL, Split/Splitless (PSS Injector) 	2.0	4.0	86.2	5	092098
Split / Splitless FocusLiner, AutoSystem XL (PSS Injector) 	2.0	4.0	86.2	5	092101*
Sintered Glass, Large Volume Injection (LVI) (PSS Injector) 	0.78/2.4	4.0	86.2	5	092244
Packed Column Liner 	3.0	6.0	112	5	092236
8000 & Sigma Series					
Split / Splitless 	3.0	5.0	100	5	092091
Splitless with Single Taper 	2.0	5.0	100	5	092094
PTV Liner					
Recessed Gooseneck 	1.0	2.0	88	5	092097

Viton O-Ring – Can be used at temperatures up to 300°C

For 6.2mm OD Inlet Liners.

10 0726536

* = Also available in *FluoroLiner*: a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092092F.

Why choose SGE deactivated Liners?

- SGE is a leader in deactivation technology
- Liners deactivated using high temperature (420°C) gas phase deactivation
- Supplied in bliseter packs to prevent contamination
- Reduced active sites means no unwanted reactions in your sample
- All SGE liners are deactivated

Why Choose FocusLiner™?

- Recognized as the industry standard for liners
- Improves injection reproducibility 10-fold
- SGE is a leader in deactivation technology
- Fixed quartz wool wipes needle tip during injection
- Quartz wool secured by innovative tapered design

Electron Multipliers

MS Description	Analyzer Type	Technique	Part No.
Ion Trap GC-MS	Ion Trap	GC-MS	14138
Q-Mass	Quadrupole	GC-MS	14532



QUICK PICK: SHIMADZU GC

Autosampler Syringes

All needles are 42mm long with a cone point style.

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Pack Size	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
AOC14, AOC17 and AOC20								
Fixed Needle								
5µL	26 (0.47)	5F-S-0.47C	001987	1	–	–	–	–
5µL	23 (0.63)	5F-S-0.63C	001988	1	–	–	–	–
250µL Gas Tight	23 (0.63)	250F-S-GT-0.63C	006682	1	–	–	031828	1
Removable Needle								
0.5µL	26 (0.47)	0.5BR-S-0.47C	000440	1	033738	1**	–	–
0.5µL	23 (0.63)	0.5BR-S-0.63C	000445	1	033745	1**	–	–
10µL	26 (0.47)	10R-S-0.47C	002897	1	037745	2	–	–
10µL	23 (0.63)	10R-S-0.63C	002898	1	037747	2	–	–
10µL Gas Tight	23 (0.63)	10R-S-GT-0.63C	002902	1	037747	2	031798	2

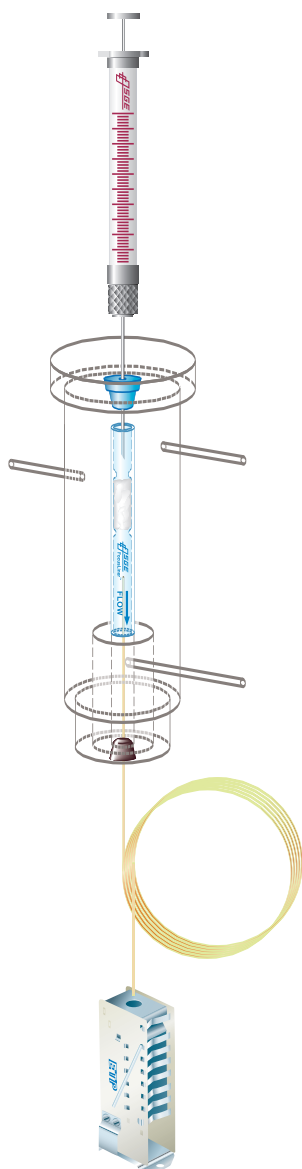
**Denotes spare Needle and Plunger kit.

Septa

Instrument	Septum Type [§]	Pack Size	Part No.
9A, 14, 15A, 16, 17A, 2010 & 2014	Enduro Blue	50	041890

Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
15%Graphite / 85%Vespel® Ferrules				
For QP5000-I GC-MS System				
	0.1-0.25mm	0.4mm	10	0726563
	0.32mm	0.5mm	10	0726564
For QP5000-II & QP5050 GC-MS System				
	0.1-0.25mm	0.4mm	10	0726561
	0.32mm	0.5mm	10	0726562
For 2010 & 2014 Injector & GC-MS Connection				
	0.1-0.25mm	0.4mm	10	072663
	0.32mm	0.5mm	10	072654
	0.53mm	0.8mm	10	072655
100%Graphite Ferrules				
For Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)				
	0.1-0.32mm	0.5mm	10	0726080
	0.45-0.53mm	0.8mm	10	0726082
	5mm OD Packed Columns	5.0mm	10	0726001
For 2010 & 2014 Injector				
	0.1-0.32mm	0.5mm	10	072635
	0.45-0.53mm	0.8mm	10	072636
SilTite™ Metal Ferrules				
For GC-MS Interface Connection - Direct Interface (Starter Kit)				
	0.1-0.25mm	0.4mm	10*	073204
	0.32mm	0.5mm	10*	073205
	0.53mm	0.8mm	10*	073206
	1/32"	0.81mm	10*	073207
For GC-MS Interface Connection – Jet Separator & 2010 (Starter Kit)				
	0.1-0.25mm	0.4mm	10*	073200
	0.32mm	0.5mm	10*	073201
	0.53mm	0.8mm	10*	073202
	1/32"	0.81mm	10	073210
For All Injectors, Jet Separator (Starter Kit), except 2010				
	0.1-0.25mm	0.4mm	10*	073350
	0.32mm	0.5mm	10*	073351
	0.53mm	0.8mm	10*	073352
Replacement SilTite™ Ferrules				
For GC-MS Interface Connection				
	0.1-0.25mm	0.4mm	10	073220
	0.32mm	0.5mm	10	073221
	0.53mm	0.8mm	10	073222
	1/32"	0.81mm	10	073219
For GC-MS Interface Connection – Direct Interface (For Part No. 073204, 073205, 073206 & 073207)				
	0.1-0.25mm	0.4mm	10	073227
	0.32mm	0.5mm	10	073228
	0.53mm	0.8mm	10	073229
	1/32"	0.81mm	10	073235



Ferrules continued

Material	Column ID	Ferrule ID	Pack Size	Part No.
Replacement SilTite™ Nuts				
For 2010 GC-MS System		–	5	073224
For 2010 GC-MS System with QP5000 series MS		–	5	073224
For 2010 GC Injectors and atmospheric detectors		–	5	073224
QP5000 Jet Separator MS Interface		–	5	073224
QP5000 Direct MS Interface		–	5	073233

*Includes 10 ferrules, 2 SilTite™ nuts.

Inlet Liners

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
17A (SP-17 Injector) & 2014					
Split / Splitless FocusLiner™	3.4	5.0	95	5	092062*
Split / Splitless Tapered FocusLiner	3.4	5.0	95	5	092068*
Split / Splitless with Recessed Gooseneck & Quartz Wool	3.4	5.0	95	5	092061
Split, Straight-through Liner	3.4	5.0	95	5	092064
Split / Splitless with Middle Gooseneck	3.4	5.0	95	5	092085*
Splitless, Straight-through Liner	2.6	5.0	95	5	0920861
Direct, for 0.53mm ID Column	2.6	5.0	95	5	092087
SPME Liner	0.75	5.0	95	5	092089
14, 15A & 16 (SPL-14 Injector)					
Split / Splitless FocusLiner	3.4	5.0	99	5	092065
Split / Splitless Tapered Focusliner	3.4	5.0	99	5	092066
Split / Splitless with 2.0mm Middle Gooseneck	3.4	5.0	99	5	092082
Split / Splitless with Single Taper	3.4	5.0	99	5	0920831
Splitless, Direct, Wide Bore for 9A & 16A GCs	3.4	5.0	139	5	092084
2010 (SPL-2010 Injector)					
Split / Splitless Tapered FocusLiner	3.4	5.0	95	5	092058*
Split / Splitless Focusliner	3.4	5.0	95	5	092059*
Split, Straight-through Liner	3.4	5.0	95	5	092064
Splitless, Straight-through Liner	2.6	5.0	95	5	0920861
Split / Splitless with Single Taper	3.4	5.0	95	5	092071*†
Split / Splitless with Middle Gooseneck	3.4	5.0	95	5	092077*
Graphite Sealing Ring – Can be used at temperatures up to 450°C					
For 14, 15A & 16 (SPL-14 Injector)				10	0726001
For 17A (SPL-17 Injector)				10	0726007
Viton O-Ring – Can be used at temperatures up to 300°C					
For 2010 & 2014 (SPL-2010 Injector & SPL-2014 Injector)				10	0726533

* = Also available in *FluoroLiner*: a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092062F.

† = Can be used in 2014 injector.

Electron Multipliers

MS Description	Analyzer Type	Technique	Part No.
QP8000 (Replacement multiplier)	Quadrupole	GC-MS	14625
QP5000	Quadrupole	GC-MS	14533
QP5050A (Initial Installation – includes mount)	Quadrupole	GC-MS	14627
QP5050A (Replacement multiplier)	Quadrupole	GC-MS	14625

Why choose SGE deactivated Liners?

- SGE is a leader in deactivation technology
- Liners deactivated using high temperature (420°C) gas phase deactivation
- Supplied in bliseter packs to prevent contamination
- Reduced active sites means no unwanted reactions in your sample
- All SGE liners are deactivated

SGE syringes have consistently been the choice of GC and LC equipment manufacturers for many years. They choose our products because their reputation depends on the performance of our components.

Our knowledge and expertise in liquid handling technologies has enabled us to design syringes for a vast variety of applications. These products have two things in common; outstanding performance and superior quality.

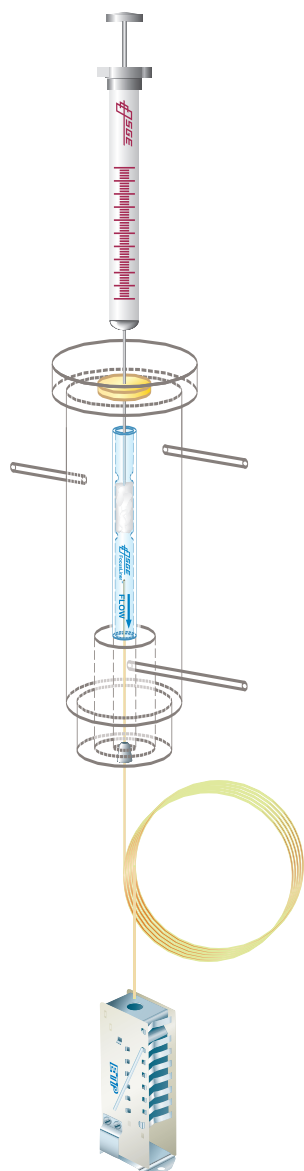


QUICK PICK: THERMO ELECTRON GC

Thermo Electron / CE Instruments / Fisons Autosampler Syringes

All needles have a cone point style.

Autosampler				Needle Specifications					
				Volume	Length (mm)	Gauge	Syringe Code	Syringe Part No.	Needle Pack Part No. size
TriPlus AS3000 AS2000 AS200/800				Fixed Needle					
	•		•	10µL	80	23 (0.63)	10F-C/T-8/0.63C	002989	- -
	•		•	10µL	80	26 (0.47)	10F-C/T-8/0.47C	002992	- -
	•	•	•	10µL	50	25 (0.50)	10F-C/T-5/0.50C	019050	- -
	•	•	•	10µL	50	23 (0.63)	10F-C/T-5/0.63C	002981	- -
	•	•	•	10µL	50	26 (0.47)	10F-C/T-5/0.47C	002980	- -
	•	•	•	Removable Needle					
	•	•	•	10µL	50	26 (0.47)	10R-C/T-5/0.47C	002982	037785 2
	•	•	•	10µL	50	23 (0.63)	10R-C/T-5/0.63C	002984	037787 2
	•	•	•	10µL	80	26 (0.47)	10R-C/T-8/0.47C	002993	031535 3



Septa

Instrument	Diameter (mm)	Septum Type [§]	Pack Size	Part No.
8000 Series, TRACE™ GC				
	17	TCS	50	0418491
	17	Auto-Sep T™	25	041886

[§] For more information on septum type, refer to page 32.

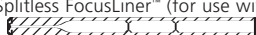
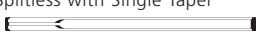
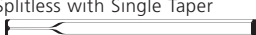
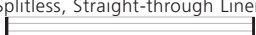
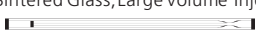
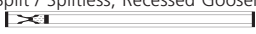
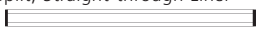
Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
15%Graphite / 85%Vespel® Ferrules				
For All Injectors & Detectors (Not for 8000 Series & Trace GC)				
	0.1-0.25mm	0.4mm	10	0726549
	0.32mm	0.5mm	10	0726557
	0.53mm	0.8mm	10	0726548
	1/8" OD Packed Columns	1/8"	10	072669
	1/4" OD Packed Columns	1/4"	10	072667
For All Trace Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)				
	0.1-0.25mm	0.4mm	10 [#]	072696
	0.32mm	0.5mm	10 [#]	072697
	0.53mm	0.8mm	10 [#]	072698
Brass Nut for Trace GC Injectors & Non-MS Detectors			2	1034085
100%Graphite Ferrules				
For Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)				
	0.1-0.32mm	0.5mm	10	072619
	0.45-0.53mm	0.8mm	10	072614
	1/8" OD Packed Columns	1/8"	10	072622
	1/4" OD Packed Columns	1/4"	10	072621
SilTite™ Metal Ferrules				
For GC-MS Interface Connections (Starter Kit)				
	0.1-0.25mm	0.4mm	10*	073450
	0.32mm	0.5mm	10*	073451
	0.53mm	0.8mm	10*	073452
	1/32"	0.81mm	10	073453
Replacement SilTite™ Metal Ferrules				
For All GC-MS Interface Connections				
	0.1-0.25mm	0.4mm	10	073330
	0.32mm	0.5mm	10	073331
	0.53mm	0.8mm	10	073332
	1/32"	0.81mm	10	073333
Replacement SilTite™ Nuts			5	073230

[#] To be used in combination with brass nut (Part No. 1034085)

* Includes 10 ferrules, 2 SilTite™ nuts.

Inlet Liners

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
ThermoQuest 8000 & TRACE™					
Splitless FocusLiner™ (for use with 70mm Needle)  TOP	5.0	8.0	105	5	092045*
Split FocusLiner (for use with 50mm Needle)  TOP	5.0	8.0	105	5	092048*
Splitless FocusLiner™ (for use with 50mm Needle)  TOP	5.0	8.0	105	5	092049*
Splitless with Single Taper  TOP	3.0	8.0	105	5	092141*
Splitless with Single Taper  TOP	5.0	8.0	105	5	092144*
SPME Liner 	0.8	8.0	105	5	092148
Splitless, Straight-through Liner 	3.0	8.0	105	5	092147
Split, Straight-through Liner 	5.0	8.0	105	5	092150
FocusLiner 	5.0	8.0	105	5 25	092046 09204625
Sintered Glass, Large Volume Injection (LVI) Liner  TOP	0.78/1.8	2.75	120	5	092155
PTV Liner					
Trace 2000 PTV Liner  TOP	1.75	2.75	120	5	092142
Mega Series 4000, 5000 & 6000					
Split / Splitless, Recessed Gooseneck with Quartz Wool 	3.0	5.0	79.5	5	092041
Split, Straight-through Liner 	3.0	5.0	79.5	5	092044
Splitless, Straight-through Liner 	2.0	5.0	79.5	5	092047
Graphite Sealing Ring					
For 8000 & TRACE GCs	8.0			10	0726004
Thermo Finnigan 9001 and GCQ					
Thermo Finnigan 9001 & GCQ GC's accept all Agilent Technologies 6.3mm OD Liners. Refer to page 3.					
* = Also available in <i>FluoroLiner</i> : a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092062F.					

Why choose SGE deactivated Liners?

- SGE is a leader in deactivation technology
- Liners deactivated using high temperature (420°C) gas phase deactivation
- Supplied in bliseter packs to prevent contamination
- Reduced active sites means no unwanted reactions in your sample
- All SGE liners are deactivated

Why Choose SilTite™ Ferrules?

- The perfect solution for GC-MS interfaces
- Never needs re-tightening, even after temperature cycling
- No contamination from Vespel® or graphite materials - 100% metal
- Ferrule remains permanently fixed to the column but does not adhere to the SilTite™ nut
- Ideal for high pressure applications
- Also available for injector interfaces
- >500°C maximum temperature
- SilTite™ ferrules must be used with SilTite™ nuts
- Patent Pending

Electron Multipliers

Mass Spectrometer	Analyzer Type	Technique	Part No.
Bench-top ion trap pre-GCQ	Ion Trap	GC-MS	14138

QUICK PICK: VARIAN GC

Autosampler Syringes

Volume	Length	Needle Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Pack Size	Needle Part No.	Pack Size	Plunger Part No.	Pack Size
Varian 8035, 8100 and 8200										
Fixed Needle										
10µL <i>Gas Tight</i>	53	25 (0.5)	S/Hole	10F-VA8X-II	002923	1	-	-	031218	1
Removable Needle										
1µL*	51	26 (0.47)	Cone	1BR-VA8X	000655	1	034720	1**	-	-
10µL <i>Gas Tight</i>	53	25 (0.5)	S/Hole	10R-VA8X-II	002924	1	037777	1	031218	1
Needle Alternatives for P/N 002924										
	50	25 (0.5)	Bevel	N10-VA8035-II	-	1	037776	2	-	-
	105	-	OC	N10-VA8035-0.17-II	-	1	037778	2	-	-
	53	23 (0.63)	S/Hole	N10-VA8X00H-0.63-II	-	1	037779	2	-	-
	53	25 (0.5)	S/Hole	N10-VA800H-II(0.2)	-	1	037780	1	-	-
100µL	53	25 (0.5)	S/Hole	100R-VA8X	005921	1	038745	1	031824	1
Varian CP-8400/8410, CP-9010/9050										
Fixed Needle										
10µL	50	26 (0.47)	Bevel	10F-VA8400-5/0.47	002950	1	-	-	-	-
10µL	50	23 (0.63)	Cone	10F-C/T-5/0.63C	002981	1	-	-	-	-
Removable Needle										
10µL	50	26 (0.47)	Cone	10R-C/T-5/0.47C	002982	1	037785	2	-	-

*Not suitable for 8200 autosampler. **Denotes Plunger and Needle Kit.

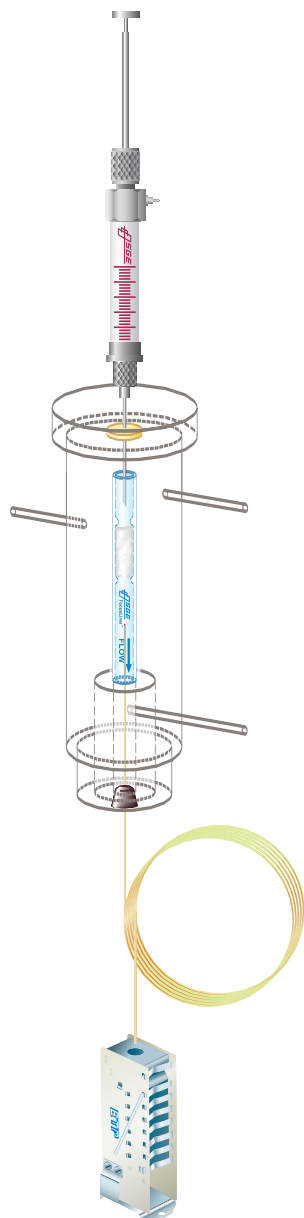
Septa

Instrument	Diameter (mm)	Septum Type [§]	Pack Size	Part No.
1177 Injector	9	CS	50	041824
	9	TCS	50	041844
	9	TCS Pre-drilled	50	041854
	9	Auto-Sep T™	25	041879
1040, 1041, 1060 & 1061 Injectors				
	9.5	CS	50	0418240
	9.5	TCS	50	0418440
	9.5	Auto-Sep™	25	041871
	9.5	Auto-Sep T™	100	041881
1075, 1077, 1078, 1079 Injectors & 1093, 1094 SPI Injectors				
	11	CS	50	041826
	11	TCS	50	041846
	11	Auto-Sep™	25	041872
	11	Auto-Sep T™	25	041882
	11	Auto-Sep T™	100	041883

[§]For more information on septum type, refer to page 32.

Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
15% Graphite / 85% Vespel® Ferrules				
For GC-MS & Detectors at atmospheric pressure e.g. FID				
	0.1-0.25mm	0.4mm	10	072663
	0.32mm	0.5mm	10	072654
	0.53mm	0.8mm	10	072655
Packed Columns				
	1/8" OD Packed Columns	1/8"	10	072669
	1/4" OD Packed Columns	1/4"	10	072667
100% Graphite Ferrules – For Injectors & Detectors at atmospheric pressure e.g. FID				
	0.1-0.32mm	0.5mm	10	072627
	0.45-0.53mm	0.8mm	10	072626
	1/8" OD Packed Columns	1/8"	10	072622
	1/4" OD Packed Columns	1/4"	10	072621
SiTite™ Metal Ferrules – For GC-MS Interface Connection (Starter Kit)				
	0.1-0.25mm	0.4mm	10*	073300
	0.32mm	0.5mm	10*	073301
	0.53mm	0.8mm	10*	073302
	1/32"	0.81mm	10*	073303

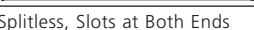
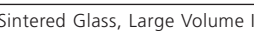
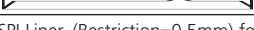


Ferrules continued

Material	Column ID	Ferrule ID	Pack Size	Part No.
Nuts for Varian Injector			2	1034060
Replacement SilTite™ Ferrules For GC-MS Interface Connection				
	0.1-0.25mm	0.4mm	10	073220
	0.32mm	0.5mm	10	073221
	0.53mm	0.8mm	10	073222
	1/32"	0.81mm	10	073219
Replacement SilTite™ Nuts			5	073231

*Includes 10 ferrules, 2 SilTite™ nuts.

Inlet Liners

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
1177 Injector					
1177 injector accepts all Agilent Technologies 6.3mm OD liners, refer to page 3.					
1075 & 1077 Injectors					
Split FocusLiner™  TOP	4.0	6.3	72	5	092022
Splitless Focusliner with Top-end Restriction  TOP	4.0	6.3	74	5	092026
Split, Tapered FocusLiner  TOP	4.0	6.3	72	5	092025
Split Focusliner with Top-end Restriction  TOP	4.0	6.3	72	5	092028
Split, FAST FocusLiner  TOP	2.3	6.3	72	5	092113
Split with Quartz Wool  TOP	4.0	6.3	72	5	092021
Splitless, Slots at Both Ends  TOP	2.0	6.3	74	5	092024
				25	092228
1078 & 1079 Injectors					
Split / Splitless FocusLiner  TOP	3.4	5.0	54	5	092037*
Split / Splitless Tapered FocusLiner  TOP	3.4	5.0	54	5	092036*
Straight-through Liner 	0.5	5.0	54	5	092031
Split / Splitless with Single Taper  TOP	3.4	5.0	54	5	092038*
Splitless with Single Taper  TOP	2.0	5.0	54	5	092039*
Sintered Glass, Large Volume Injection (LVI) Liner  TOP	1.8/3.4	5.0	54	5	092245
SPME liner 	0.75	5.0	54	5	092117
1093 & 1094 Injectors					
SPI Liner, (Restriction=0.25mm) 	0.5	4.6	54	5	092027
SPI Liner, (Restriction=0.25mm) 	0.8	4.6	54	5	092030
SPI Liner, (Restriction=0.5mm) for 0.53mm ID On-column 0.8 	4.6	54	5	092034	
Viton O-Ring					
For 1177 injector, can be used at temperatures up to 300°C				10	0726532
Graphite Sealing Rings					
For 1075 & 1077 Injectors				10	072601
For 1078 & 1079 Injectors				10	0726217
Packed Column Injectors					
Packed Column Liner for Varian Flash Injectors	3	6.3	72	1	092232
				5	092233

* = Also available in FluoroLiner: a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092062F.

Electron Multipliers

MS Description	Part No.
Saturn (Pre-2000)	14138
Saturn 2000, 2100 & 2200	14147

QUICK PICK

For SGE's full range of products, visit www.sge.com

CS Septa

- Teflon® coated silicone
- maximum injector temperature 200°C



TCS Septa

- three layers
- Teflon® coated silicone
- maximum injector temperature 280°C
- pre-drilled septa are especially useful for SPME applications



Auto-Sep™ Septa

- silicone
- maximum injector temperature 320°C



Auto-Sep T™ Septa

- Teflon® coated silicone
- maximum injector temperature 350°C



Enduro™ Septa

- high temperature silicone
- maximum injector temperature 350°C
- for Shimadzu 9A, 14, 15A, 16, 17A, 2010, & 2014. Part No. 041890

SYRINGES: GC AUTOSAMPLER

Agilent Technologies

All needles are 42mm long with a cone point. All syringes, needles and plungers are supplied in packs of one unless otherwise noted. For syringe multipacks see page 23.

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
Agilent 7670 Removable Needle							
1µL	23 (0.63)	1BR-F5	0000585	034705	1**	–	–
Agilent 7673, 7683 & 68560 ALS Fixed Tapered Needle							
5µL	23-26s (0.63/0.47)	5F-HP-0.63/0.47C	001821	–	–	–	–
10µL	23-26s (0.63/0.47)	10F-HP-0.63/0.47C	002821	–	–	–	–
10µL Gas Tight	23-26s (0.63/0.47)	10F-HP-GT-0.63/0.47C	002826	–	–	–	–
25µL Gas Tight	23-26s (0.63/0.47)	25F-HP-GT-0.63/0.47C	003668	–	–	031818	1
50µL Gas Tight	23-26s (0.63/0.47)	50F-HP-GT-0.63/0.47C	004668	–	–	031822	1
100µL Gas Tight	23-26s (0.63/0.47)	100F-HP-GT-0.63/0.47C	005668	–	–	031823	1
Fixed Straight Needle							
5µL	26 (0.47)	5F-HP-0.47C	001800				
5µL ^(M)	23 (0.63)	5F-HP-0.63C	001810				
10µL	26 (0.47)	10F-HP-0.47C	002800				
10µL ^(M)	23 (0.63)	10F-HP-0.63C	002810				
10µL ^(M) Gas Tight	23 (0.63)	10F-HP-GT-0.63C	002812			031808	2
Fixed Needle – SuperFlex™ Plunger							
10µL	26 (0.47)	10FX-HP-0.47	002830	–	–	–	–
10µL	23 (0.63)	10FX-HP-0.63	002835	–	–	–	–
Removable Tapered Needle							
0.5µL	23-26s (0.63/0.47)	0.5BR-HP-0.63/0.47C	000415	033730	1**	–	–
5µL	23-26s (0.63/0.47)	5R-HP-0.63/0.47C	001825	036730	2	–	–
10µL	23-26s (0.63/0.47)	10R-HP-0.63/0.47C	002825	037730	2	–	–
10µL ^(M) Gas Tight	23-26s (0.63/0.47)	10R-HP-GT-0.63/0.47C	002829	037730	2	031809	2
Removable Straight Needle							
0.5µL	26 (0.47)	0.5BR-HP-0.47C	000400	033708	1**	–	–
0.5µL ^(M)	23 (0.63)	0.5BR-HP-0.63C	000410	033715	1**	–	–
1µL	23 (0.63)	1BR-HP-0.63C	000610	033715	1**	–	–
5µL	26 (0.47)	5R-HP-0.47C	001805	036710	2	–	–
5µL ^(M)	23 (0.63)	5R-HP-0.63C	001815	036720	2	–	–
10µL	26 (0.47)	10R-HP-0.47C	002805	037715	2	–	–
10µL ^(M)	23 (0.63)	10R-HP-0.63C	002815	037717	2	–	–
10µL Gas Tight	26 (0.47)	10R-HP-GT-0.47C	002817	037715	2	031809	2
10µL ^(M) Gas Tight	23 (0.63)	10R-HP-GT-0.63C	002818	037717	2	031809	2
25µL ^(M)	23 (0.63)	25R-HP-0.63C	003665	038717	2	–	–
50µL ^(M)	23 (0.63)	50R-HP-0.63C	004665	038717	2	–	–
100µL ^(M)	23 (0.63)	100R-HP-0.63C	005665	038717	2	–	–
250µL ^(M)	23 (0.63)	250R-HP-0.63C	006665	038717	2	–	–
Wide Bore Needle							
(for use with 10µL syringe only)	23 (0.63)/0.15 ID	N10-HP-0.63(0.15)C	–	037725	2	–	–
Removable Needle – SuperFlex™ plunger							
10µL	26 (0.47)	10RX-HP-0.47C	002844	037715	2	–	–
10µL	23 (0.63)	10RX-HP-0.63C	002845	037717	2	–	–

**Denotes Spare Needle and Plunger kit ^(M)Suitable for use with the Merlin Microseal™ Injector.

Certificate of Calibration - Available for most SGE syringes

SGE offers a factory calibration service, at an additional cost, for syringes nominated by you at the time of purchase. These syringes are supplied with a Certificate of Calibration, providing volume conformance and traceability. Syringes are also identified by an engraved number on the syringe flange. To order a Certificate of Calibration, add “CAL” to the end of the part number, e.g. 0000585**CAL**.

SYRINGES: GC AUTOSAMPLER

Perkin Elmer

All syringes, needles and plungers are supplied in packs of one unless otherwise noted.

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
AS100, AS2000 and AS8300							
Removable Needle – 78mm long with a dome point style							
3µL	26 (0.47)	3R-PS-0.47	000700	035980	2	–	–
Autosystem							
Fixed Needle – 70mm long with a cone point style							
5µL	26 (0.47)	5F-PE-0.47C	001953	–	–	–	–
5µL	23 (0.63)	5F-PE-0.63C	001954	–	–	–	–
5µL <i>Gas Tight</i>	26 (0.47)	5F-PE-GT-0.47C	001955	–	–	031807	2
5µL <i>Gas Tight</i>	23 (0.63)	5F-PE-GT-0.63C	001957	–	–	031807	2
50µL	23 (0.63)	50F-PE-0.63C	004670	–	–	–	–
Removable Needle							
0.5µL	26 (0.47)	0.5BR-PE-0.47C	000475	033750	1**	–	–
0.5µL	23 (0.63)	0.5BR-PE-0.63C	000478	033765	1**	–	–

** Denotes spare Needle and Plunger kit.

Shimadzu

All syringes, needles and plungers are supplied in packs of one unless otherwise noted.

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
AOC9							
Removable Needle – 50mm long with a cone point style							
0.5µL	26 (0.47)	0.5BR-S(9)-5/0.47C	000435	033732	1**	–	–
10µL	26 (0.47)	10R-S(9)-5/0.47C	002885	037736	2	–	–
AOC14, AOC17and AOC20							
Fixed Needle – 42mm long with a cone point style							
5µL	26 (0.47)	5F-S-0.47C	001987	–	–	–	–
5µL	23 (0.63)	5F-S-0.63C	001988	–	–	–	–
250µL <i>Gas Tight</i>	23 (0.63)	250F-S-GT-0.63C	006682	–	–	031828	1
Removable Needle – 42mm long with a cone point style							
0.5µL	26 (0.47)	0.5BR-S-0.47C	000440	033738	1**	–	–
0.5µL	23 (0.63)	0.5BR-S-0.63C	000445	033745	1**	–	–
10µL	26 (0.47)	10R-S-0.47C	002897	037745	2	–	–
10µL	23 (0.63)	10R-S-0.63C	002898	037747	2	–	–
10µL <i>Gas Tight</i>	23 (0.63)	10R-S-GT-0.63C	002902	037747	2	031798	2

** Denotes spare Needle and Plunger kit.

Thermo Electron GC Autosampler Syringes

All syringes, needles and plungers are supplied in packs of one unless otherwise noted.

							Needle		Plunger					
	Volume	Length mm	Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Needle Part No.	Needle Pack Size	Plunger Part No.	Plunger Pack Size				
TriPlus AS3000 AS2000 AS200/800	Fixed Needle													
	•	5µL	50	26 (0.47)	Cone	5FX-5C	001105	–	–	–				
	•	10µL	80	23 (0.63)	Cone	10F-C/T-8/0.63C	002989	–	–	–				
	•	10µL	80	26 (0.47)	Cone	10F-C/T-8/0.47C	002992	–	–	–				
	•	•	•	•	10µL	50	25 (0.50)	Cone	10F-C/T-5/0.50C	019050	–	–		
	•	•	•	•	10µL <i>Gas Tight</i>	50	23 (0.63)	Cone	10F-C/T-GT-5/0.63C	002987	–	–	0318120	2
	•	•	•	•	10µL	50	23 (0.63)	Cone	10F-C/T-5/0.63C	002981	–	–	–	–
	•	•	•	•	10µL	50	26 (0.47)	Cone	10F-C/T-5/0.47C	002980	–	–	–	–
	Removable Needle													
	•	•	0.5µL	50	26 (0.47)	Cone	0.5BNR-C/T-5/0.47C	000490	033770	–	–	–		
	•	•	0.5µL	50	23 (0.63)	Cone	0.5BNR-C/T-5/0.63C	000492	033772	–	–	–		
	•	•	•	10µL	50	26 (0.47)	Cone	10R-C/T-5/0.47C	002982	037785	2	–	–	
	•	•	•	•	10µL	50	23 (0.63)	Cone	10R-C/T-5/0.63C	002984	037787	2	–	–
	•	•	•	•	10µL	80	26 (0.47)	Cone	10R-C/T-8/0.47C	002993	031535	3	–	–

SYRINGES: GC AUTOSAMPLER

Varian

All syringes, needles and plungers are supplied in packs of one unless otherwise noted.

Volume	Needle Length	Needle Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Needle Part No.	Pack Size	Plunger Part No.	Pack Size
Varian 8035, 8100 and 8200									
Removable Needle									
1µL*	51	26 (0.47)	Cone	1BR-VA8X	000655	034720	1**	–	–
10µL Gas Tight	53	25 (0.5)	S/Hole	10R-VA8X-II	002924	037777	1	031218	1
Fixed Needle									
10µL Gas Tight	53	25 (0.5)	S/Hole	10F-VA8X-II	002923	–	–	031218	1
Needle Alternatives for P/N 002924									
	50	25 (0.5)	Bevel	N10-VA8035-II	–	037776	2	–	–
	105	–	OC	N10-VA8035-0.17-II	–	037778	2	–	–
	53	23 (0.63)	S/Hole	N10-VA8X00H-0.63-II	–	037779	2	–	–
	53	25 (0.5)	S/Hole	N10-VA800H-II(0.2)	–	037780	1	–	–
100µL	53	25 (0.5)	S/Hole	100R-VA8X	005921	038745	1	031824	1
Varian CP-8400/8410, CP-9010/9050									
Fixed Needle									
10µL	50	26 (0.47)	Bevel	10F-VA8400-5/0.47	002950	–	–	–	–
10µL	50	23 (0.63)	Cone	10F-C/T-5/0.63C	002981	–	–	–	–
Removable Needle									
10µL	50	26 (0.47)	Cone	10R-C/T-5/0.47C	002982	037785	2	–	–

*Not suitable for 8200 autosampler. **Denotes Plunger and Needle Kit.

CTC/Leap

All needles are 50mm long. All syringes, needles and plungers are supplied in packs of one unless otherwise noted. For multipacks see page 23.

Volume	Needle Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Needle Part No.	Pack Size	Plunger Part No.	Pack Size
Fixed Needle								
5µL	26 (0.47)	Cone	5F-C/T-5/0.47C	001982	–	–	–	–
5µL	23 (0.63)	Cone	5F-C/T-5/0.63C	001981	–	–	–	–
10µL	26 (0.47)	Cone	10F-C/T-5/0.47C	002980	–	–	–	–
10µL	23 (0.63)	Cone	10F-C/T-5/0.63C	002981	–	–	–	–
10µL	26 (0.47)	Bevel	10F-C/T-5/0.47BV	002705	–	–	–	1
10µL Gas Tight	23 (0.63)	Cone	10F-C/T-GT-5/0.63C	002987	–	–	0318120	2
25µL	26 (0.47)	Cone	25F-C/T-5/0.47C	003980	–	–	–	–
25µL Gas Tight	26 (0.47)	Cone	25F-CTC-GT-5/0.47C	003700	–	–	0318922	1
25µL Gas Tight	23 (0.63)	Cone	25F-C/T-GT-5/0.63C	003987	–	–	031817	1
100µL Gas Tight	26 (0.47)	Cone	100F-C/T-GT-5/0.47C	005700	–	–	0318924	1
100µL Gas Tight	23 (0.63)	Cone	100F-C/T-GT-5/0.63C	005335	–	–	0318261	1
250µL Gas Tight	26 (0.47)	Cone	250F-CTC-GT-5/0.47C	006700	–	–	0318926	1
500µL Gas Tight	26 (0.47)	Cone	500F-CTC-GT-5/0.47C	007700	–	–	0318928	1
Removable Needle								
0.5µL	26 (0.47)	Cone	0.5BNR-C/T-5/0.47C	000490	033770	1**	–	–
0.5µL	23 (0.63)	Cone	0.5BNR-C/T-5/0.63C	000492	033772	1**	–	–
10µL	26 (0.47)	Cone	10R-C/T-5/0.47C	002982	037785	2	–	–
10µL	23 (0.63)	Cone	10R-C/T-5/0.63C	002984	037787	2	–	–
10µL Gas Tight	26 (0.47)	Cone	10R-C/T-GT-5/0.47C	002985	037785	2	0318922	2
25µL Gas Tight	26 (0.47)	S/Hole	25R-C/T-GT-5/0.47H	003988	038749	2	031816	1
100µL Gas Tight	26 (0.47)	Cone	100R-C/T-GT-5/0.47C	005333	038732	2	031826	1

**Denotes spare Needle and Plunger kit.

SYRINGES: MICRO-VOLUME

0.5µL – 5µL

All syringes are supplied in packs of one. All replacement plunger-in-needle kits are supplied in packs of one.

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Replacement Needle Part No.
Plunger-in-needle - 6.5mm OD Barrel						
0.5µL	50	23 (0.63)	Cone	0.5BNR-5	000300	033010**
0.5µL	50	23 (0.63)	Bevel	0.5BNR-5BV	000301	033011**
0.5µL	50	26 (0.47)	Cone	0.5BNR-5/0.47	000303	033012**
Plunger-in-needle - 8mm OD Barrel						
0.5µL	70	23 (0.63)	Cone	0.5BR-7	000310	033057**
0.5µL	70	23 (0.63)	Bevel	0.5BR-7BV	000311	033060**
1µL	50	23 (0.63)	Cone	1BR-5	000500	034055**
1µL	50	23 (0.63)	Bevel	1BR-5BV	000501	034056**
1µL	70	23 (0.63)	Cone	1BR-7	000505	034057**
1µL	70	23 (0.63)	Bevel	1BR-7BV	000506	034060**
1µL	115	23 (0.63)	Cone	1BR-11.5	000510	034059**
1µL	70	26 (0.47)	Cone	1BR-7/0.47	000570	034610**
5µL	50	23 (0.63)	Cone	5BR-5	000800	035055**
5µL	50	23 (0.63)	Bevel	5BR-5BV	000801	035056**
5µL	70	23 (0.63)	Cone	5BR-7	000802	035057**
5µL	70	23 (0.63)	Bevel	5BR-7BV	000803	035058**
5µL	115	23 (0.63)	Cone	5BR-11.5	000804	035059**
5µL	70	23 (0.63)	Nozzle	5BR-7N	000805	035060**
Plunger-in-needle - 6.5mm OD Barrel with Repeating Adaptor						
0.5µL	50	23 (0.63)	Cone	0.5BNR-5-RA6	000350	033010**
0.5µL	50	26 (0.47)	Cone	0.5BNR-5/0.47-RA6	000353	033012**
Plunger-in-needle - 8mm OD Barrel with Repeating Adaptor						
0.5µL	70	23 (0.63)	Cone	0.5BR-7-RAB	000355	033057**
1µL	50	23 (0.63)	Cone	1BR-5-RAB	000550	034055**
1µL	70	23 (0.63)	Cone	1BR-7-RAB	000553	034057**
5µL	50	23 (0.63)	Cone	5BR-5-RAB	000850	035055**
5µL	70	23 (0.63)	Cone	5BR-7-RAB	000852	035057**

** Replacement Plunger and Needle Kit.

5µL – 10µL

All syringes are supplied in packs of one.

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Replacement Needle Part No.
Fixed Needle - Plunger Protection Syringes						
5µL	50	26 (0.47)	Bevel	5F	001000	-
5µL	70	26 (0.47)	Bevel	5F-7	001002	-
5µL ^(M)	42	23 (0.63)	Cone	5F-4.2/0.63C	001839	-
10µL	50	26 (0.47)	Bevel	10F	002000*	-
10µL	70	26 (0.47)	Bevel	10F-7	002003	-
10µL	50	26 (0.47)	Cone	10F-5C	002005	-
10µL	115	26 (0.47)	Bevel	10F-11.5	002007	-
10µL ^(M)	42	23 (0.63)	Cone	10F-4.4/0.63C	002839	-
Fixed Needle - SuperfleX™ Flexible Plunger						
5µL	50	26 (0.47)	Bevel	5FX	001100	-
5µL	50	26 (0.47)	Cone	5FX-5C	001105	-
10µL	50	26 (0.47)	Bevel	10FX	002100*	-
10µL	70	26 (0.47)	Bevel	10FX-7	002101	-
10µL	50	26 (0.47)	Cone	10FX-5C	002105*	-
10µL ^(M)	50	23 (0.63)	Cone	10FX-5/0.63C	002108*	-
Fixed Needle - Guided Plunger						
5µL	50	26 (0.47)	Bevel	5F-GP	001400	-
10µL	50	26 (0.47)	Bevel	10F-GP	002400	-
Fixed Needle - 6.5mm OD Barrel with Repeating Adaptor						
10µL	50	26 (0.47)	Bevel	10F-RA6	002040	-

* See page 23 for multipacks listing. ^(M)Suitable for use with the Merlin Microseal™ Injector.

SYRINGES: MICRO-VOLUME

5µL – 10µL continued

All needles have a bevel point style. All syringes are supplied in packs of one. All replacement needles are supplied in packs of 5.

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Replacement Needle Part No.
Removable Needle - Plunger Protection					
5µL	50	26 (0.47)	5R	001050	036110
10µL	50	26 (0.47)	10R	002050 *	037110
10µL	70	26 (0.47)	10R-7	002055	037130
Removable Needle - SuperfleX™ Flexible Plunger					
5µL	50	26 (0.47)	5RX	001150 *	036110
10µL	50	26 (0.47)	10RX	002150	037110
Removable Needle - Guided Plunger					
5µL	50	26 (0.47)	5R-GP	001450	036110
5µL	70	26 (0.47)	5R-GP-7	001455	036130
10µL	50	26 (0.47)	10R-GP	002450	037110
10µL	70	26 (0.47)	10R-GP-7	002453	037130
Removable Needle - Short (Half Scale) Guided Plunger					
5µL	50	26 (0.47)	5R-GPS	001495	036110
Removable Needle - 6.5mm OD Barrel with Repeating Adaptor					
5µL	50	26 (0.47)	5R-RA6	001090	036110
10µL	50	26 (0.47)	10R-RA6	002090	037110
Removable Needle - Guided Plunger & Repeating Adaptor					
5µL	50	26 (0.47)	5R-GP-RA8	001490	036110
10µL	50	26 (0.47)	10R-GP-RA8	002490	037110
10µL	70	26 (0.47)	10R-GP-7-RA8	002493	037130

* See page 23 for multipacks listing.

25µL – 500µL

All needles have a bevel point style. All syringes are supplied in packs of one. All replacement needles are supplied in packs of 5.

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Replacement Needle Part No.
Fixed Needle - Standard Plunger					
25µL	50	25 (0.50)	25F	003000	-
50µL	50	25 (0.50)	50F	004000	-
100µL	50	25 (0.50)	100F	005000	-
250µL	50	25 (0.50)	250F	006000	-
500µL	50	25 (0.50)	500F	007000	-
Removable Needle - Standard Plunger					
25µL	50	25 (0.50)	25R	003050	038110
50µL	50	25 (0.50)	50R	004050	038110
100µL	50	25 (0.50)	100R	005050	038110
250µL	50	25 (0.50)	250R	006050	038110
500µL	50	25 (0.50)	500R	007050	038110
Removable Needle - Repeating Adaptor					
25µL	50	25 (0.50)	25R-RA8	003090	038110
50µL	50	25 (0.50)	50R-RA8	004090	038110
100µL	50	25 (0.50)	100R-RA8	005090	038110

SYRINGES: GAS TIGHT

10µL – 500µL

All needles have a bevel point style and have replaceable PTFE-tipped plungers. All replacement needles are supplied in packs of five.

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Replacement Needle Part No.	Replacement Plunger Part No.	Replacement Plunger Pack Size
Fixed Needle							
10µL	50	26 (0.47)	10F-GT	002200*	-	031810	2
10µL	70	26 (0.47)	10F-GT-7	002208	-	031810	2
25µL	50	25 (0.50)	25F-GT	003200	-	031815	1
50µL	50	25 (0.50)	50F-GT	004200	-	031820	1
100µL	50	25 (0.50)	100F-GT	005200	-	031825	1
250µL	50	25 (0.50)	250F-GT	006200	-	031830	1
500µL	50	25 (0.50)	500F-GT	007200	-	031835	1
Fixed Luer Tip							
50µL	-	-	50F-LT-GT	004229	-	031820	1
100µL	-	-	100F-LT-GT	005229	-	031825	1
250µL	-	-	250F-LT-GT	006229	-	031830	1
500µL	-	-	500F-LT-GT	007229	-	031835	1
Fixed Luer Lock							
50µL	-	-	50F-LL-GT	004230	-	031820	1
100µL	-	-	100F-LL-GT	005230	-	031825	1
250µL	-	-	250F-LL-GT	006230	-	031830	1
500µL	-	-	500F-LL-GT	007230	-	031835	1
Fixed Luer Lock with Plunger Stop							
50µL	-	-	50F-LLX-GT	004232	-	0318221	1
100µL	-	-	100F-LLX-GT	005232	-	0318271	1
250µL	-	-	250F-LLX-GT	006232	-	031833	1
500µL	-	-	500F-LLX-GT	007232	-	0318381	1
Removable Needle							
10µL	50	26 (0.47)	10R-GT	002250*	037110	031811	2
25µL	50	25 (0.50)	25R-GT	003250	038110	031815	1
50µL	50	25 (0.50)	50R-GT	004250	038110	031820	1
100µL	50	25 (0.50)	100R-GT	005250	038110	031825	1
250µL	50	25 (0.50)	250R-GT	006250	038110	031830	1
500µL	50	25 (0.50)	500R-GT	007250	038110	031835	1
Removable Needle - Guided Plunger Syringe							
10µL	50	26 (0.47)	10R-GP-GT	002455	037110	031805	1
Removable Needle - On-column Syringe with Square Cut Stainless Steel Tip							
10µL	75	(0.23)	10R-GT-OC-CE	002500	037675	031811	2

* See page 23 for multipacks listing.

1mL – 100mL

All needles have a bevel point style and have replaceable PTFE tipped plungers. All replacement needles are supplied in packs of five.

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Replacement Needle Part No.	Replacement Plunger Part No.	Replacement Plunger Pack Size
Fixed Needle							
1mL	50	22 (0.72)	1MDF-GT	008102	LL	0318441	1
2.5mL	50	22 (0.72)	2.5MDF-GT	008502	LL	0318542	1
Fixed Luer Tip							
1mL	-	-	1MDF-LT-GT	008020	LL	031842	1
2.5mL	-	-	2.5MDF-LT-GT	008420	LL	031852	1
Fixed Luer Lock							
1mL	-	-	1MDF-LL-GT	008025	LL	031842	1
2.5mL	-	-	2.5MDF-LL-GT	008425	LL	031852	1
5mL	-	-	5MDF-LL-GT	008762	LL	0318562	1
10mL	-	-	10MDF-LL-GT	008962	LL	031864	1
25mL	-	-	25MDF-LL-GT	009463	LL	031874	1
Removable Needle							
1mL	50	23 (0.63)	1MDR-GT	008100	039110	031842	1
2.5mL	50	23 (0.63)	2.5MDR-GT	008500	039110	031852	1
5mL	50	23 (0.63)	5MDR-GT	008700	031516	031856	1
10mL	50	23 (0.63)	10MDR-GT	008900	031516	031862	1
Removable Luer Lock							
5mL	-	-	5MDR-LL-GT	008760	LL	031856	1
10mL	-	-	10MDR-LL-GT	008960	LL	031862	1
25mL	-	-	25MDR-LL-GT	009462	LL	031864	1
50mL	-	-	50MR-LL-GT	009660	LL	0312170	1
100mL	-	-	100MR-LL-GT	009760	LL	0312176	1

LL= for replacement Luer Lock needles, please refer to page 25.

SYRINGES: LC AUTOSAMPLER

Agilent Technologies (HP) LC Autosampler Syringes

Volume	Termination Type	Syringe Code	Syringe Part No.	Plunger Part No.
HP 1090				
25µL <i>Gas Tight</i>	1/4-32 UNEF screw thread	25D-HP-1090	003670	0318181
250µL <i>Gas Tight</i>	1/4-32 UNEF screw thread	250D-HP-1090	006670	031829

CTC LC Autosampler Syringes

All needles are 51mm long, 0.72mm OD and have an LC point style.

Volume	Syringe Code	Syringe Part No.	Needle Part No.	Needle Pack Size	Plunger Part No.	Plunger Pack Size
Fixed Needle						
10µL	10F-CTC-LC	002700	–	–	0318920	1
10µL <i>Gas Tight</i>	10F-C/T-GT-LC	002991	–	–	0318120	2
25µL	25F-C/T-LC	003984	–	–	–	–
25µL <i>Gas Tight</i>	25F-CTC-GT-LC	003715	–	–	0318922	1
50µL <i>Gas Tight</i>	50F-C/T-GT-LC	004810	–	–	031821	1
100µL <i>Gas Tight</i>	100F-C/T-GT-LC	005331	–	–	0318924	1
100µL <i>Gas Tight</i>	100F-C/T-GT-LC(0.41)	005720	–	–	0318924	1
250µL <i>Gas Tight</i>	250F-CTC-GT-LC(0.41)	006720	–	–	0318926	1
500µL <i>Gas Tight</i>	500F-CTC-GT-LC(0.41)	007720	–	–	0318928	1
Removable Needle						
25µL <i>Gas Tight</i>	25R-C/T-GT-LC	003985	032252	5	0318922	1
100µL <i>Gas Tight</i>	100R-C/T-GT-LC	005330	038250	5	0318924	1
250µL <i>Gas Tight</i>	250R-C/T-GT-LC	006330	038250	5	0318926	1

Hitachi LC Autosampler Syringes

Volume	Termination Type	Syringe Code	Syringe Part No.	Plunger Part No.
L7200/7250, AS1000/2000/4000				
500µL <i>Gas Tight</i>	M10 - 1.0 screw thread	500C-HITACHI	007660	031837

Perkin Elmer LC Autosampler Syringes

Volume	Termination Type	Syringe Code	Syringe Part No.	Plunger Part No.
Series 200				
50µL <i>Gas Tight</i>	1/4-28 UNF screw thread	50D-CX	004995	–
100µL <i>Gas Tight</i>	1/4-28 UNF screw thread	100D-CX-GT	005990	–
250µL <i>Gas Tight</i>	1/4-28 UNF screw thread	250D-CX-GT	006995	0318341
500µL <i>Gas Tight</i>	1/4-28 UNF screw thread	500D-CX-GT	007995	0318381
1mL <i>Gas Tight</i>	1/4-28 UNF screw thread	1MD-C-GT	008185	0318441
2.5mL <i>Gas Tight</i>	1/4-28 UNF screw thread	2.5MD-C-GT	008687	0318541

Spark Holland Promis LC Autosampler Syringes

Volume	Termination Type	Syringe Code	Syringe Part No.	Plunger Part No.
250µL <i>Gas Tight</i>	Luer Lock	250D-SPARK-GT	006683	0318348
1mL <i>Gas Tight</i>	Luer Lock	1MD-SPARK-GT	008183	0318448

SYRINGES: LC AUTOSAMPLER

ThermoQuest - CE Instruments LC Autosampler Syringes

Volume	Termination Type	Syringe Code	Syringe Part No.	Plunger Part No.	Pack Size
SP8780/8875/8880					
500µL <i>Gas Tight</i>	1/4-28 UNF screw thread	500C-THERMOSPEC	007680	031838	1
2.5mL <i>Gas Tight</i>	1/4-28 UNF screw thread	2.5MC-THERMOSPEC	008660	031853	1
AS100/300 & AS1000/3000/3500					
250µL <i>Gas Tight</i>	1/4-28 UNF screw thread	250C-THERMOSPEC	006660	031833	1
500µL <i>Gas Tight</i>	1/4-28 UNF screw thread	500C-THERMOSPEC	007680	031838	1
1mL <i>Gas Tight</i>	1/4-28 UNF screw thread	1MC-THERMOSPEC	008180	031844	1
2.5mL <i>Gas Tight</i>	1/4-28 UNF screw thread	2.5MC-THERMOSPEC	008660	031853	1
5mL <i>Gas Tight</i>	1/4-28 UNF screw thread	5MC-THERMOSPEC	008780	031856	1

Waters / WISP / Alliance LC Autosampler Syringes

Volume	Termination Type	Syringe Code	Syringe Part No.	Plunger Part No.	Pack Size
WISP					
25µL	1/4-28 UNF screw thread	25D-WISP	003990	031819	1
250µL	1/4-28 UNF screw thread	250D-WISP	006690	031834	1
WISP Dipper Needle		N-121/1.59(0.5)SH		038265	1

SYRINGES: LC MANUAL

Beckman/Altex, Rheodyne, SSI, Valco Valves

All needles are 51mm long with an LC point style. All replacement needles are supplied in packs of five.

Volume	Needle Gauge (OD inch)	Syringe Code	Syringe Part No.	Replacement Needle Part No.	Replacement Plunger Part No.	Replacement Plunger Pack Size
Fixed Needle						
5µL	22 (0.028")	5F-LC	001301	-	-	-
10µL	22 (0.028")	10F-LC	002301*	-	-	-
10µL <i>Gas Tight</i>	22 (0.028")	10F-LC-GT	002335	-	031810	2
25µL	22 (0.028")	25F-LC	003300	-	-	-
50µL	22 (0.028")	50F-LC	004300	-	-	-
100µL	22 (0.028")	100F-LC	005300	-	-	-
250µL	22 (0.028")	250F-LC	006300	-	-	-
500µL	22 (0.028")	500F-LC	007300	-	-	-
Fixed Needle - Superflex™ Plunger						
10µL	22 (0.028")	10FX-LC	002300*	-	-	-
Removable Needle						
5µL	22 (0.028")	5R-LC	001310	036250	-	-
10µL	22 (0.028")	10R-LC	002310	037250	-	-
10µL <i>Gas Tight</i>	22 (0.028")	10R-GT-LC	002313	037250	031811	2
25µL	22 (0.028")	25R-LC	003310	038250	-	-
25µL <i>Gas Tight</i>	22 (0.028")	25R-GT-LC	003312	038250	031815	1
50µL	22 (0.028")	50R-LC	004310	038250	-	-
50µL <i>Gas Tight</i>	22 (0.028")	50R-GT-LC	004312	038250	031820	1
100µL	22 (0.028")	100R-LC	005310	038250	-	-
100µL <i>Gas Tight</i>	22 (0.028")	100R-GT-LC	005312	038250	031825	1
250µL	22 (0.028")	250R-LC	006310	038250	-	-
250µL <i>Gas Tight</i>	22 (0.028")	250R-GT-LC	006312	038250	031830	1
500µL	22 (0.028")	500R-LC	007310	038250	-	-
500µL <i>Gas Tight</i>	22 (0.028")	500R-GT-LC	007312	038250	031835	1
1mL <i>Gas Tight</i>	22 (0.028")	1MDR-LC-GT	008105	039250	031842	1
2.5mL <i>Gas Tight</i>	22 (0.028")	2.5MDR-LC-GT	008505	039250	031852	1
Removable Needle - Superflex™ Plunger						
10µL	22 (0.028")	10RX-LC	002350	037250	-	-
Removable Needle - with Repeating Adaptor						
10µL	22 (0.028")	10R-LC-RA6	002345	037250	-	-
25µL	22 (0.028")	25R-LC-RA8	003320	038250	-	-
50µL	22 (0.028")	50R-LC-RA8	004320	038250	-	-
100µL	22 (0.028")	100R-LC-RA8	005320	038250	-	-
250µL	22 (0.028")	250R-LC-RA8	006320	038250	-	-
500µL	22 (0.028")	500R-LC-RA8	007320	038250	-	-

* See page 23 for multipacks listing.

Waters U6K Valves

All needles are 50mm long with an LC point style. All replacement needles are supplied in packs of five.

Volume	Needle Gauge (OD inch)	Syringe Code	Syringe Part No.	Replacement Needle Part No.	Replacement Plunger Part No.	Replacement Plunger Pack Size
Removable Needle - with Repeating Adaptor						
25µL	25 (0.50)	25R-WLC-RA8	003375	038260	-	-
50µL	25 (0.50)	50R-WLC-RA8	004375	038260	-	-
100µL	25 (0.50)	100R-WLC-RA8	005375	038260	-	-
250µL	25 (0.50)	250R-WLC-RA8	006375	038260	-	-
500µL	25 (0.50)	500R-WLC-RA8	007375	038260	-	-

LC Pump Priming Syringes

All replacement needles are supplied in packs of five.

Volume	Needle Gauge (OD inch)	Syringe Code	Syringe Part No.	Replacement Needle Part No.	Replacement Plunger Part No.	Replacement Plunger Pack Size
Fixed Luer Lock						
1mL <i>Gas Tight</i>	-	1MDF-LL-GT	008025	-	0318441	1
2.5mL <i>Gas Tight</i>	-	2.5MDF-LL-GT	008425	-	031852	1
5mL <i>Gas Tight</i>	-	5MDF-LL-GT	008762	-	0318562	1
10mL <i>Gas Tight</i>	-	10MDF-LL-GT	008962	-	031864	1
25mL <i>Gas Tight</i>	-	25MDF-LL-GT	009463	-	031874	1

SYRINGES: INSTRUMENT SYRINGES

General Instrument - Replacement for Hamilton C & CX Syringes

Volume	Description	Syringe Code	Syringe Part No.	Plunger Part No.
25µL	1/4-28 UNF termination with plunger stop	25D-CX	003995	0318191
50µL	1/4-28 UNF termination with plunger stop	50D-CX	004995	0318221
100µL	1/4-28 UNF termination with plunger stop	100D-CX	005990	0318271
250µL	1/4-28 UNF termination with plunger stop	250D-CX	006995	0318341
500µL	1/4-28 UNF termination with plunger stop	500D-CX	007995	0318381
1mL	1/4-28 UNF termination	1MD-C	008185	0318441
2.5mL	1/4-28 UNF termination	2.5MD-C	008687	0318541
5mL	1/4-28 UNF termination	5MD-C	008787	0318591
10mL	1/4-28 UNF termination	10MD-C	008987	0318631

Hamilton AccuDil™ & MicroLab® Instrument Syringes

Volume	Description	Syringe Code	Syringe Part No.	Plunger Part No.
50µL	Luer Lock Termination with plunger stop	50F-LLX-GT	004232	0318223
100µL	Luer Lock Termination with plunger stop	100F-LLX-GT	005232	0318273
250µL	Luer Lock Termination with plunger stop	250F-LLX-GT	006232	0318343
500µL	Luer Lock Termination with plunger stop	500F-LLX-GT	007232	0318383
1mL	Luer Lock Termination	1MDF-LL-GT	008025	031842
2.5mL	Luer Lock Termination	2.5MDF-LL-GT	008425	031852
5mL	Luer Lock Termination	5MDF-LL-GT	008762	0318562
10mL	Luer Lock Termination	10MDF-LL-GT	008962	031864
25mL	Luer Lock Termination	25MDF-LL-GT	009463	031874

Zymark Robotics Instrument Syringes

Volume	Description	Syringe Code	Syringe Part No.	Plunger Part No.
2.5mL	Slotted Luer Lock Termination	2.5MD-Zymark-GT	008692	0318547
5mL	Slotted Luer Lock Termination	5MD-Zymark-GT	008792	0318597
10mL	Slotted Luer Lock Termination	10MD-Zymark-GT	008992	0318637
25mL	Slotted Luer Lock Termination	25MD-Zymark-GT	009492	0318717

Cavro Instrument Syringes

Volume	Description	Syringe Code	Syringe Part No.	Plunger Part No.
1mL	Cavro XL syringe with Luer Lock termination	1MD-LL-Cav(XL)	008140	0318443
2.5mL	Cavro XL syringe with Luer Lock termination	2.5MD-LL-Cav(XL)	008685	0318545
5mL	Cavro XL syringe with Luer Lock termination	5MD-LL-Cav(XL)	008785	0318595
10mL	Cavro XL syringe with Luer Lock termination	10MD-LL-Cav(XL)	008985	0318635
25mL	Cavro XL syringe with Luer Lock termination	25MD-LL-Cav(XL)	009485	0318715

Shimadzu Total Organic Carbon Analyzer Syringes - TOC5000

Volume	Description	Syringe Code	Syringe Part No.	Plunger Part No.
250µL	1/4-28 UNF termination	250C-SHIM(TOC)	006680	031832
2.5mL	1/4-28 UNF termination	2.5MC-SHIM(TOC)	008680	031854

SYRINGES: SPECIAL SYRINGES, SYRINGE VALVES

Jumbo Syringes

Volume	Syringe Code	Syringe Part No.	Replacement Plunger O-ring Part No.
500mL	500MAR-LL-GT	009910	032527
1L	1000MAR-LL-GT	009920	032532
2L	2000MAR-LL-GT	009930	032537

On-Column Syringes

Volume	Needle Length (mm)	OD (mm)	Needle Material	Syringe Code	Syringe Part No.	Replacement Needle Part No.	Pack Size Needle
0.5µL	100	0.23	Sheathed S/Steel	0.5BR-OC-100S	000372	033610	2
	70	0.47	Stainless Steel	0.5BR-OC-7/0.47	000376	033630	2
	75	0.23	Stainless Steel	0.5BR-OC-CE-7.5	000380	033620	2
5µL	100	0.17	Fused Silica	5R-OC-100VS	001552	036610	3
	100	0.17	Sheathed Fused Silica	5R-OC-100SVS	001554	036635	3
10µL	100	0.17	Fused Silica	10R-OC-100VS	002520	037610	3

Syringes Pre-fitted with Valves

Volume	Syringe Code	Syringe Part No.	Replacement Plunger Part No.	Replacement Needle Part No.	Replacement Valve Part No.
Pre-fitted with Removable Needle and Valve					
50µL	50R-V-GT	004279	031820	038810	031905
100µL	100R-V-GT	005279	031825	038810	031905
250µL	250R-V-GT	006279	031830	038810	031905
500µL	500R-V-GT	007279	031835	038810	031905
1mL	1MR-V-GT	008110	031842	038810	031905
2.5mL	2.5MDR-V-GT	008510	031852	038810	031905
Pre-fitted with Luer Lock Valve					
1mL	1MR-VLL-GT	008160	031842	–	031907
2.5mL	2.5MDR-VLL-GT	008560	031852	–	031907
5mL	5MDR-VLLMA-GT	008770	031856	–	031910
10mL	10MDR-VLLMA-GT	008970	031862	–	031910
25mL	25MDR-VLLMA-GT	009472	031870	–	031910
50mL	50MR-VLLMA-GT	009670	0312170	–	031910
100mL	100MR-VLLMA-GT	009770	0312176	–	031910

Syringe Valves

Valve Type	Syringe Volume	Valve Code	Pack Size Needle	Valve Part No.	Needle Code	Replacement Needle Part No.
For Removable Needle Syringes						
Push-pull with needle	25µL-2.5mL	V25/2.5M-0.63C	1	031905*	NV25145M-0.63C	038810
		V25/2.5M-0.47C	1	031906#	NV2512.5M-0.47C	038820
Push-pull with Luer Lock	25µL-2.5mL	VLL25/2.5M	–	031907	–	–
Push Button with Luer Lock	5mL-2L	VLLMA	–	031910	–	–
Septum	5mL-2L	VLLMA5/2000	–	031911	–	–

For Luer Lock or Luer Tip Syringes

Push Button with Luer Lock	50µL-2L	SLLV	–	031915	–	–
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*50mm, 0.63mm OD cone tip needle #50mm, 0.47mm OD cone tip needle

Septum valve for 5mL-2L syringe.

Part No. 031911



Push button valve with Luer Lock termination. Suits 5mL-2L syringes with removable Luer Lock or removable needle.

Part No. 031910



Push-pull valve with Luer Lock termination to suit removable needle 25µL-2.5mL syringes.

Part No. 031907



Push-pull valve with replaceable cone tip needle, to suit removable needle 25µL-2.5mL syringes.

Part No. 031905

Luer Lock valve for any Luer Lock and Luer Tip syringes or other Luer devices.

Part No. 031915

SYRINGES: MULTIPACKS

GC Autosampler Syringes

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Tip Style	Single Pack Part No.	6 Pack Part No.	10 Pack Part No.	25 Pack Part No.
Agilent Technologies							
Fixed Needle							
5µL	42	26 (0.47)	Cone	001800	001804	-	-
	42	23 (0.63)	Cone	001810	001814	-	-
10µL	42	26 (0.47)	Cone	002800	002804	-	-
	42	23 (0.63)	Cone	002810	002814	-	002813
Fixed Needle - Tapered							
5µL	42	23-26 (0.63/0.47)	Cone	001821	001822	-	-
10µL	42	23-26 (0.63/0.47)	Cone	002821	002822	-	002824
Gas Tight Plunger - Tapered Needle							
10µL	42	23-26 (0.63/0.47)	Cone	002826	002827	-	-
SuperfleX™ Flexible Plunger							
Fixed Needle							
10µL	42	26 (0.47)	Cone	002830	002831	-	-
	42	23 (0.63)	Cone	002835	002838	-	-
CTC/LEAP & Thermo Finnigan							
Fixed Needle							
10µL	50	26 (0.47)	Cone	002980	002986	-	-

MicroVolume & Gas Tight Syringes

Volume	Needle Length (mm)	Needle Gauge (OD mm)	Tip Style	Single Pack Part No.	6 Pack Part No.	10 Pack Part No.	25 Pack Part No.
Standard Plunger							
Fixed Needle							
10µL	50	26 (0.47)	Bevel	002000	002030	002033	002035
Removable Needle							
10µL	50	26 (0.47)	Bevel	002050	002080	-	-
Gas Tight Plunger							
Fixed Needle							
10µL	50	26 (0.47)	Bevel	002200	002202	-	-
Removable Needle							
10µL	50	26 (0.47)	Bevel	002250	002252	-	-
SuperfleX™ Flexible Plunger							
Fixed Needle							
10µL	50	26 (0.47)	Bevel	002100	002130	-	-
	50	26 (0.47)	Cone	002105	002133	-	-
	50	23 (0.63)	Cone	002108	002135	-	-
Removable Needle							
10µL	50	26 (0.47)	Bevel	002150	002180	-	-

LC Manual Syringes

Volume	Needle Length	Needle Gauge (OD mm)	Tip Style	Single Pack Part No.	6 Pack Part No.	10 Pack Part No.	25 Pack Part No.
Standard Plunger							
Fixed Needle							
10µL	2"	22 (0.028")	LC	002301	002315	-	-
SuperfleX™ Flexible Plunger							
Fixed Needle							
10µL	2"	22 (0.028")	LC	002300	002330	-	-

SYRINGES: REPLACEMENT NEEDLES

Selection by Volume

Syringe Volume	Needle Length (mm)	Needle Gauge	OD (mm)	Tip Style	Pack Size	Needle Part No.
5µL	50	26	0.47	Cone	2	036010
	50	23	0.63	Cone	2	036011
	70	26	0.47	Cone	2	036030
	70	23	0.63	Cone	2	036031
	115	26	0.47	Cone	2	036060
	50	26	0.47	Bevel	5	036110
	70	26	0.47	Bevel	5	036130
	115	26	0.47	Bevel	5	036160
	51(2")	22	0.028"	LC	5	036250
	50	26	0.47	Sheathed/Bevel	2	036310
	50	26	0.47	Side Hole/Dome	2	036410
	50	26	0.47	Dome	2	036510
	70	26	0.47	Dome	2	036530
	50	–	0.17	On-column	2	036603
	75	–	0.17	On-column	2	036605
	100	–	0.17	On-column	2	036610
	110	–	0.17	On-column	2	036625
	100	–	0.17	On-column	2	036635
	107	–	0.19	On-column	2	036651
	75	–	0.23	On-column	2	036675
	95	–	0.27	On-column	2	036685
10µL	50	26	0.47	Cone	2	037010
	50	23	0.63	Cone	2	037011
	70	26	0.47	Cone	2	037030
	70	23	0.63	Cone	2	037031
	115	26	0.47	Cone	2	037060
	50	26	0.47	Bevel	5	037110
	50	23	0.63	Bevel	5	037111
	70	26	0.47	Bevel	5	037130
	115	26	0.47	Bevel	5	037160
	51(2")	22	0.028"	LC	5	037250
	70	22	0.028"	LC	5	037270
	70	26	0.47	Sheathed/Bevel	2	037330
	50	26	0.47	Side Hole/Dome	2	037410
	50	26	0.47	Dome	2	037510
	75	26	0.47	Dome	2	037540
	75	–	0.17	On-column	2	037605
	100	–	0.17	On-column	2	037610
	75	–	0.23	On-column	2	037675
25-500µL	50	25	0.5	Cone	2	038010
	70	25	0.5	Cone	2	038030
	115	25	0.5	Cone	2	038060
	50	25	0.5	Bevel	5	038110
	50	23	0.63	Bevel	5	038111
	70	25	0.5	Bevel	5	038130
	70	23	0.63	Bevel	5	038131
	115	25	0.5	Bevel	5	038160
	115	23	0.63	Bevel	5	038161
	51(2")	22	0.028"	LC	5	038250
	50	25	0.5	LC	5	038260
	70	22	0.028"	LC	5	038270
	50	25	0.5	Sheathed/Bevel	2	038310
	50	25	0.5	Side Hole/Dome	2	038410
	70	25	0.5	Side Hole/Dome	2	038430
	115	25	0.5	Side Hole/Dome	2	038460
	50	25	0.5	Dome	2	038510
	70	25	0.5	Dome	2	038530
	50	25	0.5	PTFE Coated	2	038910
1-2.5mL	50	23	0.63	Bevel	5	039110
	50	23	0.63	Dome	2	039116
	70	23	0.63	Bevel	5	039130
	115	23	0.63	Bevel	5	039160
	51(2")	22	0.028"	LC	5	039250
	50	25	0.5	LC	5	039260

SYRINGES: REPLACEMENT NEEDLES

Luer Lock Needles

Needle Length (mm)	Needle Gauge (OD (mm))	Tip Style	Pack Size	Needle Part No.
50	14 (2.10)	Bevel	5	039880
	16 (1.57)	Bevel	5	039862
	18 (1.27)	Bevel	5	039842
	19 (1.07)	Bevel	5	039822
	19 (1.07)	Side Hole/Dome	2	039823
	23 (0.63)	Bevel	5	039802
	23 (0.63)	Side Hole/Dome	2	039803
	25 (0.50)	LC	2	039897
51(2")	22 (0.028")	LC	2	039895
70	16 (1.57)	Bevel	5	039867
	18 (1.27)	Bevel	5	039847
	19 (1.07)	Bevel	5	039827
	23 (0.63)	Bevel	5	039807
	23 (0.63)	Side Hole/Dome	5	039808
115	14 (2.10)	Bevel	5	039891
	16 (1.57)	Bevel	5	039871
	18 (1.27)	Bevel	5	039851
	19 (1.07)	Bevel	5	039831
	23 (0.63)	Bevel	5	039811

Needle Selection



Cone Tip

- minimizes septum coring for GC autosampler use



Bevel Tip

- standard general purpose needle tip style for dispensing liquids
- ideal for GC analysis with manual injection



Tapered Tip

- narrow gauge at front end for on-column injection
- wide gauge to increase strength for autosampler use



LC Tip

- the square tip needle prevents damage to the valve's rotor seal and stator face of the injector
- suitable for the pipetting of liquids



Dome Tip

- rounded and polished tip to facilitate septum penetration



Side Hole / Dome Tip

- liquid sample is filled and dispensed through the side hole
- recommended for large volume GC injection



PTFE Coated Tip

- ideal for dispensing aqueous samples without wetting the outside of the needle



Sheathed / Bevel Tip

- same as the bevel tip, except a 0.7mm OD reinforcing sheath is silver soldered over the needle to within 10mm of the tip
- sheath provides exceptional strength to the needle

GC: Capillary Columns

Premium Performance *plus* Endurance

Experience premium chromatographic performance with SGE's *forte* range of GC capillary columns. Providing a combination of low bleed, inertness, high maximum temperatures and robust phase chemistries, these columns produce excellent results, injection after injection. To order columns with a 5" cage, add CCS to the part number (not available for 0.53mm ID, 0.32mm ID > 30m, or aluminum clad columns). See Appendix A for column selection advice.

forte BP1 – 100% Dimethyl Polysiloxane

A general purpose, low bleed, non-polar phase. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: -60°C to 340/360°C
1.5-3.0µm film: -60°C to 300/320°C
4.0-5.0µm film: -60°C to 280/300°C

ID mm	Film µm	10m	12m	15m	25m	30m	50m	60m
0.1	0.1	054022	✓	✓	–	–	–	–
0.15	0.25	✓	054028	✓	054029	✓	✓	–
0.22	0.1	✓	054040	✓	054041	✓	054042	–
	0.25	✓	054046	054049	054047	054050	054048	054051
	1	✓	054052	✓	054053	✓	054054	–
0.25	0.25	✓	✓	054043	✓	054044	✓	054045
	0.5	✓	✓	✓	✓	054820	✓	054812
	1	✓	✓	✓	✓	054056	✓	054815
0.32	0.25	✓	054058	054061	054059	054062	054060	054067
	0.5	✓	054064	✓	054065	054068	054066	054069
	1	✓	054070	✓	054071	054813	054072	054810
	1.5	✓	✓	✓	✓	054811	✓	✓
	3	✓	✓	✓	✓	054073	✓	✓
	4	✓	✓	✓	054076	054077	✓	✓
0.53	5	✓	✓	✓	054081	✓	054082	054085
	0.5	✓	✓	054870	✓	054092	✓	054871
	1	✓	054086	054089	054087	054090	054088	✓
	2.6	✓	✓	✓	✓	054819	✓	✓
	3	✓	054097	✓	054098	054808	✓	054809
	5	✓	✓	✓	054095	054806	054096	054807

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BPX1 – 100% Dimethyl Polysiloxane

A non-polar phase ideal for Simulated Distillation in the petroleum industry. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: Aluminum Clad: 0.1µm film: 30°C to 430°C
Polyimide Clad: 0.1-0.9 µm film: 30°C to 400°C
2.65µm film 30°C to 370°C

	ID mm	Film µm	5m	6m	10m
Polyimide Clad Columns	0.1	0.1		✓	054777
	0.53	0.1		✓	054803
	0.53	0.9		✓	054801
	0.53	2.65		0548025	054802
Aluminum Clad Columns	0.53	0.1	054800		054779
	0.53	0.17	054782		✓

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BP1 PONA – 100% Dimethyl Polysiloxane

A non-polar phase for PONA analysis. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: -60°C to 340/360°C

ID mm	Film µm	50m	100m
0.15	0.5	054950	–
0.25	0.5	✓	054818

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

GC: Capillary Columns

forte SolGel-1ms™ – 100% Dimethyl Polysiloxane in a Sol-Gel matrix

An inert, high temperature, non-polar phase. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0°C to 370/380°C

ID mm	Film µm	30m	60m
0.25	0.25	054795	054793
0.32	0.25	054798	054794

forte BP5 – 5% Phenyl Polysiloxane

A general purpose, low bleed, non-polar phase. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.25-1.5µm film: -60°C to 340/350°C
>1.5µm film: -60°C to 280/300°C

ID mm	Film µm	12m	15m	25m	30m	50m	60m
0.22	0.25	054167	054170	054168	054171	054169	054172
	1	✓	✓	✓	✓	054175	✓
0.25	0.25	✓	054182	✓	054183	✓	054184
	1	✓	✓	✓	054203	✓	054215
0.32	0.25	054179	054176	054180	054177	✓	054178
	0.5	✓	✓	054186	054216	054187	✓
	1	✓	✓	054192	054189	054193	054188
0.53	0.5	✓	✓	✓	0541935	✓	✓
	1	054197	054194	054198	054195	✓	✓
	1.5	✓	054199	✓	✓	✓	054204
	5	✓	✓	✓	054196	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

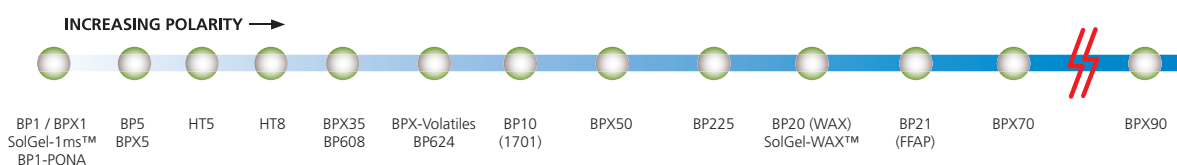
forte BPX5 – 5% Phenyl (equiv.) Polysilphenylene-siloxane

A general purpose, low bleed, non-polar phase for GC-MS and ECD. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.2µm film: -40°C to 360/370°C
1.5-3.0µm film: -40°C to 350/360°C

ID mm	Film µm	6m	10m	12m	15m	25m	30m	50m	60m
0.1	0.05	–	054739	✓	✓	–	–	–	–
	0.1	–	054099	✓	✓	–	–	–	–
0.15	0.15	–	✓	✓	✓	✓	054110	✓	✓
	0.25	–	✓	054103	✓	054104	✓	054105	–
	0.4	–	✓	054107	✓	054108	–	–	–
	1.2	–	054106	✓	✓	✓	–	–	–
0.22	0.1	–	✓	✓	✓	✓	✓	✓	–
	0.25	–	✓	054112	✓	054113	054142	054114	–
	1	–	✓	✓	✓	054116	✓	054117	–
0.25	0.1	–	✓	✓	0542170	✓	0541011	✓	✓
	0.25	–	✓	✓	054100	✓	054101	✓	054102
	0.5	–	✓	✓	✓	✓	0541025	✓	✓
	1	–	✓	✓	054121	✓	054122	✓	054123
0.32	0.25	–	✓	054118	054144	054119	054145	054120	054146
	0.5	–	✓	054124	✓	054125	0541205	054126	✓
	1	0541261	✓	054127	054152	054128	054153	054129	054154
	3	✓	✓	✓	✓	054136	✓	–	–
0.53	0.25	✓	✓	054133	✓	054134	✓	✓	✓
	0.5	✓	✓	✓	0541344	✓	0541345	✓	✓
	1	✓	✓	054130	054147	054131	054148	054132	054158
	1.5	✓	✓	✓	0541347	✓	0541348	✓	–
	3	✓	✓	054138	054159	054139	054160	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.



GC: Capillary Columns

forte HT5 – 5% Phenyl (equiv.) Polycarborane-siloxane

A unique high temperature phase. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: Polyimide Clad 0.1-0.5µm film: 10°C to 380/400°C
Aluminum Clad 0.1-0.5µm film: 10°C to 460/480°C

Polyimide Clad Columns		6m	10m	12m	15m	25m	30m
ID mm	Film µm						
0.22	0.1	–	✓	054631	✓	054632	✓
0.25	0.1	–	✓	✓	054633	✓	054634
0.32	0.1	–	✓	054641	✓	054642	✓
	0.5	–	✓	✓	054667	✓	054668
0.53	0.1	054655	✓	A	✓	✓	✓
	0.15	✓	✓	054657	✓	054658	✓
	0.5	✓	054670	✓	054671	✓	054672

Aluminum Clad Columns		5m	6m	12m	25m	50m
ID mm	Film µm					
0.22	0.1	–	–	054635	054636	–
0.32	0.1	–	–	054651	054652	054653
0.53	0.075	054673	–	–	–	–
	0.1	–	054661	–	–	–
	0.15	–	–	054662	054665	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte HT8 – 8% Phenyl (equiv.) Polycarborane-siloxane

A unique high temperature phase suited for the analysis of PolyChlorinated Biphenyl (PCB) congeners. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: -20°C to 360/370°C

ID mm	Film µm	10m	12m	25m	30m	50m	60m
0.1	0.1	054690	✓	–	–	–	–
0.22	0.25	✓	054674	054675	✓	054676	✓
0.25	0.25	✓	✓	✓	054677	✓	✓
0.32	0.25	✓	054679	054680	✓	054681	054682
0.53	0.5	✓	054684	054685	✓	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BPX35 – 35% Phenyl (equiv.) Polysilphenylene-siloxane

A low bleed moderately polar phase, well suited for pesticides and herbicides analysis. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: 10°C to 360/370°C

ID mm	Film µm	10m	15m	25m	30m	50m	60m
0.1	0.1	054699	✓	–	–	–	–
0.22	0.25	✓	054713	054711	054714	054712	✓
0.25	0.25	✓	054700	✓	054701	✓	054702
	0.5	✓	✓	✓	0547025	✓	✓
	1	✓	054703	✓	054704	✓	054705
0.32	0.25	✓	054723	054721	054724	054722	054725
	0.5	✓	054718	✓	0547158	–	–
	1	✓	054716	✓	054717	–	–
0.53	0.5	✓	054734	✓	054735	–	–
	1	✓	054736	✓	054737	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

GC: Capillary Columns

forte BPX608 – 35% Phenyl(equiv.) Polysilphenylene-siloxane

Optimized for separation of EPA 608 organochlorine pesticides. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 10°C to 360/370°C

ID mm	Film μ m	25m
0.32	0.4	054823

forte BPX-VOLATILES – Cyanopropylphenyl Polysiloxane

Columns used for EPA volatile organics analysis (EPA 624, 502.2). For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 1.0 μ m-3.0 μ m film: 0°C to 290/300°C

ID mm	Film μ m	15m	20m	25m	30m	40m	50m	60m
0.18	1.0	✓	054978	✓	✓	054979	✓	A
0.25	1.4	✓	✓	✓	054980	✓	✓	054981
0.32	1.8	✓	✓	✓	054982	✓	✓	054983
0.53	3.0	✓	✓	✓	054984	✓	✓	054985

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BP624 – Cyanopropylphenyl Polysiloxane

Optimized for analysis of EPA drinking water target components. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 1.0 μ m-3.0 μ m film: 0°C to 230 /240°C

ID mm	Film μ m	15m	20m	25m	30m	40m	50m	60m
0.22	1.2	✓	✓	054826	054827	✓	✓	✓
0.25	1.4	054839	✓	✓	054840	✓	✓	054842
0.32	1.8	✓	✓	054830	054832	✓	054831	054841
0.53	3.0	✓	✓	054834	054836	✓	054835	054838

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

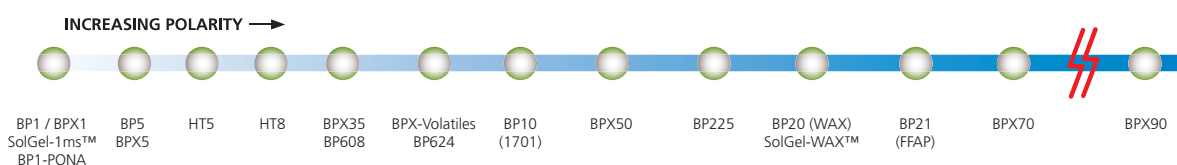
forte BP10 (1701) – 14% Cyanopropylphenyl Polysiloxane

A moderately polar phase used for environmental analyses. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: -20°C to 280/300°C

ID mm	Film μ m	12m	15m	25m	30m	50m	60m
0.22	0.25	054252	✓	054253	✓	054254	✓
0.25	0.25	✓	054255	✓	054256	✓	054257
0.25	1	✓	✓	✓	054271	–	–
0.32	0.25	✓	054258	054262	054259	✓	054260
	0.5	✓	054264	054268	054265	054269	054266
	1	✓	✓	✓	054270	–	–
0.53	1	✓	054282	054280	054283	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.



GC: Capillary Columns

forte BPX50 – 50% Phenyl (equiv.) Polysilphenylene-siloxane

A low bleed moderately polar phase ideal for a range of EPA methods and pharmaceutical applications.

For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: 40°C to 360/370°C

Polyimide Clad Columns ID mm	Film µm	10m	15m	30m	60m
0.1	0.1	054740	✓	–	–
0.15	0.15	✓	✓	054741	–
0.25	0.25	✓	054750	054751	054752
0.32	0.25	✓	054760	054761	054762
0.53	0.5	✓	054770	054771	–
	1	✓	✓	054772	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BP225 – 50% Cyanopropylphenyl Polysiloxane

A moderate to high polarity phase. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: 40°C to 230/250°C

ID mm	Film µm	25m	50m
0.22	0.25	054352	054353
0.32	0.25	054358	✓
0.53	0.5	054364	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BP20 (Wax) – Polyethylene Glycol

A polar phase suited to the analysis of alcohols, ketones and aldehydes. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: 20°C to 260/280°C
1.0µm film: 240/260°C

ID mm	Film µm	10m	12m	15m	25m	30m	50m	60m
0.1	0.1	054405	✓	✓	–	–	–	–
0.22	0.25	✓	054420	✓	054421	054424	054422	054425
0.25	0.25	✓	✓	054426	✓	054427	✓	054428
	0.5	✓	✓	✓	✓	054415	✓	054458
	1	✓	✓	✓	✓	054439	✓	–
0.32	0.25	✓	✓	054432	054430	054433	054431	054434
	0.5	✓	✓	✓	054436	054438	054437	054457
	1	✓	✓	✓	054442	054444	054443	054445
0.53	0.5	✓	✓	054961	✓	054440	✓	054963
	1	✓	054447	054450	054448	054451	✓	0544515
	2	✓	054455	✓	054456	–	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte SolGel–WAX Polyethylene Glycol in a Sol-Gel matrix

A robust, high temperature polar WAX phase. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 30°C to 300°C

ID mm	Film µm	30m	60m
0.25	0.25	054796	054791
	1	054787	–
0.32	0.25	054788	054789
	0.5	054797	054792
0.53	0.5	054786	–
	1	054785	–

GC: Capillary Columns

forte BP21 (FFAP) – Polyethylene Glycol (TPA Treated)

A polar phase suited to the analysis of free fatty acids. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film 35°C to 240/250°C

ID mm	Film µm	12m	15m	25m	30m	50m	60m
0.22	0.25	✓	✓	054462	✓	054463	✓
0.25	0.25	✓	054464	✓	054465	✓	054466
0.32	0.25	054467	054470	054468	054471	054469	054472
0.53	0.5	054473	054476	054474	054477	–	–
	1	✓	✓	✓	054478	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BPX70 – 70% Cyanopropyl (equiv.) Polysilphenylene-siloxane

Highly polar columns optimized for Fatty Acid Methyl Ester (FAME) analysis. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 0.1-1.0µm film: 50°C to 250/260°C

ID mm	Film µm	10m	12m	15m	25m	30m	50m	60m	120m
0.1	0.2	054600	✓	✓	–	–	–	–	–
0.22	0.25	✓	054601	✓	054602	054612	054603	054613	✓
0.25	0.25	✓	✓	054621	✓	054622	✓	054623	054624
0.32	0.25	–	054605	✓	054606	054616	054607	054617	✓
0.53	0.5	–	✓	054619	054610	054620	–	–	–

✓ = These and other dimensions are available on request. Please contact your local SGE office for information.

forte BPX90 – 90% Cyanopropyl (equiv.) Polysilphenylene-siloxane

A unique highly polar, thermally stable, bonded phase column which separates principally by polarity. Ideal for fast separation of fragrances, aromatics, petrochemical, pesticides, PCBs and isomers of FAMES. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 80°C to 280°C

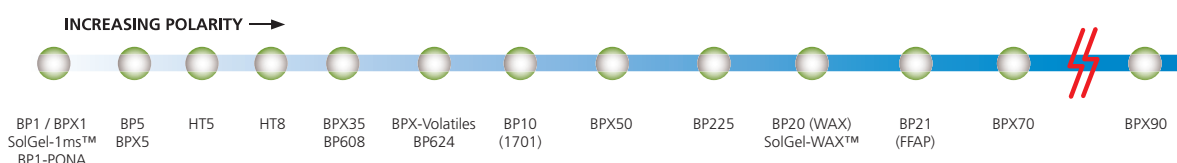
ID mm	Film µm	15m	30m	60m
0.25	0.25	054570	054580	054590
0.32	0.50	054573	054583	054593

forte CYDEX-B – Permethylated Beta Cyclodextrin (Chiral)

Suitable for chiral separations. For all columns, see Appendix A for typical applications, and cross reference information from other commercial phases.

Operating temperatures: 30°C to 220/240°C

ID mm	Film µm	25m	50m
0.22	0.25	054900	054901
0.32	0.25	054902	–



GC: Consumables: Septa, Additional Liners

Septa

For information on how to order septa by instrument make and model, please see the Quick Pick section in this catalog.

Type	Material	Durability	Resealing	Bleed	Solvent Resistance	Tear Resistance	Maximum Temp. (°C)
CS	PTFE coated silicone (one face)	Good	Good	Very good	Excellent	Good	200
TCS	PTFE-coated triple layer silicone	Excellent	Very good	Excellent	Excellent	Very good	280
TCSD	Pre-drilled TCS septa	Excellent	Excellent	Excellent	Excellent	Excellent	280
Auto-Sep™	Silicone	Excellent	Excellent	Very good	Excellent	Very good	320
Auto-Sep7™	PTFE coated silicone (one face)	Excellent	Excellent	Excellent	Excellent	Excellent	350
Enduro™ Blue	Silicone	Excellent	Excellent	Excellent	Excellent	Excellent	350

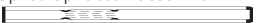
Type	Diameter (mm)	CS	Pack size	TCS	Pack size	TCSD	Pack size	Auto-Sep™	Pack size	Auto-Sep7™	Pack size
4						0418490	5				
5		041820	50	–		041850	50	–		–	
6		041821	50	041841	50	–		–		–	
7		041822	50	0418421	10	041852	50	041873	25	041878	25
				041842	50						
8		041823	50	041843	50	–		0418745	5	–	
9		041824	50	041844	50	041854	50	–		041879	25
9.5		0418240	50	0418440	50	0418540	50	041871	25	041880	25
								0418715	5	041881	100
10		041825	50	041845	50	041855	50	–		–	
11		041826	50	041846	50	041856	50	041872	25	041882	25
										041883	100
11.5		041827	50	041847	50	–		–		–	
12.5		041828	50	041848	50	–		–		041884	25
15		041829	50	–		–		–		–	
17				0418491	50	–		–		041886	25
Enduro™ Blue											
Shimadzu Plug	041890	50									

Additional Liners: Other Injectors for Agilent Technologies

For information on all other liners, please see the Quick Pick section in this catalog.

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
AC Control Injector					
AC Control Sim Dist Liner for Programmed Injector 1.6		3.0	73	10	092210
				25	092211
Gerstel CIS 4 Injector					
Sintered Glass, Large Volume Injection (LVI)	0.78/1.8	3.0	71	5	092243
					
Single Baffle	1.8	3.0	71	10	092246
					

Additional Liners: ATAS Optic Injectors

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
Split / Splitless FocusLiner™	3.0	5.0	81	5	092272
					
Straight-through Liner	3.0	5.0	81	5	092270
					
Frit & Tapered Liner	3.0	5.0	81	5	092273
					

[GC: Consumables: Additional Ferrules

For a full listing of all ferrules by instrument make and model, please see the Quick Pick section in this catalog.

1/16" Fittings (All ferrules are supplied in packs of 10)

Ferrule Style	Hole ID	100% Graphite	15% Graphite 85% Vespel®	100% Vespel
Straight	1/16"	072623	072657	072684
Sealing Ring	1/16"	0726520	072653	–
Reducing	0.2mm	–	0726632	–
	0.3mm	–	072659	–
	0.4mm	–	072663	–
	0.5mm	072627	072654	–
	0.8mm	072626	072655	–
	0.9mm	–	072658	–
	1.0mm	072625	072656	–
Reducing (short)	0.3mm	–	073107	–
	0.4mm	–	073109	–
	0.5mm	072610	073111	–
	0.8mm	072608	073113	–
	1.0mm	072607	–	–
2-Hole	1.2mm	072606	–	–
	2 x 0.3mm	–	072660	–
	2 x 0.4mm	–	072662	–
	2 x 0.5mm	–	072664	–
	0.5 & 0.3mm	–	0726640	–
	0.4 & 0.3mm	–	0726641	–
3-Hole	0.5 & 0.4mm	–	0726642	–
	3 x 0.4mm	–	072665	–
No-Hole (Blank)	–	–	072661	072681
No-Hole (Short & Blank)	–	–	073105	–

SilTite™ Metal 1/16"

Description	Pack Contents	Part No.
1/16" SilTite™ Starter Kit	10 Ferrules & 2 Nuts	073203
Replacement 1/16" SilTite™ Ferrules	10 Ferrules	073223
Replacement 1/16" SilTite™ Nuts	5 Nuts	073225

1/8" Fittings (All ferrules are supplied in packs of 10)

Ferrule Style	Hole ID	100% Graphite	15% Graphite 85% Vespel®	100% Vespel
Straight	1/8"	072622	072669	072682
Sealing Ring	1/8"	–	072652	–
Reducing	1/16"	076283	0726701	0726821
	0.4mm	–	0726703	–
	0.5mm	–	0726702	–
	0.8mm	0726270	072671	–
	1.2mm	072628	–	–
	2.4mm	–	0726700	–
	1.2mm	072609	–	–
Reducing (short)	1.2mm	072609	–	–
2-Hole	2 x 0.8mm	–	072674	–
No-Hole (Blank)	–	–	072670	–

GC: Consumables: Additional Ferrules

1/4" Fittings (All ferrules are supplied in packs of 10)

Ferrule Style	Hole ID	100% Graphite	15% Graphite 85% Vespel®	100% Vespel
Straight	1/4"	072621	072667	0726810
Sealing Ring	1/4"	0726003	072651	–
Reducing	0.5mm	–	0726660 (2 Pack)	–
	1/16"	0726282	072673	–
	1/8"	0726281	072668	–
	6.0mm	0726212	0726673	0726812
Reducing (short)	1/8"	0726151	–	–
	5/16"	072617	–	–
	6.0mm	072604	–	–
No-Hole (Blank)	–	–	072666	–

3/8" Fittings (All ferrules are supplied in packs of 10)

Ferrule Style	Hole ID	Part Number
100% Graphite Straight	3/8"	072615

1/2" Fittings (All ferrules are supplied in packs of 10)

Ferrule Style	Hole ID	Part Number
100% Graphite Straight	1/2"	072613

5mm Fittings (All ferrules are supplied in packs of 10)

Ferrule Style	Hole ID	Part Number
100% Graphite Straight	5mm	072605

[GC: Consumables: Unions

Mini Unions

For fused silica capillary columns. Glass lined for inertness. Low thermal mass.

Column ID	2nd Column ID	Pack Contents	Part No.
0.05-0.1mm	0.05-0.1mm	1 Union & 5 Ferrules (0.05-0.1mm ID)	103430
0.1-0.25mm	0.1-0.53mm	1 Union & 5 Ferrules (0.1-0.25mm ID)	103431
0.32mm	0.32-0.53mm	1 Union & 5 Ferrules (0.32mm ID)	103432
0.45-0.53mm	0.45-0.53mm	1 Union & 5 Ferrules (0.45-0.53mm ID)	103433
Replacement Mini Union Nuts		5	103400

Ferrules for Mini Unions (Supplied in packs of 10)

Ferrule Style	Column ID	Part Number
100% Graphite	0.32mm	072630
	0.53mm	072629
15% Graphite / 85% Vespel®	0.05-0.1mm	072695
	0.1-0.25mm	072696
	0.32mm	072697
	0.53mm	072698
	1/16" hole	072693
	Blank (No-hole)	072694
SilTite Metal	0.25mm	073470
	0.32mm	073471
	0.53mm	073472
	1/32"	073473

SilTite™ Mini Unions

For fused silica capillary columns. Glass lined for inertness. Low thermal mass.

Column ID	2nd Column ID	Pack Contents	Part No.
0.1-0.25mm	0.1-0.53mm	1 Union, 2 Nuts & 5 Ferrules (0.1-0.25mm ID)	073550
0.32mm	0.32-0.53mm	1 Union, 2 Nuts & 5 Ferrules (0.32mm ID)	073551
0.45-0.53mm	0.45-0.53mm	1 Union, 2 Nuts & 5 Ferrules (0.45-0.53mm ID)	073552
Replacement SilTite Mini Union Nuts*		5	073553

*SilTite nuts must be used with SilTite ferrules

Stainless Steel Unions

Description	Tubing Size OD	Part No.
Unions	1/16" x 1/16"	103330
	1/8" x 1/8"	101310
	1/4" x 1/4"	101270
Reducing Unions	1/8" x 1/16"	101290
	1/4" x 1/16"	101230
	1/4" x 1/8"	101250
Union Tees	1/16" x 1/16" x 1/16"	103418
	1/8" x 1/16" x 1/16"	1034180
	1/4" x 1/16" x 1/16"	1034183
	1/8" x 1/8" x 1/16"	1034181
Union Tee (Low hold up union uses male nuts)	1/16" x 1/16" x 1/16"	103442
Union Cross	1/16" x 1/16" x 1/16" x 1/16"	1034187
Replacement 100% Graphite Ferrules	1/16"	072603
	1/8"	072602
	1/4"	072601

All unions are supplied with ferrules ready for connection.

[GC: Consumables: Connectors, Nuts

Connectors: 1/16" Male / Female

Material	Tubing OD	Pack Contents	Part No.
Stainless Steel	2 x 1/16"	Union Connector x 1	1034604
		0.1-0.32mm ID Ferrule x 2	
	3 x 1/16"	Tee Connector x 1	1034605
		1/16" ID Ferrule x 2	
		0.1-0.32mm ID Ferrule x 2	

All unions are supplied with ferrules ready for connection.

Nuts for SGE Fittings

Material/Description	Size	Pack Size	Part No.
Standard Stainless Steel Nut	1/16" Hole	5	103403
	1/4"	5	103401
	1/8"	5	103402
Brass Nut (Nickel plated)	1/16" Hole	5	103404
Extended Brass Nut (Nickel plated)	1/16" Fittings x 1.2mm Hole	5	103406
Extended Mini Brass Nut (Nickel plated)	1/16" Fittings x 1.2mm Hole	2	1034085
Extended Stainless Steel Nut	1/16" Hole	5	103408
	1/16" Fittings x 1.2mm Hole	5	103405
	1/8"	5	1034050
	1/4" Hole	5	103407
Stainless Steel Mini Union Nut	1.2mm Hole	5	103400
Stainless Steel Male Nut	1/16" Hole	5	1034030
Agilent Column Nuts*	Deep Well	2	1034012
Spanner / Wrench	1/4" x 5/16" AF	1	18500001
	3/16" x 1/4" AF	1	18500002

*Allows use of standard length ferrules



Male to Female Union Connector,
Part No. 1034604



Male to Female Tee Connector,
Part No. 1034605



Manifold consisting of 4 Tee Connectors
from Part No. 1034605

GC: Accessories: Valves

Micro Control Valve (MCV) – Manual Operation

Configuration & Material	Length & Connection	Temp Rating	Vacuum Rated	Pressure Rating	Flow Rate	Valve Code	Part No.
L Single Outlet, Stainless Steel	50mm 1/16"	300°C	Yes	700psi	0-2000mL/min	MCV	1236012
	100mm 1/16"	300°C	Yes	700psi	0-2000mL/min	MCV	1236020
T Dual Outlet, Stainless Steel	50mm 1/16"	300°C	Yes	700psi	0-2000mL/min	MCVT	1236032

Brass Micro Control Valve (BMCV) – Manual Operation

Configuration & Material	Length & Connection	Temp Rating	Vacuum Rated	Pressure Rating	Flow Rate	Valve Code	Part No.
Single Outlet, Brass	1/16"	100°C	No	700psi	0-200mL/min	BMCV-A	1236281
	1/16"	100°C	No	700psi	0-2000mL/min	BMCV-1	1236282

Stainless Steel Manual On/Off Valve (SMOV) – Manual Operation

Configuration & Material	Length & Connection	Temp Rating	Vacuum Rated	Pressure Rating	Flow Rate	Valve Code	Part No.
Single Outlet, Stainless Steel	1/16"	100°C	No	700psi	–	SMOV	1236283
Dual Outlet, Stainless Steel	1/16"	300°C	Yes	500psi	–	MOV-T	1236071

Manual On/Off Valve Pneumatic (MOV-P) – Pneumatic Operation

Configuration & Material	Length & Connection	Temp Rating	Vacuum Rated	Pressure Rating	Flow Rate	Valve Code	Part No.
L Single Outlet, Stainless Steel	50mm 1/16"	300°C	Yes	700psi	–	MOV-P	1236091
T Dual Outlet, Stainless Steel	50mm 1/16"	300°C	Yes	700psi	–	MOVPT	1236103
	100mm 1/16"	300°C	Yes	700psi	–	MOVPT(L)	1236104
Adaptor Kit - for connecting Fused Silica Capillaries to SGE Micro Valves							1034606



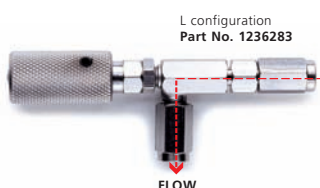
Micro Control Valves (MCV)

- high temperature metering valves (300°C)
- L or T configuration
- locknut for attachment to a mounting plate
- metering handle must be external to the oven



Brass Micro Control Valves (BMCV)

- back pressure regulator
- low temperature to 100°C
- locknut for plate mounting



Stainless Steel Manual On/Off Valves (SMOV)

- on/off gas regulator
- low temperature 100°C



Manual On/Off Valves Pneumatic (MOV-P)

- pneumatic control ON/OFF valve
- gas regulator for cold traps
- high temperature 300°C
- locknut for attachment to GC oven plate
- pneumatic head (black) must be external to oven

GC: Accessories: Capillary Column Splitters, Gas Purifier Traps

Capillary Column Splitters

Description	Column ID	Pack Size	Part No.
Fixed Inlet Capillary Column Splitter	0.1-0.25mm	1	123632
	0.32mm	1	123633
	0.45-0.53mm	1	123634
Replacement Ferrules	0.1-0.25mm (2-hole ferrule)	10	072662
	0.32mm (2-hole ferrule)	10	072664
	0.45-0.53mm (1-hole ferrule)	10	072655

Description	Split Ratio	Pack Size	Part No.
Fixed Outlet Capillary Column Splitter	User-determined Split Ratios*	1	123630
	1:1**	1	1861460
	1:5**	1	1861461
	1:10**	1	1861462
Replacement Tubing	1:1**	2	18614600
	1:5**	2	18614610
	1:10**	2	18614620
Replacement 2-Hole Ferrules	0.1-0.25mm ID Column	10	072662
	0.32mm ID Column	10	072664

Description	Part No.
Variable Outlet Capillary Column Splitter	1236291

*Includes 5 meter length of 0.22mm ID deactivated fused silica tubing.

**Includes fused silica tubing pre-fused into a 2-hole ferrule for preset split ratios.

Inlet Splitter for 0.1 - 0.25mm ID and 0.32mm ID Columns



Inlet Splitter for 0.45 - 0.53mm ID Columns

Gas Purifier Traps

Description	1/8" Fittings	1/4" Fittings
Moisture Trap	103487	103480
Hydrocarbon Trap	103488	103481
Oxygen Trap	103486	103482
Indicating Oxygen Trap	103491	-
Gas Purifier Kit	103494	
Contains:		
Moisture Trap		
Hydrocarbon Trap		
Oxygen Trap		
Back-up Indicating Oxygen Trap		

All gas traps are supplied with ferrules and fittings ready for installation.

Moisture Trap

- with gas flows of 1mL/min, the trap can remove moisture down to 10ppb
- impervious outer stainless steel casing
- can be used on all air, helium, hydrogen and nitrogen carrier gas lines

Hydrocarbon Trap

- absorbs hydrocarbon contaminants in the carrier gas
- can remove hydrocarbons to achieve a level as low as 15ppb
- impervious outer stainless steel casing

Oxygen Trap

- can remove oxygen to achieve a level as low as 15ppb
- impervious outer stainless steel casing

Oxygen Indicating Trap

- used in conjunction with the oxygen trap
- indicates when to change the oxygen trap

GC: Accessories

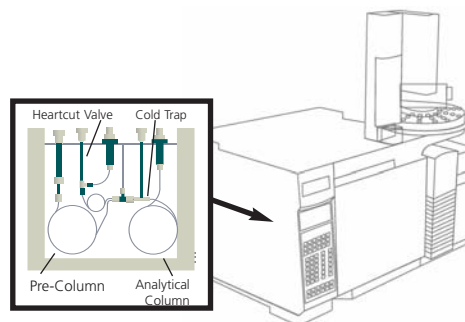
Please refer to www.sge.com or contact your local SGE Office for more information on the instruments on this page.

MDS 6890™ Multidimensional GC System

Ultimate in GC resolving capability

Description	Part No.
MDS 6890™ Multidimensional System	0933490
Optional Auxiliary EPC for 6890 GC	0933491

- modular design for 6890 GC
- incorporates EPC and external timed events
- simple installation
- enables separation of complex mixtures
- can be used with multiple detectors (FID, ECD, NPD, TCD & MS)



Olfactory Detector Outlet (ODO) II

For identification of components by odor or fragrance

Description	Part No.
Outlet System (ODO II)	093510



The Olfactory Detector Outlet is designed to take the flow from the end of the capillary column and transfer it to a nose cone in which it is mixed with a humidified air stream, allowing the operator to identify individual components by smell as they elute from the column.

The capillary column flow is simultaneously split to an MS detector (or other detector) for mass spectral identification of unknown compounds.

gc-BackFlush

Shortens analysis time by flushing heavy components out through the split vent

Description	Part No.
gc-BackFlush System	093352

- reverses flow through the capillary column at a predetermined time
- flushes heavy components out through the split vent
- shortens analysis time
- higher throughput of samples
- lower operating temperatures
- increased column lifetime



AirSharp™

Sharpens peaks for enhanced sensitivity

Description	Pack Size	Part No.
AirSharp System	1	093390



- suitable for trapping / focusing a component in a narrow band at the end of the capillary column
- dramatically sharpens chromatographic peaks to increase sensitivity
- able to spot-cool a section of the capillary column to ambient temperature
 - uses standard grade compressed air
- no need to use carbon dioxide or liquid nitrogen as the coolant
- can run indefinitely using an air compressor, eliminating the need to change gas bottles

GC: Accessories

Cold Trap

For focusing or holding components, including highly volatile compounds

Description	Part No.
Liquid CO ₂ Cryogenic Cold Trap	093346

The cryogenic cold trap is suitable for trapping / focusing samples in a narrow band on the column. The trap operates by cooling a short section of the column and is designed to be easily cooled or reheated to allow excellent peak shape and reproducibility.



Pyrojector II™

Pyrolysis GC accessory for analysis of non volatile substances (can operate up to 900°C)

Description	Pack Size	Part No.
Pyrojector II Pyrolysis System*	1	095000

* Must specify instrument make and model of GC when ordering. Adaptor is supplied with pyrolysis system.

Pyrojector II – Pyrolysis Injection System
SGE Pyrojector II is an economical, continuous mode microfurnace pyrolyzing injection system which is highly reproducible. It is ideally suited for use with High Resolution Capillary GC, and is supplied with a range of sample introduction systems designed for both liquid and solid samples.



FID Flame Jets

Agilent Technologies

Description	Instrument	Temperature (°C)	Length (mm)	Tube ID (mm)	Tip Dimension (mm)	Part No.
Glass Lined Flame Jets	5890	400	61.3	0.9	0.35	103474
	6890	400	42.5	0.9	0.35	103475
High Temperature Flame Jets	5890	450	61.3	1.1	0.43	103479
	6890	450	42.5	1.1	0.43	103477



5890 FID Flame Jet,
Part No. 103474 & 103479



6890 FID Flame Jet,
Part No. 103475 & 103477

GC: Accessories

ms-NoVent II™

Complete GC-MS column changeover in 5 minutes. Reduced maintenance downtime.
For a complete ms-NoVent II™ unit, please order a Control Unit, Restrictor and Tee.

Description	Pack Size	Part No.	
Control unit, ms NoVent II	1	113440	
ms NoVent II Tee and Restrictor/Adaptor - MS Make and Model Specific			
GC-MS Manufacturer	Model	Description	Part No.
Agilent Technologies (HP)	HP5970	Restrictor (Packet of 2)	113451
		Tee	113490
	HP5971/5972	Restrictor (Packet of 2)	113452
		Tee	113490
	HP5973	Restrictor (Packet of 2)	113453
		Tee	113490
	HP5989	Restrictor (Packet of 2)	113454
		Tee	113490
	HP-GCD	Restrictor (Packet of 2)	113455
		Tee	113490
	HP5988-A	Restrictor (Packet of 2)	113456
		Tee	113490
PerkinElmer	Turbomass/Gold	Restrictor (Packet of 2)	113460
		Tee	113492
Shimadzu	MS 5000/5050	Restrictor (Packet of 2)	113465
		Tee	113491
	MS 5000/5050 with Wide Bore Interface	Restrictor (Packet of 2)	113466
		Tee	113490
	2010	Restrictor (Packet of 2)	113455
		Tee	113490
Thermo Electron	GCQ	Restrictor (Packet of 2)	113470
		Tee	113490
	SSQ7000	Restrictor (Packet of 2)	113471
		Tee	113490
	Voyager	Restrictor (Packet of 2)	113472
		Tee	113490
	Polaris Q	Restrictor (Packet of 2)	113475
		Tee	113490
	Trace DSQ	Restrictor (Packet of 2)	113475
		Tee	113490
Focus DSQ	Restrictor (Packet of 2)	113475	
	Tee	113490	
Varian	Saturn 2000, 2100, 2200	Restrictor (Packet of 2)*	113480
		Tee	113490
	Saturn 1, 2 ,3 and 4	Restrictor (Packet of 2)*	113481
		Tee	113490
* includes adaptor.			
Replacement Restrictor only may be ordered as follows:			
Varian	Saturn 2000, 2100, 2200	Replacement Restrictor Only	113482
	Saturn 1, 2 ,3 and 4	Replacement Restrictor Only	113483

LC: PROTECOL™ CAPILLARY AND NANO LC

The ProteCol™ System

Incorporating columns, unions, tubing, splitters and filters, every component of Protecol has been designed specifically for capillary and nano LC.

Performance Plus: The peak broadening effect of dead volume and total swept volume is much more significant in capillary and especially nano LC compared to conventional LC. The entire ProteCol™ range has been specifically designed as a 'zero dead volume' system to give you the highest possible resolution and efficiency, therefore maximizing sensitivity.

Ease of Use: A key to the success of the ProteCol™ system is the ease with which zero dead volume connections can be made between columns, tubing and all accessories.

Versatility: ProteCol™ columns, unions and accessories are designed to be used together as a complete system, or can be individually incorporated into your existing capillary or nano LC system.

Flexibility: With a variety of columns, unions, and tubing sizes, ProteCol™ adapts to suit your own requirements.

ProteCol™ Columns

ProteCol™ columns are the heart of the ProteCol™ system. Designed specifically for capillary and nano LC, ProteCol™ columns are integrated with the connection tubing, which is supplied with square cut and polished ends for easy zero dead volume connections.

ProteCol™ Unions

ProteCol™ unions are specially designed and manufactured to exacting tolerances to provide perfect butt connections with zero dead volume.

ProteCol™ Trap Columns

ProteCol™ trap columns allow on-line pre-concentration or desalting of a sample before injection onto the analytical column. All trap columns are supplied with 1/32" PEEKsil™ tails for maximum flexibility.

ProteCol™ Guard Columns and Filters

ProteCol™ Guard columns and filters protect the analytical column from the effects of chemical and particulate contaminants. Use of a guard column can extend the life of an analytical column by a factor of four.

PEEKsil™ Tubing

SGE's PEEKsil™ tubing combines the inertness and smooth surface of fused silica for optimum liquid flow, with the easy handling and robustness of PEEK. The ends of all PEEKsil™ tubing are perfectly square cut and polished to facilitate zero dead volume connections, critical to the success of capillary and nano LC.

ProteCol™ Accessory & Starter Kits

ProteCol™ Accessory Kits provide a selection of the essential ProteCol™ components.

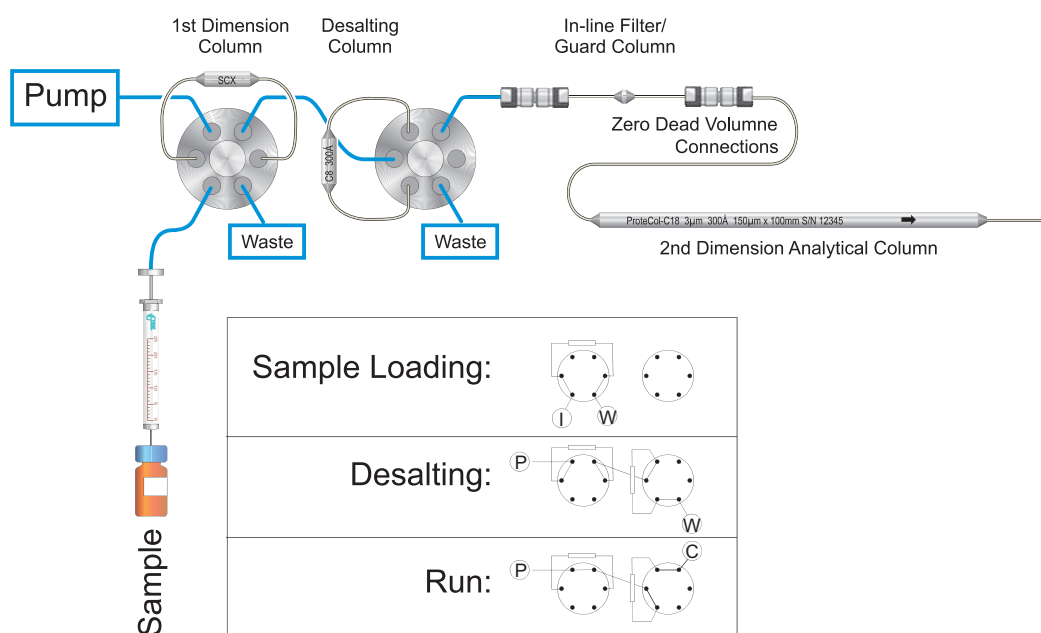


Figure 1. Schematic diagram showing typical implementation of ProteCol™ products.

LC: PROTECOL™ CAPILLARY AND NANO LC

ProteCol™ Analytical Capillary Columns

Supplied in packs of one.

Typical Flow Rates $\mu\text{L}/\text{min}$: 3.5-6.0 (300 μm ID); 0.8-1.5 (150 μm ID); 0.1-0.4 (75 μm ID).

	ID (μm)	Column Length (mm)	PEEKsil Tail OD (inch)	PEEKsil Tail ID (μm)	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Packing Material	Part No.
C18	75	100	1/32	25	100	200	C18, 120Å, 3 μm	2206252
	75	100	1/32	25	100	200	C18, 300Å, 3 μm	2206254
	150	50	1/16	50	100	200	C18, 120Å, 3 μm	2104152
	150	100	1/16	50	100	200	C18, 120Å, 3 μm	2104252
	150	150	1/16	50	100	200	C18, 120Å, 3 μm	2104352
	300	50	1/16	50	100	200	C18, 120Å, 3 μm	2102152
	300	100	1/16	50	100	200	C18, 120Å, 3 μm	2102252
	300	150	1/16	50	100	200	C18, 120Å, 3 μm	2102352
	150	50	1/16	50	100	200	C18, 300Å, 3 μm	2104154
	150	100	1/16	50	100	200	C18, 300Å, 3 μm	2104254
	150	150	1/16	50	100	200	C18, 300Å, 3 μm	2104354
	300	50	1/16	50	100	200	C18, 300Å, 3 μm	2102154
	300	100	1/16	50	100	200	C18, 300Å, 3 μm	2102254
	300	150	1/16	50	100	200	C18, 300Å, 3 μm	2102354
	150	50	1/32	50	100	200	C18, 120Å, 3 μm	2204152
	150	100	1/32	50	100	200	C18, 120Å, 3 μm	2204252
	150	150	1/32	50	100	200	C18, 120Å, 3 μm	2204352
	300	50	1/32	50	100	200	C18, 120Å, 3 μm	2202152
	300	100	1/32	50	100	200	C18, 120Å, 3 μm	2202252
	300	150	1/32	50	100	200	C18, 120Å, 3 μm	2202352
	150	50	1/32	50	100	200	C18, 300Å, 3 μm	2204154
	150	100	1/32	50	100	200	C18, 300Å, 3 μm	2204254
	150	150	1/32	50	100	200	C18, 300Å, 3 μm	2204354
	300	50	1/32	50	100	200	C18, 300Å, 3 μm	2202154
	300	100	1/32	50	100	200	C18, 300Å, 3 μm	2202254
	300	150	1/32	50	100	200	C18, 300Å, 3 μm	2202354
C8	75	100	1/32	25	100	200	C8, 300Å, 3 μm	2206258
	150	100	1/32	50	100	200	C8, 300Å, 3 μm	2204258
	300	100	1/32	50	100	200	C8, 300Å, 3 μm	2202258
C4	75	100	1/32	25	100	200	C4, 300Å, 3 μm	2206256
	150	100	1/32	50	100	200	C4, 300Å, 3 μm	2204256
	300	100	1/32	50	100	200	C4, 300Å, 3 μm	2202256

ProteCol™ Analysis Kits

Description	Pack Size	Part No.
ProteCol™ Glycosylation Analysis Kit	1	224005
ProteCol™ Peptide Analysis Kit	1	224000

ProteCol™ Capillary Guard Columns

Supplied in packs of one.

	ID (μm)	Column Length (mm)	PEEKsil Tail OD (inch)	PEEKsil Tail ID (μm)	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Packing Material	Part No.
C18	75	10	1/32	25	12	50	C18, 120Å, 3 μm	222603
	75	10	1/32	25	12	50	C18, 300Å, 3 μm	222604
	150	10	1/16	50	12	50	C18, 120Å, 3 μm	212403
	300	10	1/16	50	12	50	C18, 120Å, 3 μm	212203
	150	10	1/32	50	12	50	C18, 120Å, 3 μm	222403
	300	10	1/32	50	12	50	C18, 120Å, 3 μm	222203
	150	10	1/16	50	12	50	C18, 300Å, 3 μm	212404
	300	10	1/16	50	12	50	C18, 300Å, 3 μm	212204
	150	10	1/32	50	12	50	C18, 300Å, 3 μm	222404
	300	10	1/32	50	12	50	C18, 300Å, 3 μm	222204
C8	75	10	1/32	25	12	50	C8, 300Å, 3 μm	222605
	150	10	1/32	50	12	50	C8, 300Å, 3 μm	222405
	300	10	1/32	50	12	50	C8, 300Å, 3 μm	222205
C4	75	10	1/32	25	12	50	C4, 300Å, 3 μm	222606
	150	10	1/32	50	12	50	C4, 300Å, 3 μm	222406
	300	10	1/32	50	12	50	C4, 300Å, 3 μm	222206

LC: PROTECOL™ CAPILLARY AND NANO LC

ProteCol™ Capillary Trap Columns

Includes 2 PEEK fingertight fittings for 10/32" port. Supplied in packs of one.

Typical Flow Rates $\mu\text{L}/\text{min}$: 3.5-6.0 (300 μm ID); 0.8-1.5 (150 μm ID); 0.1-0.4 (75 μm ID).

	ID (μm)	Column Length (mm)	PEEKsil Tail OD (inch)	PEEKsil Tail ID (μm)	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Packing Material	Part No.
C18	75	10	1/32	25	70	70	C18, 120Å, 3 μm	2226052
	75	10	1/32	25	70	70	C18, 300Å, 3 μm	2226054
	150	10	1/32	50	70	70	C18, 120Å, 3 μm	2224052
	300	10	1/32	50	70	70	C18, 120Å, 3 μm	2222052
	150	10	1/32	50	70	70	C18, 300Å, 3 μm	2224054
	300	10	1/32	50	70	70	C18, 300Å, 3 μm	2222054
	300	5	1/32	50	70	70	C18, 300Å, 3 μm	2227054
C8	75	10	1/32	25	70	70	C8, 300Å, 3 μm	2226058
	150	10	1/32	50	70	70	C8, 300Å, 3 μm	2224058
	300	10	1/32	50	70	70	C8, 300Å, 3 μm	2222058
C4	75	10	1/32	25	70	70	C4, 300Å, 3 μm	2226056
	150	10	1/32	50	70	70	C4, 300Å, 3 μm	2224056
	300	10	1/32	50	70	70	C4, 300Å, 3 μm	2222056
IMAC	300	10	1/32	50	70	70	IMAC	2222060
	150	10	1/32	50	70	70	IMAC	2224060

ProteCol™ In-Line Filters

Supplied in packs of three.

	PEEKsil Tail OD (inch)	PEEKsil Tail ID (μm)	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Part No.
	1/32	50	50	50	222012
	1/16	50	50	50	212005

ProteCol™ In-Line Filter Kit

	Part No.
Includes:	222016
3 x 1/32" In-Line Filters	
2 PEEK fingertight fittings for 6-40UNF port	
2 PEEK fingertight fittings for 10/32" port	

PEEKsil™ Tubing Kits

Description	Part No.
ProteCol™ 1/16" tubing kit (50 μm I.D. 100, 200, 300mm lengths x 5 ea.)	212012
ProteCol™ 1/32" tubing kit (50 μm I.D. 100, 200, 300mm lengths x 5 ea.)	222008

ProteCol™ Flow Splitters

Description	Part No.
ProteCol™ Flow Splitter with 1/16" O.D. PEEKsil outlet	212001
ProteCol™ Flow Splitter with 1/32" O.D. PEEKsil outlet	222001
ProteCol™ Fused Silica Restriction Capillary for Flow Splitter (Pkt 2)	212003

ProteCol™ MicroFlow Meters

Description	Part No.
2 μL flow path volume (0.2 - 10 $\mu\text{L}/\text{min}$)	222013
25 μL flow path volume (2.5 - 100 $\mu\text{L}/\text{min}$)	222014

PEEK Fingertight fittings (Packet of 5)

Description	Part No.
1/32" to 6-40UNF	222017
1/32" to 10/32"	222002
1/32" to 10/32" (Long)	2062753

LC: PROTECOL™ CAPILLARY AND NANO LC

ProteCol™ Stainless Steel Unions

Supplied in packs of two unions and four ferrules.

Description	Part No.
1/16" to 1/16"	212006
1/16" to 1/32"	212007
1/16" to 0.36/0.28mm	212008
1/32" to 1/32"	222005
1/32" to 0.36/0.28mm	222006
0.36/0.28mm to 0.36/0.28mm	222007

ProteCol™ PEEK Unions

For high pressure applications (above 150bar) stainless steel unions are recommended. Supplied in packs of two unions and four ferrules.

Description	Part No.
1/16" to 1/16"	212009
1/16" to 1/32"	212010
1/16" to 0.36/0.28mm	212011
1/32" to 1/32"	222009
1/32" to 0.36/0.28mm	222010
0.36/0.28mm to 0.36/0.28mm	222011

ProteCol™ PEEK Ferrules

Supplied in packs of five.

Description	Part No.
ProteCol 1/16" to 1/16" PEEK Ferrules	213006
ProteCol 1/16" to 1/32" PEEK Ferrules	213007
ProteCol 1/16" to 0.36/0.28mm PEEK Ferrules	213008
ProteCol 1/32" to 1/32" PEEK Ferrules	223005
ProteCol 1/32" to 0.36mm PEEK Ferrules	223006
ProteCol 0.36/0.28mm to 0.36/0.28mm PEEK Ferrules	223007

ProteCol™ 1/16" Accessory Kit

	Part No.
Includes:	212000
2 x 1/16" - 1/16" stainless steel union	
3 x 1/16" - 1/16" double-end PEEK ferrules	
1 x in-line filter with 1/16" 50µm x 50mm PEEKsil tubing	
1 x 1/16" 50µm x 100 mm PEEKsil tubing	
1 x 1/16" 50µm x 150 mm PEEKsil tubing	
positioning toolkit* (acrylic clamp, wrench and depth gauge)	

ProteCol™ 1/32" Accessory Kit

	Part No.
Includes:	222000
2 x 1/32" - 1/32" stainless steel union	
3 x 1/32" - 1/32" double-end PEEK ferrules	
1 x in-line filter with 1/32" 50µm x 50mm PEEKsil tubing	
1 x 1/32" 50µm x 100 mm PEEKsil tubing	
1 x 1/32" 50µm x 150 mm PEEKsil tubing	
positioning toolkit* (acrylic clamp, wrench and depth gauge)	

ProteCol™ Starter Kit

	Part No.
Includes:	2224010
C18 analytical column 150µm, 1/32", 120Å, 3µm	
Inline filter 1/32"	
C18 Trap 150µm, 1/32", 120Å, 3µm	
C4 Trap 150µm, 1/32", 120Å, 3µm	
SCX Trap 150µm	
Guard Column (Pack 3)	
Column Unions 1/32" to 1/32" (Pack 2)	
Column Unions 1/32" to 0.36/0.28mm (Pack 3)	
PEEKsil tubing 1/32" 50µm I.D. 100mm	
1/32" to 10/32"	

LC: COLUMNS

SGE also manufactures empty HPLC and Micro HPLC columns. For information on these products, please contact your local SGE office or distributor.

C18 - 3 Micron

Packing Type	ID (mm)	Length (mm)	Pore Size (Å)	Column Type	Part No.
Wakosil II™ C18 RS					
	4.0	50	120	Glass Lined Tubing	2084052
		150	120	Glass Lined Tubing	2070252
		250	120	Glass Lined Tubing	2070262
	4.6	150	120	Stainless Steel	2066052
		250	120	Stainless Steel	2065052
Exsil™ ODS	4.0	50	80	Glass Lined Tubing	2084010
		100	80	Glass Lined Tubing	207006
		150	80	Glass Lined Tubing	207005
		250	80	Glass Lined Tubing	207004
	4.6	50	80	Stainless Steel	2086010
		100	80	Stainless Steel	2062010
		150	80	Stainless Steel	2066010
		250	80	Stainless Steel	2065010
		250	80	Stainless Steel	2065010

C18 - 5 Micron

Packing Type	ID (mm)	Length (mm)	Pore Size (Å)	Column Type	Part No.
Wakosil II C18 RS					
	1.0	100	120	Glass Lined Tubing	207082
		150	120	Glass Lined Tubing	207081
		250	120	Glass Lined Tubing	207080
	2.0	50	120	Glass Lined Tubing	208205
		100	120	Glass Lined Tubing	207027
		150	120	Glass Lined Tubing	207028
		250	120	Glass Lined Tubing	207029
	4.0	150	120	Glass Lined Tubing	207025
		250	120	Glass Lined Tubing	207026
	4.6	50	120	Stainless Steel	208605
		150	120	Stainless Steel	206605
		250	120	Stainless Steel	206505
Wakosil II C18 AR	4.0	150	120	Glass Lined Tubing	2070250
		250	120	Glass Lined Tubing	2070260
	4.6	150	120	Stainless Steel	2066050
		250	120	Stainless Steel	2065050
Wakosil II C18 HG	4.6	150	120	Stainless Steel	2066051
		250	120	Stainless Steel	2065051
Nucleosil ODS	1.0	50	300	Glass Lined Tubing	2081014
		100	300	Glass Lined Tubing	207040
		150	300	Glass Lined Tubing	207039
		250	300	Glass Lined Tubing	207038
	2.0	50	300	Glass Lined Tubing	2082014
		100	300	Glass Lined Tubing	207018
	4.6	150	300	Stainless Steel	2066014
		250	300	Stainless Steel	2065014
Exsil™ ODS	2.0	50	80	Glass Lined Tubing	208201
		100	80	Glass Lined Tubing	207009
		150	80	Glass Lined Tubing	2070091
		250	80	Glass Lined Tubing	207007
	4.0	100	80	Glass Lined Tubing	207003
		150	80	Glass Lined Tubing	207002
		250	80	Glass Lined Tubing	207001
	4.6	100	80	Stainless Steel	206201
		150	80	Stainless Steel	206601
		250	80	Stainless Steel	206501

LC: COLUMNS, GUARD CARTRIDGES

C8 - 5 Micron

Packing Type	ID (mm)	Length (mm)	Pore Size (Å)	Column Type	Part No.
Wakosil II™ C8 RS	4.0	250	120	Glass Lined Tubing	207130
	4.6	150	120	Stainless Steel	206610
		250	120	Stainless Steel	206510
Exsil™ C8	4.0	250	80	Glass Lined Tubing	207100
	4.6	150	80	Stainless Steel	2066030
		250	80	Stainless Steel	2065030

Other Exsil - 5 Micron Phases

Packing Type	ID (mm)	Length (mm)	Pore Size (Å)	Column Type	Part No.
Exsil Amino	4.0	250	80	Glass Lined Tubing	207500
	4.6	150	80	Stainless Steel	206607
		250	80	Stainless Steel	206507
Exsil Cyano	4.0	250	80	Glass Lined Tubing	207600
	4.6	150	80	Stainless Steel	206608
		250	80	Stainless Steel	206508
Exsil Phenyl	4.6	150	80	Stainless Steel	2066069
		250	80	Stainless Steel	2065069
Exsil Silica	4.6	150	80	Stainless Steel	206609
		250	80	Stainless Steel	206509
Exsil SAX (Strong Anion Exchange)					
	4.0	250	80	Glass Lined Tubing	207400
	4.6	150	80	Stainless Steel	206612
		250	80	Stainless Steel	206512
Exsil SCX (Strong Cation Exchange)					
	4.0	250	80	Glass Lined Tubing	207300
	4.6	150	80	Stainless Steel	206614
		250	80	Stainless Steel	206514

Guard Cartridges

Column Type	LC Column ID (mm)	Packing Type	Pack Size	Part No.
C18 – 3 micron	4.0 & 4.6	Wakosil RS	3	2050192
	4.0 & 4.6	Exsil ODS	3	2050010
C18 – 5 micron	1.0	Wakosil RS	3	2091050
	2.0	Wakosil RS	3	2092050
	4.0 & 4.6	Wakosil AR	3	2050190
	4.0 & 4.6	Wakosil HG	3	2050191
	4.0 & 4.6	Wakosil RS	3	205019
	1.0	Nucleosil ODS	3	2091014
	2.0	Nucleosil ODS	3	2092014
	4.0 & 4.6	Nucleosil ODS	3	2050014
	2.0	Exsil ODS	3	209201
	4.0 & 4.6	Exsil ODS	3	205001
C8 – 5 micron	4.0 & 4.6	Wakosil RS	3	205016
	4.0 & 4.6	Exsil	3	205003
Amino – 5 micron	4.0 & 4.6	Exsil	3	205004
Cyano – 5 micron	4.0 & 4.6	Exsil	3	205007
Phenyl – 5 micron	4.0 & 4.6	Exsil	3	205008
Silica – 5 micron	4.0 & 4.6	Silica	3	205002
SAX (Strong Anion Exchange) – 5 micron				
	4.0 & 4.6	Exsil	3	205006
SCX (Strong Cation Exchange) – 5 micron				
	4.0 & 4.6	Exsil	3	205005
Guard Cartridge Holder	4.0 & 4.6	–	1	205000

LC: ACCESSORIES

Detector / Tubing Unions

Description	Part No.
Union for Waters® and Rheodyne tubing	2062746
Union for Swagelok®, Parker™ and Valco® tubing	2062747

EasyLOK™ Fitting

Description	Pack Size	Part No.
EasyLOK Fitting	2 *	206102
PEEK™ Double Ended Ferrules	10	206160

*PEEK™ ferrules not supplied

Hexnut™ Fitting

Description	Pack Size	Part No.
Hexnut Fitting	2 *	1021003
Replacement PEEK™ Ferrules	10	0730014

*Includes 2 PEEK™ ferrules

Filters

Description	Part No.
In-line Filter with a 0.5µm Frit (supplied with holder)	204002
Replacement In-line Filter Frit Assembly	202009
Solvent Filter (1µm)	204000

PEEKsil™ Injection Loops

Volume (µL)	Part No.
10	0650010
20	0650020

High Efficiency Column Couplers

Description	Pack Size	Part No.
Stainless Steel Hexnut™ Coupler	1	200009
Replacement PEEKsil™ Tubing 1/16" x 175µm ID x 5mm	5	0624351

MicroFlow™ Meter

Description	Capacity	Part No.
MicroFlow Meter	50µL, 250µL & 1mL cells	206372
Replacement Flow Cell	50µL	206375
	250µL	206377
	1mL	206379

TUBING: Fused Silica

Fused Silica Capillary Tubing (Deactivated)

ID mm	OD mm	Length meter	Pack size	Methyl deactivated Part No.	Phenyl deactivated Part No.
0.025	0.285	2	1	062442	-
0.05	0.22	2	1	062444	-
0.06	0.22	2	1	062445	-
0.075	0.19	2	1	0624450	-
0.1	0.363	25	1	0624455	-
0.11	0.17	2	1	062446	-
0.11	0.32	2	1	0624459	-
0.15	0.22	2	1	0624460	-
0.15	0.22	5	1	0624461	-
0.15	0.22	10	1	0624463	-
0.15	0.363	2	1	0624465	-
0.15	0.363	5	1	0624475	-
0.17	0.3	2	1	0624491	-
0.17	0.3	5	1	062449	-
0.22	0.32	2	1	0624469	-
0.22	0.32	5	1	062447	064102
0.22	0.32	5	5	064050	-
0.22	0.32	10	1	0624478	064103
0.22	0.32	25	1	0624474	-
0.25	0.35	2	1	0624431	-
0.25	0.35	5	1	0624432	064061
0.25	0.35	5	5	064051	-
0.25	0.35	10	1	0624434	064062
0.32	0.43	2	1	0624470	-
0.32	0.43	5	1	0624471	064108
0.32	0.43	5	5	064052	-
0.32	0.43	10	1	0624476	-
0.32	0.43	25	1	0624473	-
0.53	0.68	2	1	0624479	-
0.53	0.68	5	1	062448	064114
0.53	0.68	5	5	064054	-
0.53	0.68	10	1	064033	-
0.53	0.68	25	1	064034	-

Fused Silica (100% Methyl or Phenyl Deactivated)

An essential ingredient in maintaining a high performance chromatography system.

- 0.025-0.53mm ID
- quality guaranteed
- chemically inert and thermally stable
- suitable for organic and aqueous solvents
- ideal for biotechnology applications
- custom-made tubing available upon request
- tubing protected with a high temperature Polyimide resin (+400°C)

Deactivation Type

Description	Polarity	Solvent compatibility	Applications
Methyl	Non-polar	Hydrocarbons, such as pentane, hexane, heptane, iso-octane, aromatics and mixed solvents	General use for retention gaps and guard columns in GC. Also for use in biotechnology applications
Phenyl	Medium polarity	Chlorinated and some aromatic solvents, ketones and alcohols	For high temperature applications or when separating high molecular weight compounds

TUBING: Fused Silica

Fused Silica Capillary Tubing (Not Deactivated)

Polyimide Coated Fused Silica Capillary Tubing

	ID mm	OD mm	Length m	Part No.
Fused Silica (Non Deactivated) - used in a wide range of capillary GC, LC and Bioanalytical applications - made from high quality fused silica - tubing protected with a high temperature Polyimide resin (+400°C) 100% proof tested - custom-made tubing available upon request	0.005	0.285	10	062456
	0.01	0.285	10	062458
	0.025	0.15	10	062461
	0.025	0.285	10	062460
	0.025	0.363	*	062710
	0.04	0.14	10	0624625
	0.05	0.15	10	0624635
	0.05	0.22	10	062463
	0.05	0.36	*	062711
	0.06	0.22	10	0624655
	0.075	0.19	10	062466
	0.075	0.363	*	062712
	0.1	0.2	10	0624685
	0.1	0.363	10	062469
	0.1	0.363	25	062470
	0.1	0.363	*	062714
	0.11	0.17	10	062454
	0.11	0.17	25	062457
	0.15	0.22	10	062472
	0.15	0.22	25	062473
	0.15	0.285	10	062474
	0.15	0.363	*	062713
	0.22	0.32	10	062475
	0.22	0.32	25	062476
	0.25	0.35	10	062492
	0.32	0.43	10	062478
	0.32	0.43	25	062479
	0.53	0.68	10	062481
	0.53	0.68	25	062482

*Supplied as a continuous length. One meter is one unit, e.g. to order 14 meters of 0.15mm ID x 0.363mm OD, the order must be for 14 of part number 062713, which would be supplied as a continuous length of 14 meters.

Capillary Electrophoresis Tubing

Tubing Type	ID mm	OD mm	Length m	Part No.
Untreated	0.030	0.363	1	062801
	0.050	0.363	1	062803
	0.075	0.363	1	062813
	0.100	0.363	1	062823
ES2 Treated	0.075	0.363	1	062812
ES20 Treated	0.050	0.363	1	062881

Electrophoresis Tubing

- manufactured from precision bore tubing
- hydrophobic and hydrophilic surface treatments
- wide pH range
- 30, 50, 75 and 100µm ID
- column-to-column reproducibility

ES2 Treated

- amide, hydrophobic, hydrolytically stable phase
- moderately polar
- pH range 5-9
- ideal for proteins, peptides and enzymes analysis

ES20 Treated

- polyethylene glycol phase, weakly hydrophilic
- pH range 2-10
- ideal for proteins and peptides applications

TUBING: PEEKsil™

PEEKsil™ Tubing

Fused Silica Lined Polymer Tubing, the best connection tubing for all LC

OD 1/16" ID mm	50mm Pack of 5	100mm Pack of 5	150mm Pack of 5	200mm Pack of 5	500mm Pack of 2	2000mm Pack of 1
0.020	-	-	-	-	0624207	-
0.025	0624225	0624226	0624227	0624228	0624229	0624410
0.030	-	-	0624240	-	-	-
0.050	0624251	0624252	0624254	0624253	0624250	0624411
0.075	0624290	0624291	0624292	0624293	0624294	0624412
0.100	0624301	0624302	0624304	0624303	0624300	0624413
0.150	0624230	0624231	0624232	0624233	0624234	0624414
0.175	0624351	0624352	0624354	0624353	0624350	0624415
0.200	0624202	0624203	0624205	0624204	0624201	0624416
0.300	0624214	0624215	0624216	0624217	0624218	0624417
0.530	0624365	0624366	0624367	0624368	0624370	-

OD 1/32" (Packet of 2) ID mm	50mm	100mm	150mm	250mm	500mm	2000mm
0.025	0624241	0624242	0624243	0624245	0624249	0624420
0.050	0624261	0624262	0624263	0624265	0624269	0624421
0.075	0624271	0624272	0624273	0624275	0624279	0624422
0.100	0624311	0624312	0624313	0624315	0624319	0624423
0.150	0624341	0624342	0624343	0624345	0624349	0624424
0.200	-	-	-	-	-	0624426
0.250	-	-	-	-	-	0624427

OD 0.36mm (Packet of 2) ID mm	50mm	100mm	150mm	250mm	500mm
0.025	0624371	0624372	0624373	0624374	0624375
0.050	0624376	0624377	0624378	0624379	0624380

Color Coding for PEEKsil™ Tubing

Color	ID (µm)
Orange	25
Beige (Natural)	50
Black	75
Red	100
Purple	150
Yellow	175
Blue	200
Yellow	250
Grey	300
Bone White	530

PEEKsil™ tubing is constructed from a core of smooth precision bore fused silica tubing bonded to a 1/16", 1/32" or 0.36mm OD PEEK™ outer sheath. It is ideal for LC systems where conventional 1/16" OD fittings are used and small bore tubing, capable of withstanding high pressures, is required.

TUBING: Glass Lined (GLT™), Stainless Steel

Glass Lined Tubing (GLT™)

1/16" OD GLT™

ID	30cm	60cm	90cm	180cm
0.3mm	082707	082708	082709	082710
0.4mm	082712	-	-	-
0.5mm	082717	082718	082719	082720
0.7mm	082722	082723	082724	082725
0.8mm	0827352	0827353	0827354	0827355

1/8" OD GLT™

ID	25cm	30cm	60cm	90cm	180cm
0.5mm	-	0827375	0827376	0827377	0827378
0.75mm	082731	082732	082733	082734	082735
1.0mm	0827374	082737	082738	082739	082740
1.5mm	-	082742	082743	082744	082745
1.8mm	-	082747	-	-	082750

1/4" OD GLT™

ID	30cm	60cm	90cm	180cm
1.0mm	-	-	0827571	0827572
2.0mm	-	-	082760	082761
4.0mm	082767	082768	082769	082770

1/2" OD GLT™

ID	60cm
9.50mm	08277028

Stainless Steel Chromatography Tubing

Tubing Type	ID (mm)	Length (m)	Part No.
1/48" OD	0.25	25	062401
1/32" OD	0.50	25	062406
1/16" OD	0.80	2	062418
	0.80	5	0624160
	0.80	10	062416
1/8" OD	2.20	2	0624173
	2.20	5	062415

Tubing Cutters

Description	Tubing OD	Pack Size	Part No.
Terry Tool – Stainless Steel Tubing Cutters	1/16"	1	082780
	1/8"	1	082782
Replacement Wheel	-	3	082781
Fused Silica Tubing Cutter	-	1	0625010

MS: ELECTRON MULTIPLIERS

Visit www.etpsci.com for more information on discrete dynode electron multipliers.

GC-MS & LC-MS

Instrument	Analyzer Type	Technique	Part No.
Agilent Technologies			
5970 (All)	Quadrupole	GC-MS	14511
5971, 5972, GCD	Quadrupole	GC-MS	14516
5973 / 5975 (Initial Installation - includes mount)	Quadrupole	GC-MS	14617
5973/5975 (Replacement multiplier)	Quadrupole	GC-MS	14616
5988 ± ions	Quadrupole	GC-MS & LC-MS	14612
5988 + ions only	Quadrupole	GC-MS & LC-MS	14512
5989 (HED) (Initial Installation - includes mount)	Quadrupole	GC-MS & LC-MS	14627
5989 (HED) (Replacement Multiplier)	Quadrupole	GC-MS & LC-MS	14625
5989 (No HED)	Quadrupole	GC-MS & LC-MS	14613
599x	Quadrupole	GC-MS	14511
LC-MSD (Multiplier, Mount & Feedthrough)	Quadrupole	LC-MS	14639
LC-MSD (Replacement Multiplier)	Quadrupole	LC-MS	14616
Inficon			
Auditor	Quadrupole	GC-MS	14532
JEOL			
AX, HX & SX Series	Magnetic Sector	Multiple	14185
K9 (Multiplier only)	Magnetic Sector	GC-MS	14630
K9 (Multiplier & Mount)	Magnetic Sector	GC-MS	14632
Kratos			
MS25, MS50 & MS80	Magnetic Sector	Multiple	14132
PerkinElmer			
Ion Trap GC-MS	Ion Trap	GC-MS	14138
Q-Mass	Quadrupole	GC-MS	14532
PE-Sciex			
API 2000	Quadrupole	LC-MS	14610
API 300 / 3000 / 4000	Quadrupole	LC-MS	14636
Shimadzu			
QP8000 (Initial Installation - includes mount)	Quadrupole	GC-MS & LC-MS	14627
QP8000 (Replacement multiplier)	Quadrupole	GC-MS & LC-MS	14625
QP5000	Quadrupole	GC-MS	14533
QP5050A (Initial Installation - includes mount)	Quadrupole	GC-MS	14627
QP5050A (Replacement multiplier)	Quadrupole	GC-MS	14625
Thermo Electron			
4000 (PPINICI)	Quadrupole	GC-MS	14139
Bench-top ion pre-GCQ	Ion Trap	GC-MS	14138
Varian			
Saturn (Pre-2000)	Ion Trap	GC-MS	14138
Saturn 2000, 2100 & 2200	Ion Trap	GC-MS	14147

MAGNETIC SECTOR

Instrument	Analyzer Type	Part No.
Cameca		
SIMS 3F & 4F	SIMS	14133
SIMS 5F & 6F	SIMS	14133H
JEOL		
AX & SX Series	Multiple	14185
Kratos		
MS25, MS50 & MS80	Multiple	14132
VG Analytical		
ZAB, 7070 Series	Magnetic Sector	14130

MS: ELECTRON MULTIPLIERS

MAGNETIC SECTOR Continued

Instrument	Analyzer Type	Part No.
Thermo Electron MAT		
Neptune	Multiple	14180H
MAT 262	Multiple	14150HM9
VG Analytical		
ZAB & 7070 Series	Multiple	14130
Inficon (Balzers)		
SEV 217	SIMS	14140
Nu Instruments		
Nu Plasma	Magnetic Sector	14143
Nu Plasma with Filter	Magnetic Sector	14144
Nu AttoM	Magnetic Sector	14144

ICP-MS

Instrument	Analyzer Type	Part No.
Agilent Technologies		
4500	Quadrupole	14573
7500	Quadrupole	14222
GBC		
Optimass	TOF	14834H
LECO		
Renaissance	TOF	14833H
PE-Sciex		
ELAN 500	Quadrupole	14561
ELAN 5000	Quadrupole	14570 *
ELAN 5000A	Quadrupole	14571
ELAN 6000, 6100 & DRC	Quadrupole	14210
Thermo Electron		
PQ (12-12 rods)	Quadrupole	14562
PQ (SXP rods)	Quadrupole	14562A
PQ-3, Excel (Sequential)	Quadrupole	14562A
PQ-3, Excel (Simultaneous)	Quadrupole	14214
POEMS	Quadrupole	14574
Varian		
Ultramass	Quadrupole	14566
VG Elemental		
Genesis	Quadrupole	14568H
PQ3	Quadrupole	14214

*First time installation of ETP Multiplier requires adaptor obtained from PerkinElmer.

TOF-MS

Instrument	Analyzer Type	Part No.
Bruker		
Various TOF	TOF	14820
Comstock		
MiniTOF	TOF	14824
GBC		
Optimass	TOF	14834H
Kratos		
Kompact MALDI (I-IV)	TOF	14820
LECO		
Renaissance	TOF	14833H
Sensar / Larson-Davis		
TOF 2000	TOF	14823H

APPENDIX A: GC COLUMN SELECTION BY APPLICATION

Application	Phase													
	SOLGEL-1ms BP1	BPX1 BP1-PONA	BPX5 BP5	HT5	HT8	BPX35	BPX-Volatiles BP624	BP10	BPX50	SOLGEL-WAX BP20	BP21	BPX70	CYDEX-B	BPX90
Acidic/Neutral Drugs			•			•								
Acids			•							•	•			
Alcohols			•				•			•	•			•
Amines Aliphatic			•				•			•				
Amines Aromatic			•			•	•			•				
Antidepressants			•			•				•				
Aromatics - PAH	•		•		•	•			•					•
Aroclors					•									•
Beverages – Alcohols							•			•				
Butter – Fat			•	•										
Chiral Compounds														
Chlorinated Aromatics	•		•			•		•					•	
Cigarette Lighter Fuel			•				•							
Dioxins			•				•		•					
Essential Oils			•							•			•	•
Food – FAME			•							•		•		•
Glucose – Methylated												•		
Herbicides	•		•			•			•			•		
Industrial Solvents							•			•		•		
Ketones						•	•	•	•	•				
Monomers			•							•				
Nitroaromatics	•		•		•	•		•	•					
Organochlorine Pesticides	•		•		•	•		•	•					•
Organophosphorous Pesticides	•		•			•			•					•
Paraffins	•	•	•	•										
PCB's			•		•									•
Petroleum	•	•	•	•										
Phenols			•			•				•	•			•
Phthalates	•		•											
Plant Sterols			•			•			•					
Polymers	•		•	•										
Polywax	•		•	•										
Pyrethroids	•		•			•		•	•					
Racehorse Doping Mixture			•			•								
Sedatives			•			•								
Semivolatiles	•		•											•
Silicon Oil				•			•							
Solvents							•			•				•
Sugars-Alditol Acetates			•							•				
Triglycerides			•	•						•		•		
TRPH	•		•	•										
Volatiles			•				•							
Xylenes	•	•	•	•						•				•

• Indicates recommended phases to be used for the application.

• Indicates phase that can be used for the application

APPENDIX A: REPLACEMENT GC COLUMN REFERENCE GUIDE

Column	Phase Description	Agilent	Altech	Machery Nagel	Perkin Elmer	Pheno- menex	Quadrex	Restek	Supelco	Thermo	Varian/ Chrompack	USP	VCI	Others
BP1	100% Dimethyl Polysiloxane. An industry standard non-polar phase suitable for all routine analyses.	ULTRA 1 HP101 DB-1 SE30	AT-1 EC-1 AT-1MS SE30	OPTIMA 1 OPTIMA TMS PERMABOND SE30	ELITE-1 PE-1 ELITE-XLB	ZB-1 ZB-1	007-1	RTX1MS	MDN-1 EQUITY-1 SP-2100 SE30	TR1	VF-1MS CPSIL5 CB MS	G1, G2, G38, G9	VB-1	OV-1 OV-101
BPX1	100% Dimethyl Polysiloxane A 100% polydimethylsiloxane non-polar column for Simulated Distillation in the petroleum industry. This column is coated with a custom-designed phase which gives low, consistent bleed and is ideal for background subtraction. The column is often used for ASTM methods D2887 and D6352 and has a maximum temperature up to 430°C for the aluminum clad version.	DB1MS HP1MS DB-1HT	AT-1MS	OPTIMA 1 OPTIMA TMS	ELITE-1HT			RTX1MS	MDN-1	TRSD	CPSIL 5CB LOW BLEED/MS			
BPX1-SIMDIST	100% Dimethyl Polysiloxane A 100% polydimethylsiloxane non-polar column for Simulated Distillation in the petroleum industry. This column is coated with a custom-designed phase which gives low, consistent bleed and is ideal for background subtraction. The column is often used for ASTM methods D2887 and D6352 and has a maximum temperature up to 430°C for the aluminum clad version.	DB-2887 HP1 DBHT SIM	AT-2887	OPTIMA 1 OPTIMA TMS	ELITE-SIMDIST ELITE-HT SIMDIST	ZB-1	007-1-10V-1.0	RTX2887	PETROCOL 2887 PETROCOL EX2887	TRSD	CP-SIMDIST			
SOUGEL-1MS	A robust, high temperature non-polar column for mass spectrometers. Better MS library identification. Less bleed – low ion source maintenance. Better sensitivity. Can also be used for all non-MS detectors. No direct equivalents									TR1MS				
BP1-PONA	100% Dimethyl Polysiloxane phase for PONA analysis	HP-PONA DB-PETRO	AT-PETRO		ELITE-PONA	ZB-1	007-1-100-0.5F	RTX1PONA	PETROCOL DH		CPSIL PONA			
BP5	5% Phenyl / 95% Dimethyl Polysiloxane A general purpose phase with excellent high temperature characteristics. Popular column used for a wide variety of applications.	DB5 HP5 ULTRA 2 HP-PASS DB5.6Z5 DB5HT SE54	AT-5 EC-5 AT-5MS SE54	OPTIMA 5 PERMABOND SE52	ELITE-5 PE-2	ZB-5	007-2 007-5	RTX5 XTI-5 RTX5MS	SPB5 MDN5 EQUITY-5 PTES SE54 SAC5 PTESQTM	TR5	CPSIL 8 CB VF5MS	G27, G36	VB-5	SE52 SE54 OV-73
BPX5	5% Phenyl Polysilphenylene-siloxane An MS-Premium, low bleed column with a maximum temperature up to 370°C. Suitable for trace analysis of pesticides, drugs, hydrocarbons and phenols. The BPX5 phase has been designed for robustness and is suitable for over 80% of all routine analyses performed by chromatographers. Direct equivalents highlighted in red. The other closest equivalents are listed, but the exact separation may differ slightly.	DB5MS HP5MS HP5TA	AT-5MS	OPTIMA 5MS	ELITE-5MS	ZB-5 ZB-5MS	007-5MS	RTX5MS RTX5SILM		TR5MS	CPSIL 8 CB MS CPSIL 8 CB LOW BLEED/MS VF-5MS	G36, G27, G41		
HT5	5% Phenyl (equiv.) Polycarborane-siloxane Unique high temperature phase suited for simulated distillation and other petroleum applications. This column is the highest temperature column available with a maximum temperature up to 480°C. This is a unique, ultra high temperature column. No direct equivalents - closest equivalents are listed, but the exact separation may differ slightly.													

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