



# Product Selection Guide



# Welcome to SGE's Product Selection Guide

This SGE Product Selection Guide is designed to be a concise guide to the most popular SGE chromatography and MS products for your laboratory. The content has been organized and presented in a format that we believe will enable you to quickly identify the right product for your application. The Quick Pick section covers the most frequently-used parts and accessories for GC and GC-MS instruments made by Agilent, Perkin Elmer, Varian, Thermo Electron and Shimadzu. The broader range of SGE's major product lines in GC, LC, syringes, accessories, tubing and electron multipliers are organized and color coded in the following sections.

This Product Selection Guide is by no means a comprehensive listing of all SGE products. We suggest that if you require further details about any of our products or capabilities to contact our technical support team, or visit [www.sge.com](http://www.sge.com).



*Founder Ern Dawes making an early glass GC capillary column, 1959.*



*SGE manufacturing facilities.*



*SGE manufacturing facilities.*

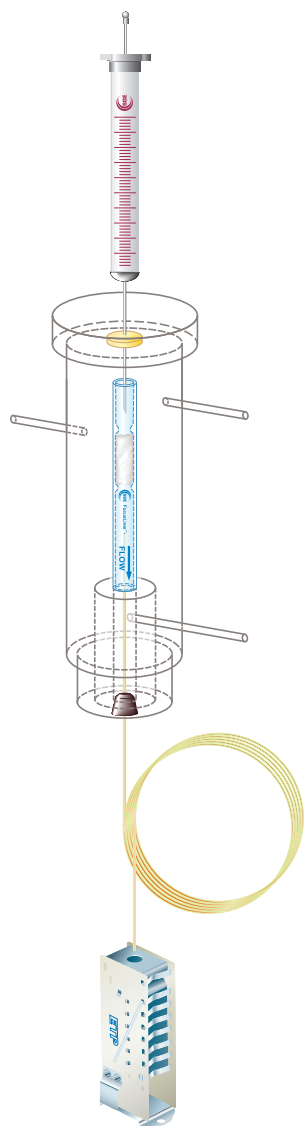
# CONTENTS

<b>QUICK PICKS</b>	By GC make and model	2
<b>SYRINGES</b>	GC Autosampler	12
	Microvolume	15
	Gas Tight	17
	LC Autosampler	18
	LC Manual	20
	Instrument	21
	Special, Valves	22
	Multipacks	23
	Replacement Needles	24
<b>GC CAPILLARY COLUMNS</b>		26
<b>GC CONSUMABLES</b>	Septa, Additional Liners	32
	Additional Ferrules	33
	Unions	35
	Connectors, Nuts	36
<b>GC ACCESSORIES</b>		37
<b>LC</b>	ProteCol™ Capillary & Nano LC	42
	Columns	46
	Accessories	48
<b>TUBING</b>	Fused Silica	49
	PEEKsil™	51
	GLT, Stainless Steel	52
<b>MS</b>	Electron Multipliers	53
<b>APPENDIX A</b>	Column Selection by Application	55
	Replacement Column Reference Guide	56
<b>PRODUCT INDEX</b>		60

# QUICK PICK: AGILENT TECHNOLOGIES GC

## Autosampler Syringes

All needles are 42mm long with a cone point.



Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Pack Size	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
<b>HP 7673, 7683 &amp; 6850 ALS</b>								
<b>Fixed Tapered Needle</b>								
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 <i>Gas Tight</i>	23-26s (0.63/0.47)	10F-HP-GT-0.63/0.47C	002826	1	-	-	031808	2
<b>Fixed Straight Needle</b>								
5µL	26 (0.47)	5F-HP-0.47C	001800	1	-	-	-	-
5µL <sup>(M)</sup>	23 (0.63)	5F-HP-0.63C	001810	1	-	-	-	-
10µL	26 (0.47)	10F-HP-0.47C	002800	1	-	-	-	-
10µL <sup>(M)</sup>	23 (0.63)	10F-HP-0.63C	002810	1	-	-	-	-
10µL <sup>(M)</sup> <i>Gas Tight</i>	23 (0.63)	10F-HP-GT-0.63C	002812	1	-	-	031808	2
<b>Removable Tapered Needle</b>								
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 <i>Gas Tight</i>	23-26s (0.63/0.47)	10R-HP-GT-0.63/0.47C	002829	1	037730	2	031809	2
<b>Removable Straight Needle</b>								
0.5µL	26 (0.47)	0.5BR-HP-0.47C	000400	1	033708	1**	-	-
0.5µL <sup>(M)</sup>	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 <sup>(M)</sup>	23 (0.63)	5R-HP-0.63C	001815	1	036720	2	-	-
10µL	26 (0.47)	10R-HP-0.47C	002805	1	037715	2	-	-
10µL <sup>(M)</sup>	23 (0.63)	10R-HP-0.63C	002815	1	037717	2	-	-
10µL <i>Gas Tight</i>	26 (0.47)	10R-HP-GT-0.47C	002817	1	037715	2	031809	2
10µL <sup>(M)</sup> <i>Gas Tight</i>	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	-	-

<sup>(M)</sup>Suitable for use with the Merlin Microseal™ Injector.

\*\*Denotes Spare Needle and Plunger kit.

## Septa







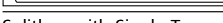
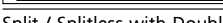
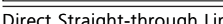



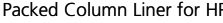
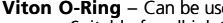
Instrument	Diameter (mm)	Septum Type	Pack Size	Part No.
<b>4890, 5880, 5890, 6850, 6890 &amp; 7890</b>	11	CS	50	041826
	11	TCS	50	041846
	11	Auto-Sep™	25	041872
	11	Auto-Sep T™	25	041882
	11	Auto-Sep T™	100	041883
<b>5700, 5800 &amp; 5900</b>	9.5	CS	50	0418240
	9.5	TCS	50	0418440
	9.5	Auto-Sep™	25	041871
	9.5	Auto-Sep T™	25	041880
<b>5750, 710, 720, 810 &amp; 7610</b>	12.5	CS	50	041828
	12.5	TCS	50	041848
	12.5	Auto-Sep T™	25	041884
<b>7620, 5790, 5880 &amp; 5890</b>	5	CS	50	041820

Cool On-Column

## Electron Multipliers

Instrument	Analyzer Type	Technique	Part No.
<b>Agilent Technologies</b>			
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

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
<b>Deactivated Liners for HP4890, HP5890, 6850, 6890, &amp; 7890</b>					
Split/Splitless FocusLiner™	4.0	6.3	78.5	5	092002
 <b>TOP</b>				25	092219
Split / Splitless Tapered FocusLiner	4.0	6.3	78.5	5	092003
 <b>TOP</b>				25	092011
Split / Splitless FAST FocusLiner	2.3	6.3	78.5	5	092005
 <b>TOP</b>				25	092008
Split / Splitless Tapered FAST FocusLiner	2.3	6.3	78.5	5	092111
 <b>TOP</b>				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*
 <b>TOP</b>				25	092229
Splitless with Single Taper & Quartz Wool	4.0	6.3	78.5	5	092019
 <b>TOP</b>				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
<b>Viton O-Ring</b> – Can be used at temperatures up to 300°C Suitable for all inlet liners above except 092234 & 092235.				10	0726532
<b>Graphite Sealing Ring</b> – 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. 092007F.

## Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
<b>15% Graphite / 85% Vespel® Ferrules</b>				
<b>For Injectors &amp; Detectors at atmospheric pressure e.g. FID</b>				
	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
<b>For GC-MS Interface Connection</b>				
	0.1-0.25mm	0.4mm	10	072663
	0.32mm	0.5mm	10	072654
	0.53mm	0.8mm	10	072655
<b>100% Graphite Ferrules</b>				
<b>Injectors &amp; Detectors at atmospheric pressure e.g. FID (Not for GC-MS)</b>				
	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
<b>SilTite™ Metal Ferrules</b>				
<b>For GC-MS Interface Connection (Starter Kit)</b>				
	0.1-0.25mm	0.4mm	10*	073200
	0.32mm	0.5mm	10*	073201
	0.53mm	0.8mm	10*	073202
<b>For Split / Splitless Injectors (Starter Kit)</b>				
	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
<b>Replacement SilTite™ Metal Ferrules</b>				
<b>For All Connections</b>				
	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
<b>Replacement SilTite™ Nuts</b>				
<b>For GC-MS Interface Connection</b>				
			5	073224
<b>For Split / Splitless Injector</b>				
			5	073226
<b>Replacement SilTite™ Base Seals</b>				
<b>For Split / Splitless Injector</b>				
			2	073400
			10	073401

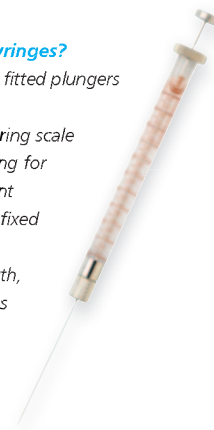
\*Includes 10 ferrules, 2 SilTite™ nuts. # Includes 10 ferrules, 2 SilTite nuts and 2 SilTite Inlet Base Seals.

# QUICK PICK

For SGE's full range of products, visit [www.sge.com](http://www.sge.com)

### Why choose SGE Syringes?

- Feature individually fitted plungers
- Are leak tested
- Feature a hard wearing scale
- Use a frosted backing for clearer measurement
- Have removable or fixed needle options
- Needle gauge, length, style and tip options



### Why choose SGE Septa?

- Low bleed
- Optimized for instruments and applications
- Wide range to suit your equipment



### Why choose SGE deactivated Liners?

- Liners deactivated using a gas phase deactivation
- Supplied in blister packs to prevent contamination
- FocusLiners™ provide superior reproducibility compared to other liners



### Why Choose SilTite™ Ferrules?

- 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
- Patent Pending



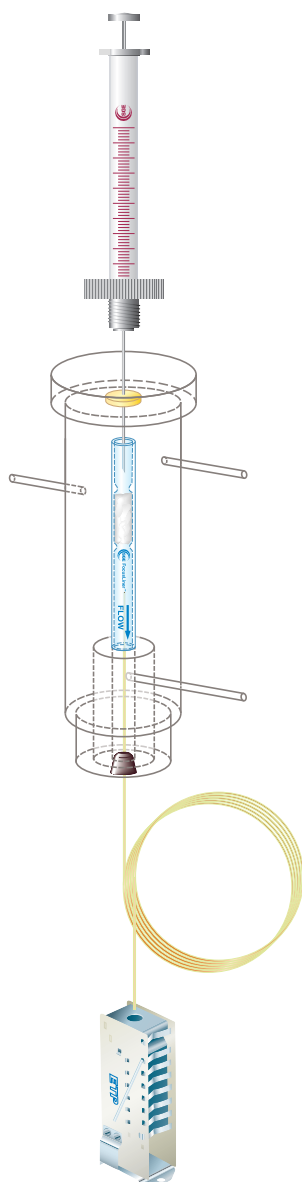
# QUICK PICK: PERKIN ELMER GC

## 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
<b>Autosystem Fixed Needle</b>								
5µL	26 (0.47)	5F-PE-0.47C	001953	1	-	-	-	-
5µL	23 (0.63)	5F-PE-0.63C	001954	1	-	-	-	-
5µL <i>Gas Tight</i>	26 (0.47)	5F-PE-GT-0.47C	001955	1	-	-	031807	2
5µL <i>Gas Tight</i>	23 (0.63)	5F-PE-GT-0.63C	001957	1	-	-	031807	2
50µL	23 (0.63)	50F-PE-0.63C	004670	1	-	-	-	-
<b>Removable Needle</b>								
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



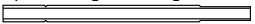
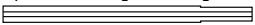







Instrument	Diameter (mm)	Septum Type	Pack Size	Part No.
<b>Sigma, 900, 990, 3920, 8300, 8400, 8500, AutoSystem &amp; Clarus 400, 500 &amp; 600</b>				
	11	CS	50	041826
	11	TCS	50	041846
	11	Auto-Sep™	25	041872
	11	Auto-Sep T™	25	041882
	11	Auto-Sep T™	100	041883

## Ferrules

Material	Column ID	Size of Nut	Ferrule ID	Pack Size	Part No.
<b>15% Graphite / 85% Vespel® Ferrules</b>					
<b>For Injectors &amp; Detectors at atmospheric pressure e.g. FID</b>					
	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
<b>100% Graphite Ferrules</b>					
<b>For Injectors &amp; Detectors at atmospheric pressure e.g. FID (Not for GC-MS)</b>					
	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
<b>SilTite™ Metal Ferrules</b>					
<b>For GC-MS Interface Connection (Starter Kit)</b>					
	0.1-0.25mm	-	0.4mm	10*	073200
	0.32mm	-	0.5mm	10*	073201
	0.53mm	-	0.8mm	10*	073202
<b>Replacement SilTite™ Ferrules</b>					
<b>For GC-MS Interface Connection</b>					
	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
<b>Replacement SilTite™ Nuts</b>					
		-	-	5	073224

\*Includes 10 ferrules, 2 SilTite™ nuts.

## Inlet Liners

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
<b>AutoSystem™ &amp; Clarus 400, 500 &amp; 600</b>					
Split / Splitless FocusLiner™ 	4.0	6.2	92	5	092092
				25	09209225
Split / Splitless Tapered FocusLiner™ 	4.0	6.2	92	5	092095
				25	09209525
Split, Straight-through Liner TOP 	4.0	6.2	92	5	092100*
Splitless, Straight-through Liner TOP 	2.0	6.2	92	5	092103
<b>AutoSystem™ &amp; Clarus 500/600P</b>					
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
<b>8000 &amp; Sigma Series</b>					
Split / Splitless 	3.0	5.0	100	5	092091
Splitless with Single Taper 	2.0	5.0	100	5	092094
<b>PTV Liner</b>					
Recessed Gooseneck 	1.0	2.0	88	5	092097
<b>Viton O-Ring</b> – Can be used at temperatures up to 300°C For 6.2mm OD Inlet Liners.					
				10	0726536
* = Also available in <i>FluoroLiner</i> : a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092100F.					

## Electron Multipliers

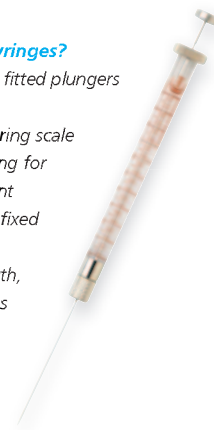
MS Description	Analyzer Type	Technique	Part No.
Ion Trap GC-MS	Ion Trap	GC-MS	14138
Q-Mass	Quadrupole	GC-MS	14532

# QUICK PICK

For SGE's full range of products, visit [www.sge.com](http://www.sge.com)

### Why choose SGE Syringes?

- Feature individually fitted plungers
- Are leak tested
- Feature a hard wearing scale
- Use a frosted backing for clearer measurement
- Have removable or fixed needle options
- Needle gauge, length, style and tip options



### Why choose SGE Septa?

- Low bleed
- Optimized for instruments and applications
- Wide range to suit your equipment



### Why choose SGE deactivated Liners?

- Liners deactivated using a gas phase deactivation
- Supplied in blister packs to prevent contamination
- FocusLiners™ provide superior reproducibility compared to other liners



### Why Choose SilTite™ Ferrules?

- 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
- Patent Pending





# QUICK PICK: SHIMADZU GC

## Autosampler Syringes

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Pack Size	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
<b>AOC14, AOC17 and AOC20</b>								
<b>Fixed Needle</b>								
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
<b>Removable Needle</b>								
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**	-	-
0.5µL	23-26s (0.63/0.47)	0.5BNR-S-0.63/0.47C	000450	1	033730	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. All needles are 42mm long with a cone point style.

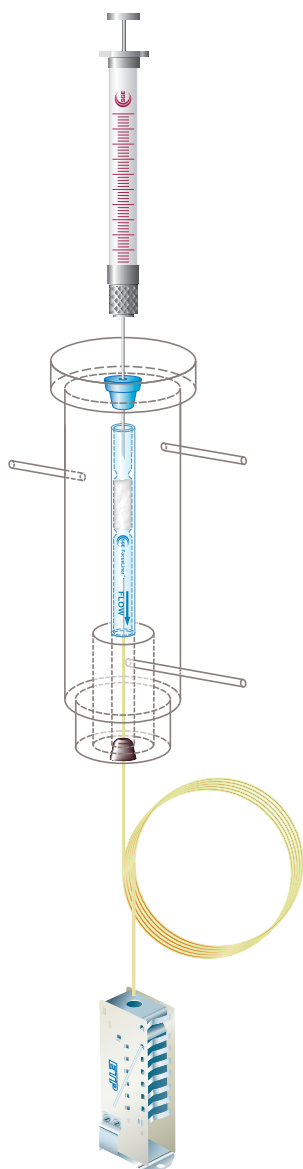
## Septa

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

## Ferrules

Column ID	Description	Pack Size	Part No.
<b>GC14A, GC17A, GC2010 and GC2014 Detector / Injectors (Not for MS interfaces or QP2010 Injector)</b>			
0.10-0.32mm ID columns	100% Graphite	10	0726080
0.45-0.53mm ID columns	100% Graphite	10	0726082
5mm OD packed columns	100% Graphite	10	0726001
0.10-0.25mm ID columns	SilTite Metal - Initial Installation	10*	073350
0.10-0.25mm ID columns	SilTite Ferrules	10	073227
0.32mm ID columns	SilTite Metal - Initial Installation	10*	073351
0.32mm ID columns	SilTite Ferrules	10	073228
0.45-0.53mm ID columns	SilTite Metal - Initial Installation	10*	073352
0.53mm ID columns	SilTite Ferrules	10	073229
	SilTite Metal Nuts - Slotted	5	073232
<b>QP5000/5050 Standard MS Interface</b>			
QP5000-I 0.10-0.25mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	0726563
QP5000-I 0.32mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	0726564
QP5000-II & QP5050 0.10-0.25mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	0726561
QP5000-II & QP5051 0.32mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	0726562
0.10-0.25mm ID columns	SilTite Metal - Initial Installation	10*	073204
0.10-0.25mm ID columns	SilTite Ferrules	10	073227
0.32mm ID columns	SilTite Metal - Initial Installation	10*	073205
0.32mm ID columns	SilTite Ferrules	10	073228
0.53mm ID columns	SilTite Metal - Initial Installation	10*	073206
0.53mm ID columns	SilTite Ferrules	10	073229
	SilTite Metal Nuts-QP5000/5050 Standard MS interface	5	073233
<b>QP5000/5050 Wide Bore MS Interface, QP2010 Injector and QP2010 Standard MS Interface</b>			
0.10-0.25mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	072663
0.32mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	072654
0.45-0.53mm ID columns	15% Graphite/ 85% Vespel® Ferrules	10	072655
0.10-0.25mm ID columns	SilTite Metal - Initial Installation	10*	073200
0.10-0.25mm ID columns	SilTite Ferrules	10	073220
0.32mm ID columns	SilTite Metal - Initial Installation	10*	073201
0.32mm ID columns	SilTite Ferrules	10	073221
0.45-0.53mm ID columns	SilTite Metal - Initial Installation	10*	073202
0.45-0.53mm ID columns	SilTite Ferrules	10	073222
	SilTite Metal Nuts	5	073224

\* Includes 10 ferrules, 2 SilTite™ nuts.







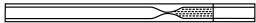













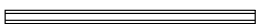
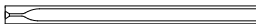

## Ferrules continued

Material	Pack Size	Part No.
<b>Replacement SilTite™ Nuts</b>		
For 2010 GC-MS System	5	073224
For 2010 GC-MS System with QP5000 series MS	5	073224
For 2010/2014 GC Injectors and atmospheric detectors	5	073224
QP5000 Jet Separator MS Interface	5	073224
QP5000 Direct MS Interface	5	073233
For All Injectors Jet Separator (Starter Kit), except 2010/2014	5	073232

# QUICK PICK

For SGE's full range of products, visit [www.sge.com](http://www.sge.com)

## Inlet Liners

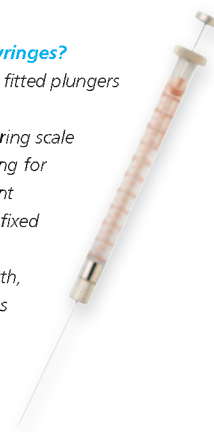
Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
<b>17A (SP-17 Injector) &amp; 2014</b>					
Split / Splitless FocusLiner™ 	3.4	5.0	95	5	092062
Split / Splitless Tapered FocusLiner 	3.4	5.0	95	5	092068
Split / Splitless with Recessed Gooseneck & Quartz Wool 	3.4	5.0	95	5	092061
Split, Straight-through 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
<b>14, 15A &amp; 16 (SPL-14 Injector)</b>					
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
<b>2010 (SPL-2010 Injector)</b>					
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*
<b>Graphite Sealing Ring</b> – 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
<b>Viton O-Ring</b> – 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. 092085F.

† = Can be used in 2014 injector.

### Why choose SGE Syringes?

- Feature individually fitted plungers
- Are leak tested
- Feature a hard wearing scale
- Use a frosted backing for clearer measurement
- Have removable or fixed needle options
- Needle gauge, length, style and tip options



### Why choose SGE Septa?

- Low bleed
- Optimized for instruments and applications
- Wide range to suit your equipment



### Why choose SGE deactivated Liners?

- Liners deactivated using a gas phase deactivation
- Supplied in blister packs to prevent contamination
- FocusLiners™ provide superior reproducibility compared to other liners



### Why Choose SilTite™ Ferrules?

- 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
- Patent Pending



## Electron Multipliers

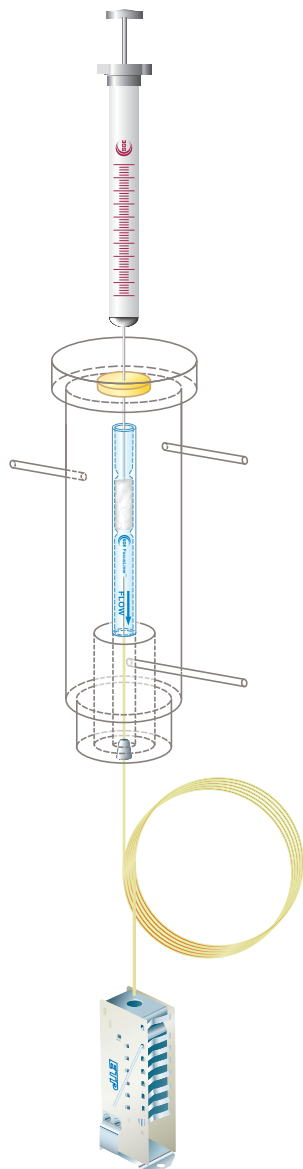
MS Description	Analyzer Type	Technique	Part No.
QP8000 (Replacement multiplier)	Quadrupole	GC-MS	14625
QP5000	Quadrupole	GC-MS	14533
QP5050A (Initial Installation – includes mount)	Quadrupole	GC-MS	14627
QP5050A (Replacement multiplier)	Quadrupole	GC-MS	14625

# QUICK PICK: THERMO ELECTRON GC

## Thermo Scientific / CE Instruments / Fisons Autosampler Syringes

All needles have a cone point style.

Autosampler				Needle Specifications						
TriPlus	AS3000	AS2000	AS200/800	Volume	Length (mm)	Gauge (OD)	Syringe Code	Syringe Part No.	Needle Part No.	Pack Size
				<b>Fixed Needle</b>						
•		•		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	-	-
				<b>Removable Needle</b>						
•	•	•		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.
<b>8000 Series, FOCUS, TRACE/ULTRA GC™</b>				
	17	TCS	50	0418491
	17	Auto-Sep T™	25	041886

## Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
<b>15% Graphite / 85% Vespel® Ferrules</b>				
<b>For All Injectors &amp; Detectors (Not for 8000 Series, Focus, Trace/Ultra GC)</b>				
	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
<b>For All Focus, Trace/Ultra Injectors &amp; Detectors at atmospheric pressure e.g. FID (Not for GC-MS)</b>				
	0.1-0.25mm	0.4mm	10#	072696
	0.32mm	0.5mm	10#	072697
	0.53mm	0.8mm	10#	072698
<b>Brass Nut for Focus, Trace/Ultra GC Injectors &amp; Non-MS Detectors</b>			2	1034085
<b>100% Graphite Ferrules</b>				
<b>For Injectors &amp; Detectors at atmospheric pressure e.g. FID (Not for GC-MS)</b>				
	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
<b>SilTite™ Metal Ferrules</b>				
<b>For GC-MS Interface Connections (Starter Kit)</b>				
	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
<b>Replacement SilTite™ Metal Ferrules</b>				
<b>For All GC-MS Interface Connections</b>				
	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
<b>Replacement SilTite™ Nuts</b>			5	073230



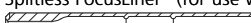
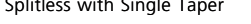
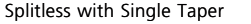

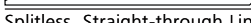
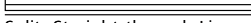
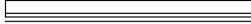

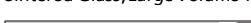



# To be used in combination with brass nut (Part No. 1034085)

\* Includes 10 ferrules, 2 SilTite™ nuts.

# QUICK PICK

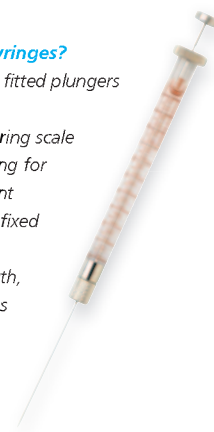
For SGE's full range of products, visit [www.sge.com](http://www.sge.com)

## Inlet Liners

Description	ID (mm)	OD (mm)	Length (mm)	Pack Size	Part No.
<b>ThermoQuest 8000, FOCUS &amp; TRACE/ULTRA™</b>					
Splitless FocusLiner™ (for use with 70mm Needle)  <b>TOP</b>	5.0	8.0	105	5	092045
Split FocusLiner (for use with 50mm Needle)  <b>TOP</b>	5.0	8.0	105	5	092048
Splitless FocusLiner™ (for use with 50mm Needle)  <b>TOP</b>	5.0	8.0	105	5	092049*
Splitless with Single Taper  <b>TOP</b>	3.0	8.0	105	5	092141*
Splitless with Single Taper  <b>TOP</b>	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  <b>TOP</b>	0.78/1.8	2.75	120	5	092155
<b>PTV Liner</b>					
Trace 2000 PTV Liner  <b>TOP</b>	1.75	2.75	120	5	092142
<b>Mega Series 4000, 5000 &amp; 6000</b>					
Split / Splitless with Recessed Gooseneck & 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
<b>Graphite Sealing Ring</b>					
For 8000, FOCUS & TRACE/ULTRA™ GCs	8.0			10	0726004
<b>Thermo Scientific Finnigan 9001 and GCQ</b>					
Thermo Scientific Finnigan 9001 & GCQ GC's accept all Agilent Technologies 6.3mm OD Liners.					
* = Also available in <i>FluoroLiner</i> : a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092049F.					

### Why choose SGE Syringes?

- Feature individually fitted plungers
- Are leak tested
- Feature a hard wearing scale
- Use a frosted backing for clearer measurement
- Have removable or fixed needle options
- Needle gauge, length, style and tip options



### Why choose SGE Septa?

- Low bleed
- Optimized for instruments and applications
- Wide range to suit your equipment



### Why choose SGE deactivated Liners?

- Liners deactivated using a gas phase deactivation
- Supplied in blister packs to prevent contamination
- FocusLiners™ provide superior reproducibility compared to other liners



### Why Choose SilTite™ Ferrules?

- 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
- 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
<b>Varian 8035, 8100 and 8200</b>										
<b>Fixed Needle</b>										
10µL <i>Gas Tight</i>	53	25 (0.5)	S/Hole	10F-GT-VA8X-II	002923	1	-	-	031218	1
<b>Removable Needle</b>										
1µL*	51	26 (0.47)	Cone	1BR-VA8X	000655	1	034720	1**	-	-
10µL <i>Gas Tight</i>	53	25 (0.5)	S/Hole	10R-GT-VA8X-II	002924	1	037777	1	031218	1
<b>Needle Alternatives for P/N 002924</b>										
	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 <i>Gas Tight</i>	53	25 (0.5)	S/Hole	100R-GT-VA8X	005921	1	038745	1	031824	1
<b>Varian CP-8400/8410, CP-9010/9050</b>										
<b>Fixed Needle</b>										
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	-	-	-	-
<b>Removable Needle</b>										
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.

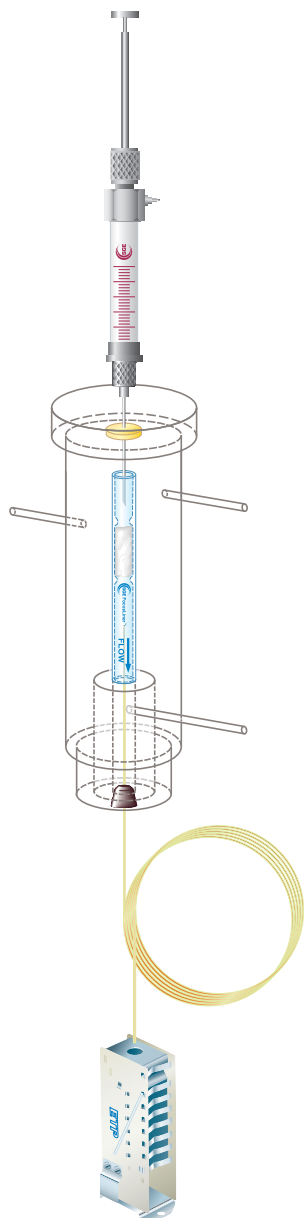
## Septa

Instrument	Diameter (mm)	Septum Type	Pack Size	Part No.
<b>1177 Injector</b>	9	CS	50	041824
	9	TCS	50	041844
	9	TCS Pre-drilled	50	041854
	9	Auto-Sep T™	25	041879
<b>1040, 1041, 1060 &amp; 1061 Injectors</b>	9.5	CS	50	0418240
	9.5	TCS	50	0418440
	9.5	Auto-Sep™	25	041871
	9.5	Auto-Sep T™	100	041881
<b>1075, 1077, 1078, 1079 Injectors &amp; 1093, 1094 SPI Injectors</b>	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

## Ferrules

Material	Column ID	Ferrule ID	Pack Size	Part No.
<b>15% Graphite / 85% Vespel® Ferrules</b>				
<b>For GC-MS &amp; Detectors at atmospheric pressure e.g. FID</b>				
	0.1-0.25mm	0.4mm	10	072663
	0.32mm	0.5mm	10	072654
	0.53mm	0.8mm	10	072655
<b>Packed Columns</b>				
	1/8" OD Packed Columns	1/8"	10	072669
	1/4" OD Packed Columns	1/4"	10	072667
<b>100% Graphite Ferrules – For Injectors &amp; Detectors at atmospheric pressure e.g. FID</b>				
	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
<b>SilTite™ Metal Ferrules – For GC-MS Interface Connection (Starter Kit)</b>				
	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

\*Includes 10 ferrules, 2 SilTite™ nuts.





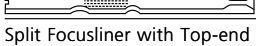
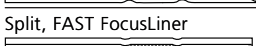
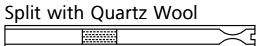
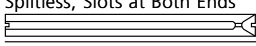
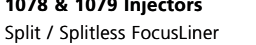

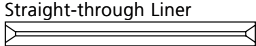
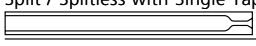
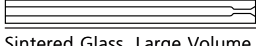


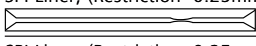


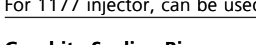
## Ferrules continued

Material	Column ID	Ferrule ID	Pack Size	Part No.
<b>Nuts for Varian Injector</b>			2	1034060
<b>Replacement SilTite™ Ferrules For GC-MS Interface Connection</b>				
	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
<b>Replacement SilTite™ Nuts</b>			5	073231

# QUICK PICK

For SGE's full range of products, visit [www.sge.com](http://www.sge.com)

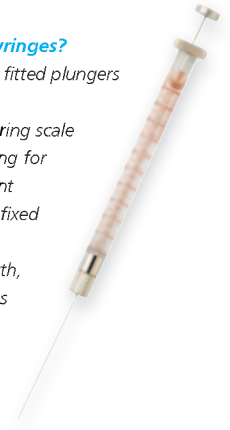
## Inlet Liners

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

\* = Also available in *FluoroLiner*: a fluoro deactivation treatment. To order, add "F" at the end of the part number, e.g. 092038F.

### Why choose SGE Syringes?

- Feature individually fitted plungers
- Are leak tested
- Feature a hard wearing scale
- Use a frosted backing for clearer measurement
- Have removable or fixed needle options
- Needle gauge, length, style and tip options



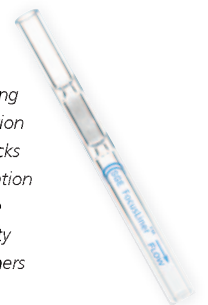
### Why choose SGE Septa?

- Low bleed
- Optimized for instruments and applications
- Wide range to suit your equipment



### Why choose SGE deactivated Liners?

- Liners deactivated using a gas phase deactivation
- Supplied in blister packs to prevent contamination
- FocusLiners™ provide superior reproducibility compared to other liners



### Why Choose SilTite™ Ferrules?

- 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
- Patent Pending



## Electron Multipliers

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

# 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
<b>Agilent 7670</b>							
<b>Removable Needle</b>							
1µL	23 (0.63)	1BR-F5	0000585	034705	1**	-	-
<b>Agilent 7673, 7683 &amp; 68560 ALS</b>							
<b>Fixed Tapered Needle</b>							
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
<b>Fixed Straight Needle</b>							
5µL	26 (0.47)	5F-HP-0.47C	001800	-	-	-	-
5µL <sup>(M)</sup>	23 (0.63)	5F-HP-0.63C	001810	-	-	-	-
10µL	26 (0.47)	10F-HP-0.47C	002800	-	-	-	-
10µL <sup>(M)</sup>	23 (0.63)	10F-HP-0.63C	002810	-	-	-	-
10µL <sup>(M)</sup> Gas Tight	23 (0.63)	10F-HP-GT-0.63C	002812	-	-	031808	2
<b>Fixed Needle – SuperFlex™ Plunger</b>							
10µL	26 (0.47)	10FX-HP-0.47	002830	-	-	-	-
10µL	23 (0.63)	10FX-HP-0.63	002835	-	-	-	-
<b>Removable Tapered Needle</b>							
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 <sup>(M)</sup> Gas Tight	23-26s (0.63/0.47)	10R-HP-GT-0.63/0.47C	002829	037730	2	031809	2
<b>Removable Straight Needle</b>							
0.5µL	26 (0.47)	0.5BR-HP-0.47C	000400	033708	1**	-	-
0.5µL <sup>(M)</sup>	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 <sup>(M)</sup>	23 (0.63)	5R-HP-0.63C	001815	036720	2	-	-
10µL	26 (0.47)	10R-HP-0.47C	002805	037715	2	-	-
10µL <sup>(M)</sup>	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 <sup>(M)</sup> Gas Tight	23 (0.63)	10R-HP-GT-0.63C	002818	037717	2	031809	2
25µL <sup>(M)</sup>	23 (0.63)	25R-HP-0.63C	003665	038717	2	-	-
50µL <sup>(M)</sup>	23 (0.63)	50R-HP-0.63C	004665	038717	2	-	-
100µL <sup>(M)</sup>	23 (0.63)	100R-HP-0.63C	005665	038717	2	-	-
250µL <sup>(M)</sup>	23 (0.63)	250R-HP-0.63C	006665	038717	2	-	-
<b>Wide Bore Needle</b>							
(for use with 10µL syringe only)	23 (0.63)/0.15 ID	N10-HP-0.63(0.15)C	-	037725	2	-	-
<b>Removable Needle – SuperFlex™ plunger</b>							
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 <sup>(M)</sup>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
<b>AS100, AS2000 and AS8300</b>							
<b>Removable Needle – 78mm long with a dome point style</b>							
3µL	26 (0.47)	3R-PS-0.47	000700	035980	2	–	–
<b>Autosystem</b>							
<b>Fixed Needle – 70mm long with a cone point style</b>							
5µL	26 (0.47)	5F-PE-0.47C	001953	–	–	–	–
5µL	23 (0.63)	5F-PE-0.63C	001954	–	–	–	–
5µL Gas Tight	26 (0.47)	5F-PE-GT-0.47C	001955	–	–	031807	2
5µL Gas Tight	23 (0.63)	5F-PE-GT-0.63C	001957	–	–	031807	2
50µL	23 (0.63)	50F-PE-0.63C	004670	–	–	–	–
<b>Removable Needle</b>							
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
<b>AOC9</b>							
<b>Removable Needle – 50mm long with a cone point style</b>							
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	–	–
<b>AOC14, AOC17and AOC20</b>							
<b>Fixed Needle – 42mm long with a cone point style</b>							
5µL	26 (0.47)	5F-S-0.47C	001987	–	–	–	–
5µL	23 (0.63)	5F-S-0.63C	001988	–	–	–	–
250µL Gas Tight	23 (0.63)	250F-S-GT-0.63C	006682	–	–	031828	1
<b>Removable Needle – 42mm long with a cone point style</b>							
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 Gas Tight	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.

	Volume	Length mm	Gauge (OD mm)	Tip Style	Syringe Code	Syringe Part No.	Needle Part No.	Needle	Plunger	Pack Size	
								Pack Size	Part No.		
<b>TriPlus AS3000 AS2000 AS200/800</b>	<b>Fixed Needle</b>										
•	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 Gas Tight	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	–	–	–	–	
<b>Removable Needle</b>											
•	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
<b>Varian 8035, 8100 and 8200</b>									
<b>Removable Needle</b>									
1µL*	51	26 (0.47)	Cone	1BR-VA8X	000655	034720	1**	–	–
10µL <i>Gas Tight</i>	53	25 (0.5)	S/Hole	10R-VA8X-II	002924	037777	1	031218	1
<b>Fixed Needle</b>									
10µL <i>Gas Tight</i>	53	25 (0.5)	S/Hole	10F-VA8X-II	002923	–	–	031218	1
<b>Needle Alternatives for P/N 002924</b>									
	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
<b>Varian CP-8400/8410, CP-9010/9050</b>									
<b>Fixed Needle</b>									
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	–	–	–	–
<b>Removable Needle</b>									
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
<b>Fixed Needle</b>								
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 <i>Gas Tight</i>	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 <i>Gas Tight</i>	26 (0.47)	Cone	25F-CTC-GT-5/0.47C	003700	–	–	0318922	1
25µL <i>Gas Tight</i>	23 (0.63)	Cone	25F-C/T-GT-5/0.63C	003987	–	–	031817	1
100µL <i>Gas Tight</i>	26 (0.47)	Cone	100F-C/T-GT-5/0.47C	005700	–	–	0318924	1
100µL <i>Gas Tight</i>	23 (0.63)	Cone	100F-C/T-GT-5/0.63C	005335	–	–	0318261	1
250µL <i>Gas Tight</i>	26 (0.47)	Cone	250F-CTC-GT-5/0.47C	006700	–	–	0318926	1
500µL <i>Gas Tight</i>	26 (0.47)	Cone	500F-CTC-GT-5/0.47C	007700	–	–	0318928	1
<b>Removable Needle</b>								
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 <i>Gas Tight</i>	26 (0.47)	Cone	10R-C/T-GT-5/0.47C	002985	037785	2	0318922	2
25µL <i>Gas Tight</i>	26 (0.47)	S/Hole	25R-C/T-GT-5/0.47H	003988	038749	2	031816	1
100µL <i>Gas Tight</i>	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.
<b>Plunger-in-needle - 6.5mm OD Barrel</b>						
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**
<b>Plunger-in-needle - 8mm OD Barrel</b>						
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**
<b>Plunger-in-needle - 6.5mm OD Barrel with Repeating Adaptor</b>						
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**
<b>Plunger-in-needle - 8mm OD Barrel with Repeating Adaptor</b>						
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.
<b>Fixed Needle - Plunger Protection Syringes</b>						
5µL	50	26 (0.47)	Bevel	5F	001000	-
5µL	70	26 (0.47)	Bevel	5F-7	001002	-
5µL <sup>(M)</sup>	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 <sup>(M)</sup>	42	23 (0.63)	Cone	10F-4.4/0.63C	002839	-
<b>Fixed Needle - Superflex™ Flexible Plunger</b>						
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 <sup>(M)</sup>	50	23 (0.63)	Cone	10FX-5/0.63C	002108*	-
<b>Fixed Needle - Guided Plunger</b>						
5µL	50	26 (0.47)	Bevel	5F-GP	001400	-
10µL	50	26 (0.47)	Bevel	10F-GP	002400	-
<b>Fixed Needle - 6.5mm OD Barrel with Repeating Adaptor</b>						
10µL	50	26 (0.47)	Bevel	10F-RA6	002040	-

\* See page 23 for multipacks listing. <sup>(M)</sup>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.
<b>Removable Needle - Plunger Protection</b>					
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
<b>Removable Needle - SuperfleX™ Flexible Plunger</b>					
5µL	50	26 (0.47)	5RX	001150 *	036110
10µL	50	26 (0.47)	10RX	002150	037110
<b>Removable Needle - Guided Plunger</b>					
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
<b>Removable Needle - Short (Half Scale) Guided Plunger</b>					
5µL	50	26 (0.47)	5R-GPS	001495	036110
<b>Removable Needle - 6.5mm OD Barrel with Repeating Adaptor</b>					
5µL	50	26 (0.47)	5R-RA6	001090	036110
10µL	50	26 (0.47)	10R-RA6	002090	037110
<b>Removable Needle - Guided Plunger &amp; Repeating Adaptor</b>					
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.
<b>Fixed Needle - Standard Plunger</b>					
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	-
<b>Removable Needle - Standard Plunger</b>					
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
<b>Removable Needle - Repeating Adaptor</b>					
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.

Needle Length Volume	Needle Gauge (mm)	Syringe (OD mm)	Syringe Code	Replacement Part No.	Replacement Needle Part No.	Plunger Plunger Part No.	Replacement
							Pack Size
<b>Fixed Needle</b>							
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
<b>Fixed Luer Tip</b>							
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
<b>Fixed Luer Lock</b>							
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
<b>Fixed Luer Lock with Plunger Stop</b>							
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
<b>Removable Needle</b>							
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
<b>Removable Needle - Guided Plunger Syringe</b>							
10µL	50	26 (0.47)	10R-GP-GT	002455	037110	031805	1
<b>Removable Needle - On-column Syringe with Square Cut Stainless Steel Tip</b>							
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.

Needle Length Volume	Needle Gauge (mm)	Syringe (OD mm)	Syringe Code	Replacement Part No.	Replacement Needle Part No.	Plunger Plunger Part No.	Replacement
							Pack Size
<b>Fixed Needle</b>							
1mL	50	22 (0.72)	1MDF-GT	008102	LL	0318441	1
2.5mL	50	22 (0.72)	2.5MDF-GT	008502	LL	0318542	1
<b>Fixed Luer Tip</b>							
1mL	-	-	1MDF-LT-GT	008020	LL	031842	1
2.5mL	-	-	2.5MDF-LT-GT	008420	LL	031852	1
<b>Fixed Luer Lock</b>							
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
<b>Removable Needle</b>							
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
<b>Removable Luer Lock</b>							
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.
<b>HP 1090</b>				
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
<b>Fixed Needle</b>						
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
<b>Removable Needle</b>						
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.
<b>L7200/7250, AS1000/2000/4000</b>				
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.
<b>Series 200</b>				
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
<b>SP8780/8875/8880</b>					
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
<b>AS100/300 &amp; AS1000/3000/3500</b>					
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
<b>WISP</b>					
25µL	1/4-28 UNF screw thread	25D-WISP	003990	031819	1
250µL	1/4-28 UNF screw thread	250D-WISP	006690	031834	1
<b>WISP Dipper Needle</b>		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
<b>Fixed Needle</b>						
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	-	-	-
<b>Fixed Needle - SuperfleX™ Plunger</b>						
10µL	22 (0.028")	10FX-LC	002300*	-	-	-
<b>Removable Needle</b>						
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
<b>Removable Needle - SuperfleX™ Plunger</b>						
10µL	22 (0.028")	10RX-LC	002350	037250	-	-
<b>Removable Needle - with Repeating Adaptor</b>						
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
<b>Removable Needle - with Repeating Adaptor</b>						
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
<b>Fixed Luer Lock</b>						
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.
<b>Pre-fitted with Removable Needle and Valve</b>					
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
<b>Pre-fitted with Luer Lock Valve</b>					
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

<b>Push-pull with needle</b>	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
<b>Push-pull with Luer Lock</b>	25µL-2.5mL	VLL25/2.5M	–	031907	–	–
<b>Push Button with Luer Lock</b>	5mL-2L	VLLMA	–	031910	–	–
<b>Septum</b>	5mL-2L	VLLMA5/2000	–	031911	–	–

### For Luer Lock or Luer Tip Syringes

<b>Push Button with Luer Lock</b>	50µL-2L	SLLV	–	031915	–	–
-----------------------------------	---------	------	---	--------	---	---

\*50mm, 0.63mm OD cone tip needle #50mm, 0.47mm OD cone tip needle

Septum valve for 5mL-2L syringe.

Part No. 031911



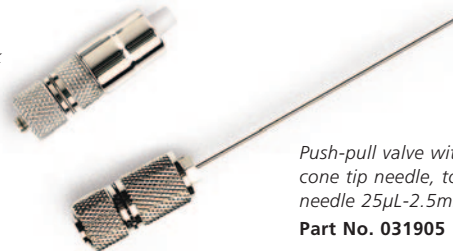
Push button valve with Luer Lock termination. Suits 5mL-2L syringes with removable Luer Lock or removable needle.

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.
<b>Agilent Technologies</b>							
<b>Fixed Needle</b>							
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
<b>Fixed Needle - Tapered</b>							
5µL	42	23-26 (0.63/0.47)	Cone	001821	001822	-	-
10µL	42	23-26 (0.63/0.47)	Cone	002821	002822	-	002824
<b>Gas Tight Plunger - Tapered Needle</b>							
10µL	42	23-26 (0.63/0.47)	Cone	002826	002827	-	-
<b>SuperfleX™ Flexible Plunger</b>							
<b>Fixed Needle</b>							
10µL	42	26 (0.47)	Cone	002830	002831	-	-
	42	23 (0.63)	Cone	002835	002838	-	-
<b>CTC/LEAP &amp; Thermo Finnigan</b>							
<b>Fixed Needle</b>							
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.
<b>Standard Plunger</b>							
<b>Fixed Needle</b>							
10µL	50	26 (0.47)	Bevel	002000	002030	002033	002035
<b>Removable Needle</b>							
10µL	50	26 (0.47)	Bevel	002050	002080	-	-
<b>Gas Tight Plunger</b>							
<b>Fixed Needle</b>							
10µL	50	26 (0.47)	Bevel	002200	002202	-	-
<b>Removable Needle</b>							
10µL	50	26 (0.47)	Bevel	002250	002252	-	-
<b>SuperfleX™ Flexible Plunger</b>							
<b>Fixed Needle</b>							
10µL	50	26 (0.47)	Bevel	002100	002130	-	-
	50	26 (0.47)	Cone	002105	002133	-	-
	50	23 (0.63)	Cone	002108	002135	-	-
<b>Removable Needle</b>							
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.
<b>Standard Plunger</b>							
<b>Fixed Needle</b>							
10µL	2"	22 (0.028")	LC	002301	002315	-	-
<b>SuperfleX™ Flexible Plunger</b>							
<b>Fixed Needle</b>							
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	☐	☐
	5	☐	☐	☐	054081	☐	054082	054085
0.53	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
<b>Polyimide Clad Columns</b>	0.1	0.1		☐	054777
	0.53	0.1		☐	054803
	0.53	0.9		☐	054801
	0.53	2.65		0548025	054802
<b>Aluminum Clad Columns</b>	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.

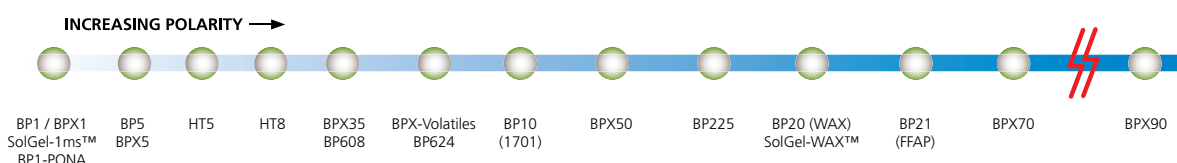
## *forte* BPX5 – 5% Phenyl (equiv.) Polysilphenylene-siloxane

**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 $\mu$ 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 $\mu$ m-3.0 $\mu$ m film: 0°C to 290/300°C

ID mm	Film $\mu$ 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 $\mu$ m-3.0 $\mu$ m film: 0°C to 230/240°C

ID mm	Film $\mu$ 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.

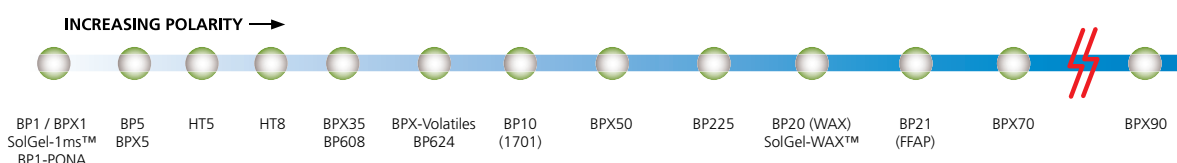
## *forte* BP10 (1701) – 14% Cyanopropylphenyl Polysiloxane

**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 $\mu$ 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		10m	15m	30m	60m
ID mm	Film µm				
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

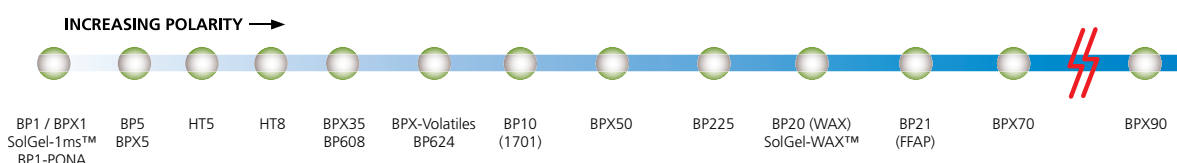
ID mm	Film µm	15m	30m	60m
0.25	0.25	054570	054580	054590
0.32	0.50	054573	054583	054593

## *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)
<b>CS</b>	PTFE coated silicone (one face)	Good	Good	Very good	Excellent	Good	200
<b>TCS</b>	PTFE-coated triple layer silicone	Excellent	Very good	Excellent	Excellent	Very good	280
<b>TCS D</b>	Pre-drilled TCS septa	Excellent	Excellent	Excellent	Excellent	Excellent	280
<b>Auto-Sep™</b>	Silicone	Excellent	Excellent	Very good	Excellent	Very good	320
<b>Auto-Sep™ T</b>	PTFE coated silicone (one face)	Excellent	Excellent	Excellent	Excellent	Excellent	350
<b>Enduro™ Blue</b>	Silicone	Excellent	Excellent	Excellent	Excellent	Excellent	350

Type	Diameter (mm)	CS	Pack size	TCS	Pack size	TCS D	Pack size	Auto-Sep™	Pack size	Auto-Sep™ T	Pack size
<b>4</b>						0418490	5				
<b>5</b>		041820	50	–		041850	50	–		–	
<b>6</b>		041821	50	041841	50	–		–		–	
<b>7</b>		041822	50	0418421	10	041852	50	041873	25	041878	25
				041842	50						
<b>8</b>		041823	50	041843	50	–		0418745	5	–	
<b>9</b>		041824	50	041844	50	041854	50	–		041879	25
<b>9.5</b>		0418240	50	0418440	50	0418540	50	041871	25	041880	25
								0418715	5	041881	100
<b>10</b>		041825	50	041845	50	041855	50	–		–	
<b>11</b>		041826	50	041846	50	041856	50	041872	25	041882	25
										041883	100
<b>11.5</b>		041827	50	041847	50	–		–		–	
<b>12.5</b>		041828	50	041848	50	–		–		041884	25
<b>15</b>		041829	50	–		–		–		–	
<b>17</b>				0418491	50	–		–		041886	25
<b>Enduro™ Blue Shimadzu Plug</b>		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.
<b>AC Control Injector</b>					
AC Control Sim Dist Liner for Programmed Injector 1.6		3.0	73	10	092210
				25	092211
<b>Gerstel CIS 4 Injector</b>					
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		100%	15% Graphite	100%
Style	Hole ID	Graphite	85% Vespel®	Vespel
<b>Straight</b>	1/16"	072623	072657	072684
<b>Sealing Ring</b>	1/16"	0726520	072653	–
<b>Reducing</b>	0.2mm	–	0726632	–
	0.3mm	–	072659	–
	0.4mm	–	072663	–
	0.5mm	072627	072654	–
	0.8mm	072626	072655	–
	0.9mm	–	072658	–
	1.0mm	072625	072656	–
<b>Reducing (short)</b>	0.3mm	–	073107	–
	0.4mm	–	073109	–
	0.5mm	072610	073111	–
	0.8mm	072608	073113	–
	1.0mm	072607	–	–
	1.2mm	072606	–	–
<b>2-Hole</b>	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	–
	0.5 & 0.4mm	–	0726642	–
<b>3-Hole</b>	3 x 0.4mm	–	072665	–
<b>No-Hole (Blank)</b>	–	–	072661	0726841
<b>No-Hole (Short &amp; Blank)</b>	–	–	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	Hole ID	100%	15% Graphite	100%
Style		Graphite	85% Vespel®	Vespel
<b>Straight</b>	1/8"	072622	072669	072682
<b>Sealing Ring</b>	1/8"	–	072652	–
<b>Reducing</b>	1/16"	076283	0726701	0726821
	0.4mm	–	0726703	–
	0.5mm	–	0726702	–
	0.8mm	0726270	072671	–
	1.2mm	072628	–	–
	2.4mm	–	0726700	–
<b>Reducing (short)</b>	1.2mm	072609	–	–
<b>2-Hole</b>	2 x 0.8mm	–	072674	–
<b>No-Hole (Blank)</b>	–	–	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
<b>Straight</b>	1/4"	072621	072667	0726810
<b>Sealing Ring</b>	1/4"	0726003	072651	–
<b>Reducing</b>	0.5mm	–	0726660 (2 Pack)	–
	1/16"	0726282	072673	–
	1/8"	0726281	072668	–
	6.0mm	0726212	0726673	0726812
<b>Reducing (short)</b>	1/8"	0726151	–	–
	5/16"	072617	–	–
	6.0mm	072604	–	–
<b>No-Hole (Blank)</b>	–	–	072666	–

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

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

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

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

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

Ferrule Style	Hole ID	Part Number
<b>100% Graphite Straight</b>	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
<b>Replacement Mini Union Nuts</b>		5	103400

## Ferrules for Mini Unions (Supplied in packs of 10)

Ferrule Style	Column ID	Part Number
<b>100% Graphite</b>	0.32mm	072630
	0.53mm	072629
<b>15% Graphite / 85% Vespel®</b>	0.05-0.1mm	072695
	0.1-0.25mm	072696
	0.32mm	072697
	0.53mm	072698
	1/16" hole	072693
	Blank (No-hole)	072694
<b>SilTite Metal</b>	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
<b>Replacement SilTite Mini Union Nuts*</b>		5	073553

\*SilTite nuts must be used with SilTite ferrules

## Stainless Steel Unions

Description	Tubing Size OD	Part No.
<b>Unions</b>	1/16" x 1/16"	103330
	1/8" x 1/8"	101310
	1/4" x 1/4"	101270
<b>Reducing Unions</b>	1/8" x 1/16"	101290
	1/4" x 1/16"	101230
	1/4" x 1/8"	101250
<b>Union Tees</b>	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
<b>Union Tee</b> (Low hold up union uses male nuts)	1/16" x 1/16" x 1/16"	103442
<b>Union Cross</b>	1/16" x 1/16" x 1/16" x 1/16"	1034187
<b>Replacement 100% Graphite Ferrules</b>	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	–	MOVPT	1236071

## Manual On/Off Valve Pneumatic (MOVPT) – Pneumatic Operation

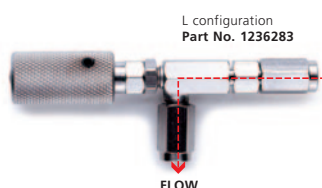
Configuration & Material	Length & Connection	Temp Rating	Vacuum Rated	Pressure Rating	Flow Rate	Valve Code	Part No.
L Single Outlet, Stainless Steel	50mm 1/16"	300°C	Yes	700psi	–	MOVPT	1236091
T Dual Outlet, Stainless Steel	50mm 1/16"	300°C	Yes	700psi	–	MOVPT	1236103
	100mm 1/16"	300°C	Yes	700psi	–	MOVPT(L)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



**Micro Control Valves**

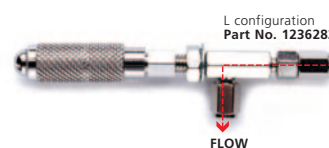
### (MCV)

- 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



### Stainless Steel Manual On/Off Valves (SMOV)

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



### Brass Micro Control Valves (BMCV)

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



### Manual On/Off Valves Pneumatic (MOVPT)

- 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

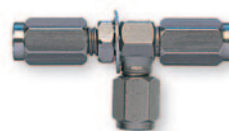
Description	Column ID	Pack Size	Part No.
Fixed Inlet Capillary Column Splitter	0.1-0.25mm	1	123632
	0.32mm	1	123633
	0.45-0.53mm	1	123634
Replacement Ferrules	0.1-0.25mm (2-hole ferrule)	10	072662
	0.32mm (2-hole ferrule)	10	072664
	0.45-0.53mm (1-hole ferrule)	10	072655

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	
<i>Contains:</i> 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

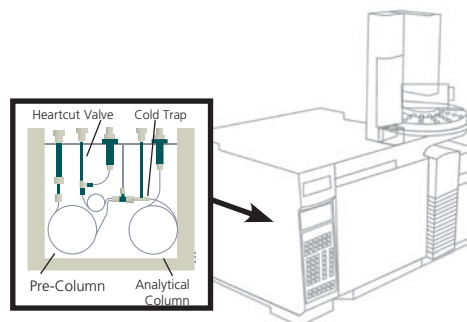
Please refer to [www.sge.com](http://www.sge.com) or contact your local SGE Office for more information on the instruments on this page.

## 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 <sub>2</sub> 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.	
<b>Agilent Technologies (HP)</b>	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	
	<b>PerkinElmer</b>	Turbomass/Gold	Restrictor (Packet of 2)	113460
			Tee	113492
<b>Shimadzu</b>	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	
<b>Thermo Electron</b>	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	
<b>Varian</b>	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:

<b>Varian</b>	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.

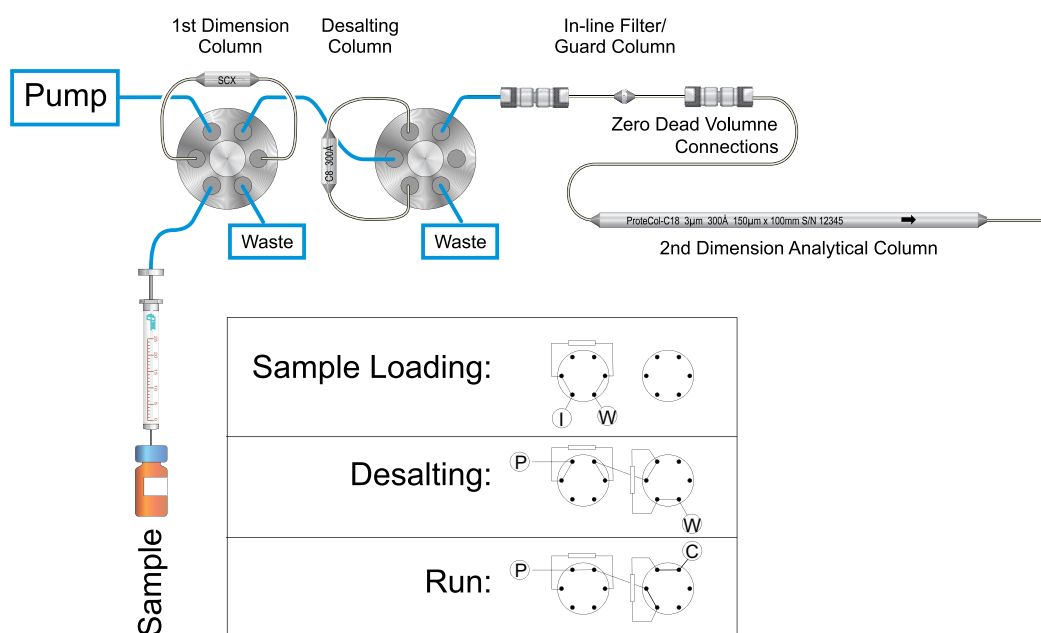


Figure 1. Schematic diagram showing typical implementation of ProteCol™ products.



# 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 $\mu\text{m}$  ID); 0.8-1.5 (150 $\mu\text{m}$  ID); 0.1-0.4 (75 $\mu\text{m}$  ID).

	ID ( $\mu\text{m}$ )	Column Length (mm)	PEEKsil Tail OD (inch)	PEEKsil Tail ID ( $\mu\text{m}$ )	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Packing Material	Part No.
<b>C18</b>	75	100	1/32	25	100	200	C18, 120Å, 3 $\mu\text{m}$	2206252
	75	100	1/32	25	100	200	C18, 300Å, 3 $\mu\text{m}$	2206254
	150	50	1/16	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2104152
	150	100	1/16	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2104252
	150	150	1/16	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2104352
	300	50	1/16	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2102152
	300	100	1/16	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2102252
	300	150	1/16	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2102352
	150	50	1/16	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2104154
	150	100	1/16	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2104254
	150	150	1/16	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2104354
	300	50	1/16	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2102154
	300	100	1/16	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2102254
	300	150	1/16	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2102354
	150	50	1/32	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2204152
	150	100	1/32	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2204252
	150	150	1/32	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2204352
	300	50	1/32	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2202152
	300	100	1/32	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2202252
	300	150	1/32	50	100	200	C18, 120Å, 3 $\mu\text{m}$	2202352
	150	50	1/32	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2204154
150	100	1/32	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2204254	
150	150	1/32	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2204354	
300	50	1/32	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2202154	
300	100	1/32	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2202254	
300	150	1/32	50	100	200	C18, 300Å, 3 $\mu\text{m}$	2202354	
<b>C8</b>	75	100	1/32	25	100	200	C8, 300Å, 3 $\mu\text{m}$	2206258
	150	100	1/32	50	100	200	C8, 300Å, 3 $\mu\text{m}$	2204258
	300	100	1/32	50	100	200	C8, 300Å, 3 $\mu\text{m}$	2202258
<b>C4</b>	75	100	1/32	25	100	200	C4, 300Å, 3 $\mu\text{m}$	2206256
	150	100	1/32	50	100	200	C4, 300Å, 3 $\mu\text{m}$	2204256
	300	100	1/32	50	100	200	C4, 300Å, 3 $\mu\text{m}$	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 ( $\mu\text{m}$ )	Column Length (mm)	PEEKsil Tail OD (inch)	PEEKsil Tail ID ( $\mu\text{m}$ )	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Packing Material	Part No.
<b>C18</b>	75	10	1/32	25	12	50	C18, 120Å, 3 $\mu\text{m}$	222603
	75	10	1/32	25	12	50	C18, 300Å, 3 $\mu\text{m}$	222604
	150	10	1/16	50	12	50	C18, 120Å, 3 $\mu\text{m}$	212403
	300	10	1/16	50	12	50	C18, 120Å, 3 $\mu\text{m}$	212203
	150	10	1/32	50	12	50	C18, 120Å, 3 $\mu\text{m}$	222403
	300	10	1/32	50	12	50	C18, 120Å, 3 $\mu\text{m}$	222203
	150	10	1/16	50	12	50	C18, 300Å, 3 $\mu\text{m}$	212404
	300	10	1/16	50	12	50	C18, 300Å, 3 $\mu\text{m}$	212204
	150	10	1/32	50	12	50	C18, 300Å, 3 $\mu\text{m}$	222404
300	10	1/32	50	12	50	C18, 300Å, 3 $\mu\text{m}$	222204	
<b>C8</b>	75	10	1/32	25	12	50	C8, 300Å, 3 $\mu\text{m}$	222605
	150	10	1/32	50	12	50	C8, 300Å, 3 $\mu\text{m}$	222405
	300	10	1/32	50	12	50	C8, 300Å, 3 $\mu\text{m}$	222205
<b>C4</b>	75	10	1/32	25	12	50	C4, 300Å, 3 $\mu\text{m}$	222606
	150	10	1/32	50	12	50	C4, 300Å, 3 $\mu\text{m}$	222406
	300	10	1/32	50	12	50	C4, 300Å, 3 $\mu\text{m}$	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 $\mu\text{m}$  ID); 0.8-1.5 (150 $\mu\text{m}$  ID); 0.1-0.4 (75 $\mu\text{m}$  ID).

	ID ( $\mu\text{m}$ )	Column Length (mm)	PEEKsil Tail OD (inch)	PEEKsil Tail ID ( $\mu\text{m}$ )	PEEKsil Tail Outlet Length (mm)	PEEKsil Tail Inlet Length (mm)	Packing Material	Part No.
<b>C18</b>	75	10	1/32	25	70	70	C18, 120Å, 3 $\mu\text{m}$	2226052
	75	10	1/32	25	70	70	C18, 300Å, 3 $\mu\text{m}$	2226054
	150	10	1/32	50	70	70	C18, 120Å, 3 $\mu\text{m}$	2224052
	300	10	1/32	50	70	70	C18, 120Å, 3 $\mu\text{m}$	2222052
	150	10	1/32	50	70	70	C18, 300Å, 3 $\mu\text{m}$	2224054
	300	10	1/32	50	70	70	C18, 300Å, 3 $\mu\text{m}$	2222054
	300	5	1/32	50	70	70	C18, 300Å, 3 $\mu\text{m}$	2227054
<b>C8</b>	75	10	1/32	25	70	70	C8, 300Å, 3 $\mu\text{m}$	2226058
	150	10	1/32	50	70	70	C8, 300Å, 3 $\mu\text{m}$	2224058
	300	10	1/32	50	70	70	C8, 300Å, 3 $\mu\text{m}$	2222058
<b>C4</b>	75	10	1/32	25	70	70	C4, 300Å, 3 $\mu\text{m}$	2226056
	150	10	1/32	50	70	70	C4, 300Å, 3 $\mu\text{m}$	2224056
	300	10	1/32	50	70	70	C4, 300Å, 3 $\mu\text{m}$	2222056
<b>IMAC</b>	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 ( $\mu\text{m}$ )	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.
<b>Includes:</b>	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 $\mu\text{m}$ I.D. 100, 200, 300mm lengths x 5 ea.)	212012
ProteCol™ 1/32" tubing kit (50 $\mu\text{m}$ 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 $\mu\text{L}$ flow path volume (0.2 - 10 $\mu\text{L}/\text{min}$ )	222013
25 $\mu\text{L}$ 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.
<b>Includes:</b>	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.
<b>Includes:</b>	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.
<b>Includes:</b>	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.
<b>Wakosil II™ C18 RS</b>					
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
<b>Exsil™ ODS</b>					
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

## C18 - 5 Micron

Packing Type	ID (mm)	Length (mm)	Pore Size (Å)	Column Type	Part No.	
<b>Wakosil II C18 RS</b>						
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	
2.5		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	
<b>Wakosil II C18 AR</b>						
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	
<b>Wakosil II C18 HG</b>						
4.6		150	120	Stainless Steel	2066051	
		250	120	Stainless Steel	2065051	
<b>Nucleosil ODS</b>						
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	
<b>Exsil™ ODS</b>						
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
<b>Exsil SAX (Strong Anion Exchange)</b>					
	4.0	250	80	Glass Lined Tubing	207400
	4.6	150	80	Stainless Steel	206612
		250	80	Stainless Steel	206512
<b>Exsil SCX (Strong Cation Exchange)</b>					
	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
<b>SAX (Strong Anion Exchange) – 5 micron</b>				
	4.0 & 4.6	Exsil	3	205006
<b>SCX (Strong Cation Exchange) – 5 micron</b>				
	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.
	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

### 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

\*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.
<b>Untreated</b>	0.030	0.363	1	062801
	0.050	0.363	1	062803
	0.075	0.363	1	062813
	0.100	0.363	1	062823
<b>ES2 Treated</b>	0.075	0.363	1	062812
<b>ES20 Treated</b>	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](http://www.etpsci.com) for more information on discrete dynode electron multipliers.

## GC-MS & LC-MS

Instrument	Analyzer Type	Technique	Part No.
<b>Agilent Technologies</b>			
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
<b>Inficon</b>			
Auditor	Quadrupole	GC-MS	14532
<b>JEOL</b>			
AX, HX & SX Series	Magnetic Sector	Multiple	14185
K9 (Multiplier only)	Magnetic Sector	GC-MS	14630
K9 (Multiplier & Mount)	Magnetic Sector	GC-MS	14632
<b>Kratos</b>			
MS25, MS50 & MS80	Magnetic Sector	Multiple	14132
<b>PerkinElmer</b>			
Ion Trap GC-MS	Ion Trap	GC-MS	14138
Q-Mass	Quadrupole	GC-MS	14532
<b>PE-Sciex</b>			
API 2000	Quadrupole	LC-MS	14610
API 300 / 3000 / 4000	Quadrupole	LC-MS	14636
<b>Shimadzu</b>			
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
<b>Thermo Electron</b>			
4000 (PPINICI)	Quadrupole	GC-MS	14139
Bench-top ion pre-GCQ	Ion Trap	GC-MS	14138
<b>Varian</b>			
Saturn (Pre-2000)	Ion Trap	GC-MS	14138
Saturn 2000, 2100 & 2200	Ion Trap	GC-MS	14147

## MAGNETIC SECTOR

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

# MS: ELECTRON MULTIPLIERS

## MAGNETIC SECTOR Continued

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

## ICP-MS

Instrument	Analyzer Type	Part No.
<b>Agilent Technologies</b>		
4500	Quadrupole	14573
7500	Quadrupole	14222
<b>GBC</b>		
Optimass	TOF	14834H
<b>LECO</b>		
Renaissance	TOF	14833H
<b>PE-Sciex</b>		
ELAN 500	Quadrupole	14561
ELAN 5000	Quadrupole	14570 *
ELAN 5000A	Quadrupole	14571
ELAN 6000, 6100 & DRC	Quadrupole	14210
<b>Thermo Electron</b>		
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
<b>Varian</b>		
Ultramass	Quadrupole	14566
<b>VG Elemental</b>		
Genesis	Quadrupole	14568H
PQ3	Quadrupole	14214

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

## TOF-MS

Instrument	Analyzer Type	Part No.
<b>Bruker</b>		
Various TOF	TOF	14820
<b>Comstock</b>		
MiniTOF	TOF	14824
<b>GBC</b>		
Optimass	TOF	14834H
<b>Kratos</b>		
Kompact MALDI (I-IV)	TOF	14820
<b>LECO</b>		
Renaissance	TOF	14833H
<b>Sensar / Larson-Davis</b>		
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	Phenomenex	Quadrex	Restek	Supelco	Thermo	Varian/Chrompack	USP	VCI	Others
<b>BP1</b>	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
<b>BPX1</b>	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			
<b>BPX1-SIMDIST</b>	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			
<b>SOILGEL-TMS</b>	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									TRIMS				
<b>BP1-PONA</b>	100% Dimethyl Polysiloxane phase for PONA analysis	HP-PONA DB-PEIRO	AT-PEIRO	ELITE-PONA	ZB-1	007-1-100-0.5F		RTX1PONA	PETROCOL DH		CPSIL PONA			
<b>BP5</b>	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 G2.5 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
<b>BPX5</b>	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, G37, G41		
<b>HT5</b>	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.													



# NOTES



# NOTES

# PRODUCT INDEX

<b>A</b>					
<b>AirSharp</b>					39
<b>Autosampler Syringes</b>					
GC					12-14
LC					18-19
<b>B</b>					
<b>BackFlush (For GC)</b>					39
<b>C</b>					
<b>Capillary GC Columns</b>					
Capillary GC Columns					26-31
100% Dimethyl polysiloxane					26-27
5% Phenyl polysiloxane					27
5% Phenyl Polysilphenylene-siloxane					27
5% Phenyl Polycarborane-siloxane					28
8% Phenyl Polycarborane-siloxane					28
35% Phenyl Polysilphenylene-siloxane					29
14% Cyanopropylphenyl Polysiloxane					29
50% Phenyl Polysilphenylene-siloxane					30
50% Cyanopropylphenyl Polysiloxane					30
70% Cyanopropyl Polysilphenylene-siloxane					31
90% Cyanopropyl Polysilphenylene-siloxane					31
BP1					26
BP1-PONA					26
BP5					27
BP10 (1701)					29
BP20 (WAX)					30
BP21 (FFAP)					31
BP225					30
BP608					29
BP624					29
BPX1					26
BPX5					27
BPX35					28
BPX50					30
BPX70					31
BPX90					31
BPX-Volatiles					29
Cyanopropylphenyl Polysiloxane					28
CYDEX-B					31
HT5					28
HT8					28
Polyethylene Glycol (PEG), BP20 (WAX)					30
Polyethylene Glycol (TPA Treated)					31
Polyethylene in a Sol-Gel matrix					30
GC Column Replacement Guide					56-57
Selection Guide					54
SOLGEL-1ms™					27
SOLGEL-WAX™					30
Treated Polyethylene glycol (PEG), BP21 (FFAP)					31
<b>Capillary Nano &amp; LC Columns</b>					
Protecol™ Guard Column					43
Protecol™ Columns					42-44
Protecol™ Flow Splitters					43
Protecol™ Trap Column					44
<b>Carbon Dioxide Cold Trap</b>					40
<b>Carrier Gas Purifiers</b>					38
<b>Cold Traps</b>					40
<b>Cryogenic Cold Traps</b>					40
<b>Cutting Tools</b>					52
<b>D</b>					
<b>Deactivated Tubing</b>					49
<b>Diluter/Dispenser Syringes</b>					21
<b>E</b>					
<b>Electron Multipliers</b>					
GC-MS					53
LC-MS					53
ICP-MS					54
Magnetic Sector					53-54
TOF-MS					54
<b>Electrophoresis Tubing</b>					50
<b>ETP Electron Multipliers</b>					53-54
<b>Exsil</b>					46
<b>F</b>					
<b>Ferrules</b>					
1/16" Fitting					33
1/8" Fitting					33
1/4" Fitting					34
3/8" Fitting					34
1/2" Fitting					34
5mm Fitting					34
Agilent Technologies (HP)					3
Mini Unions					35
PerkinElmer					4
Shimadzu					6
Thermo Electron					8
Unions					35
Varian					10
<b>FID Flame Jets</b>					40
<b>Filters</b>					
Gas					38
LC					48
<b>Fittings</b>					
GC					36
LC					48
<b>Flame Jets</b>					40
<b>Flow Meters</b>					
MicroFlow meter - LC					48
<b>Fused Silica Tubing</b>					49
<b>G</b>					
<b>Gas Tight syringes</b>					17
<b>Gas Traps</b>					38
<b>gc-BackFlush</b>					39
<b>GC-MS</b>					
Electron Multipliers					53-54
<b>Glass Lined Tubing - GLT™</b>					52
<b>H</b>					
<b>Hexnut Fittings</b>					48
<b>HPLC</b>					
– see LC					
<b>I</b>					
<b>Inlet liners</b>					
Agilent Technologies					3
ATAS Optic Injectors					32
PerkinElmer					5
Shimadzu					7
Thermo Electron					9
Varian					11
<b>L</b>					
<b>LC</b>					
Accessories					48
C18-3 micron					46
C18-5 micron					46
C8-5 micron					47
Protecol™ Columns					43
Conventional Columns					46-47
Capillary LC Connecting Tubing					51
Column Couplers					48
Detector/tubing Unions					48
EasyLOK™ Fittings					48
Exsil LC Packings					46
Filters - Conventional Columns					48
Guard Cartridges					47
Hexnut™ Fittings					48
Ion Exchange LC Packings					47
In-line Filters - Conventional Columns					48
MicroFlow™ Meter					48
PEEKsil™ Tubing					51
Protecol™ Capillary LC					42-45
Syringes					18-20
<b>Liners (Inlet)</b>					
– see Inlet liners					
<b>Luer Lock Needles</b>					25
<b>M</b>					
<b>Mass Spectrometry</b>					
Electron Multipliers					53-54
<b>Meters</b>					
MicroFlow™					48
<b>Micro Control Valves</b>					37
<b>Mini Unions</b>					35
<b>ms-NoVent II™</b>					41
<b>Multidimensional System - MDS6890</b>					39
<b>N</b>					
<b>Needles</b>					24-25
<b>Nuts for SGE Fittings</b>					36
<b>O</b>					
<b>ODO II (Olfactory Detector Outlet)</b>					39
<b>P</b>					
<b>PEEKsil™ Tubing</b>					51
<b>Protecol™</b>					
Capillary Columns					42
Connecting Tubing					51
<b>Purifiers (Gas)</b>					38
<b>Pyrojector II</b>					40
<b>S</b>					
<b>Septa</b>					32
<b>SilTite™ Metal Ferrules</b>					33
<b>SOLGEL-1ms™</b>					27
<b>SOLGEL-WAX™</b>					30
<b>Splitters</b>					
GC					38
LC					44
<b>Stainless Steel Tubing</b>					52
<b>Syringes</b>					
Agilent Technologies GC Autosampler					12
Agilent Technologies LC Autosampler					18
Autosampler - GC					12-14
Autosampler - LC					18-19
Cavro Instruments					21
CTC / Leap GC Autosampler					14
CTC LC Autosampler					18
Diluter/Dispenser					21
Gas Tight (10µL - 100mL)					17
GC Manual					15-16
Hamilton Instruments					21
Hitachi LC Autosampler					18
Jumbo					22
Large Volume (500mL - 2L)					22
LC Manual					20
LC Pump Priming					20
MicroVolume (0.5 - 500µL)					15-16
Multipacks					23
Needles					24-25
On-column					22
PerkinElmer GC Autosampler					13
PerkinElmer LC Autosampler					18
Plunger-in-needle					15-16
Shimadzu GC Autosampler					13
Spark Holland LC Autosampler					18
Thermo Electron GC Autosampler					13
Thermo Electron LC Autosampler					19
Valves					22
Varian GC Autosampler					14
Waters WISP® LC Autosampler					19
<b>T</b>					
<b>Terry Tool Tubing</b>					52
Cutting tools					52
Electrophoresis					50
Fused Silica					49-50
Glass Lined Tubing - GLT™					52
PEEKsil™ LC					51
Stainless Steel					52
<b>U</b>					
<b>Unions</b>					
Cross					35
LC Tubing / Detector					48
Male / Female (1/16")					36
Mini					35
Reducing					35
SGE Fittings					36
Tea					35
<b>V</b>					
<b>Valves</b>					37
<b>W</b>					
<b>Wakosil II™ – LC Columns</b>					46-47





**Distributed throughout Europe  
and the Middle East by  
Greyhound Chromatography**

Greyhound Chromatography and Allied Chemicals  
6 Kelvin Park, Birkenhead, Merseyside CH41 1LT  
United Kingdom

- Tel: (+44)-0-151 649 4000
- Fax: (+44)-0-151 649 4001
- [www.greyhoundchrom.com](http://www.greyhoundchrom.com)