SGE Analytical Science

A TRAJAN Brand

Choose for Your Instrument

GC Supplies - Instrument Quick Pick Guide

- Agilent Technologies
- Bruker (Varian)
- PerkinElmer
- Shimadzu
- Thermo Scientific

www.sge.com

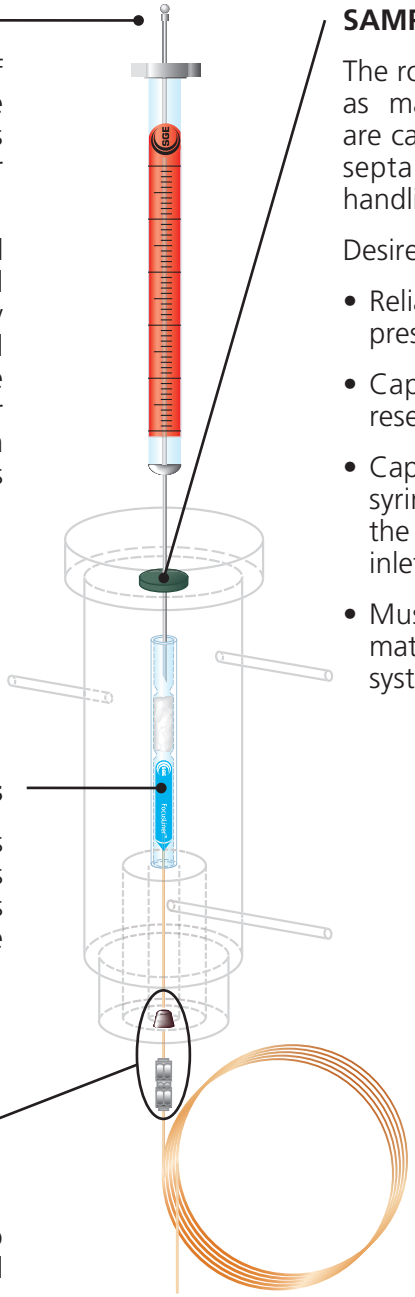
Your chromatography analysis does not end with the selection of the GC column. The combination of components selected for your instrument also make an important contribution to successful separations. Choose SGE technology to improve your chromatography.

SGE Supplies for Sample Preparation, Sample Introduction, and Separation

SAMPLE INTRODUCTION – Syringes

Our involvement in all areas of chromatography provides us with a unique understanding of your requirements enabling us to optimize syringe design for sample introduction.

All our syringes, both manual and autosampler, incorporate SGE Diamond Syringe Technology offering significantly improved levels of durability, clarity and accuracy. Choose from a comprehensive range of syringe options including plunger protection, removable or fixed needles, a range of needle gauge and length options as well as needle-tip style alternatives.



SAMPLE INTRODUCTION – Septa

The role of septa for GC analysis is key as many chromatographic problems are caused as a result of inappropriate septa material or inappropriate handling of the septa.

Desired septa attributes:

- Reliably seal against the carrier gas pressure in the inlet.
- Capable of being pierced and resealed time after time.
- Capable of being pierced by the syringe needle without pieces of the septa being deposited in the GC inlet system.
- Must not contaminate or bleed material into the chromatographic system.

SAMPLE INTRODUCTION – GC Inlet Liners

The GC Inlet liner is where the sample is introduced and vaporized into the gaseous phase. The design of the liner is crucial, as is liner deactivation, to ensure reproducible and accurate chromatography.

SEPARATION – GC Connections
(ferrules and fittings)

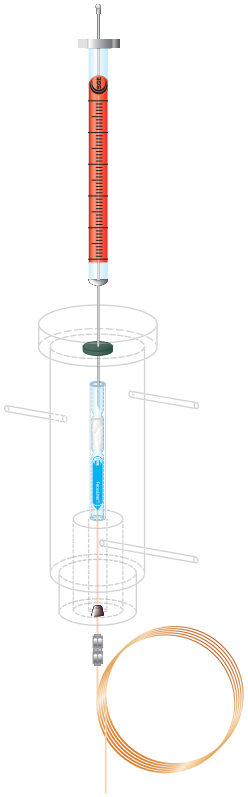
SGE GC Connections are designed to minimize your time spent on installation, and are suitable for a wide range of applications.

Poorly defined or selected connections can lead to an increase in dead volume, leaks from cycled temperatures and mismatched tubing sizes.

Contents

Autosampler Syringes

All needles are 42 mm long with a cone point.



Agilent 7673, 7683, 7693A & 6850 ALS

Volume	Needle Gauge (OD mm)	Syringe Code	Syringe Part No.	Pack Size	Spare Needle Part No.	Pack Size	Spare Plunger Part No.	Pack Size
Fixed Tapered Needle								
5 µL	23-26s (0.63/0.47)	5F-AG-0.63/0.47C	001821	1	–	–	–	–
10 µL	23-26s (0.63/0.47)	10F-AG-0.63/0.47C	002821	1	–	–	–	–
10 µL Gas Tight	23-26s (0.63/0.47)	10F-AG-GT-0.63/0.47C	002826	1	–	–	031808	2
Fixed Straight Needle								
5 µL	26 (0.47)	5F-AG-0.47C	001800	1	–	–	–	–
5 µL(M)	23 (0.63)	5F-AG-0.63C	001810	1	–	–	–	–
10 µL	26 (0.47)	10F-AG-0.47C	002800	1	–	–	–	–
10 µL(M)	23 (0.63)	10F-AG-0.63C	002810	1	–	–	–	–
10 µL(M) Gas Tight	23 (0.63)	10F-AG-GT-0.63C	002812	1	–	–	031808	2
Removable Tapered Needle								
0.5 µL	23-26s (0.63/0.47)	0.5BR-AG-0.63/0.47C	000415	1	033730	1*	–	–
10 µL Gas Tight	23-26s (0.63/0.47)	10R-AG-GT-0.63/0.47C	002829	1	037730	2	031809	2
Removable Straight Needle								
0.5 µL	26 (0.47)	0.5BR-AG-0.47C	000400	1	033708	1*	–	–
0.5 µL (M)	23 (0.63)	0.5BR-AG-0.63C	000410	1	033715	1*	–	–
1 µL	23 (0.63)	1BR-AG-0.63C	000610	1	034715	1*	–	–
10 µL	26 (0.47)	10R-AG-0.47C	002805	1	037715	2	–	–
10 µL (M)	23 (0.63)	10R-AG-0.63C	002815	1	037717	2	–	–

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

Septa

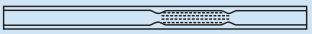
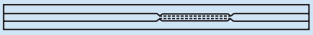
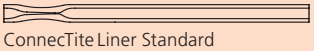
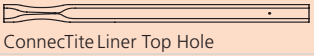
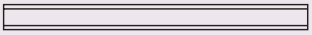
Choose from a number of different septa materials:

- GP = For non-demanding routine applications.
- EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
- MN = Premium septa for autosamplers, up to 400 injection per septum.
- HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

Type	Material	Durability	Resealing	Solvent Resistance	Tear Resistance	Maximum Temperature
GP	Silicone	Good	Good	Excellent	Good	200 °C
EC	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
MN	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
HT	BTO Silicone	Excellent	Excellent	Excellent	Excellent	400 °C

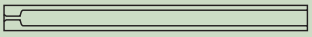
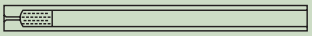
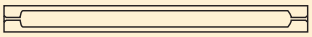
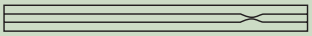
Diameter (mm)	Material	Pack Size	Part No.
For Agilent 7620, 5790, 5880, 5890			
5	GP	50	041820
5	MN	50	041850
For Agilent 5700, 5800, 5900			
9.5	GP	50	0418240
9.5	EC	25	041901
9.5	HT	50	041897
For Agilent 7890, 6890,5890, 5880, 4890, 6850			
11	GP	50	041826
11	EC	25	041902
11	MN	50	041856
11	HT	25	041898
For Agilent 5750, 710, 720, 810, 7610			
12.5	GP	48	041828
12.5	HT	24	0418992
12.5	EC	24	041906

Inlet Liners

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part No.
For Agilent 5890, 6850, 6890, 7890 and HP4890					
 Split / Splitless FocusLiner®	6.3	4	78.5	5	092002
				25	092219
 Split / Splitless Tapered FocusLiner®	6.3	4	78.5	5	092003
				25	092011
 Split / Splitless FAST FocusLiner®	6.3	2.3	78.5	5	092005
				25	092008
 Split / Splitless Tapered FAST FocusLiner®	6.3	2.3	78.5	5	092111
				25	092115
 ConnecTite Liner Standard	6.3	4	78.5	5	092324
 ConnecTite Liner Top Hole	6.3	4	78.5	5	092325
 ConnecTite Liner Bottom Hole	6.3	4	78.5	5	092326
 Split, Straight-through Liner	6.3	4	78.5	5	092007
				25	092222
 Split, with Quartz Wool	6.3	4	78.5	5	092001
				25	092220

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

Inlet Liners Continued

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part No.
 Split / Splitless with Single Taper	6.3	4	78.5	5	092017
				25	092229
 Split / Splitless with Single Taper (Quartz Wool)	6.3	4	78.5	5	092019
				25	092218
 Split / Splitless with Double Taper	6.3	4	78.5	5	092018
				25	092230
 Direct, Straight-through Liner	6.3	1.2	78.5	5	092016
				25	092224
 Split / Splitless Quartz, Straight-through Liner	6.1	2	78.5	5	092004
 Splitless with Recessed Gooseneck	6.3	2	78.5	5	092013
 Split / Splitless Recessed Gooseneck (Quartz Wool)	6.3	4	78.5	5	092010
				25	092223

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

O-rings and Sealing Rings

Description	Usage	Pack Size	Part No.
Viton O-ring	Can be used at temperatures up to 300 °C. Suitable for liners with OD of 6.3 mm.	10	0726532
Graphite Sealing Ring	Can be used at temperatures up to 450 °C. Suitable for all inlet liners above except 092004 and 09200401.	10	0726005
Graphite Sealing Ring	Can be used at temperatures up to 450 °C. Suitable for use with liners 092004 and 09200401.	10	0726006

SilTite® FingerTite Ferrules

Description		Pack Size	Part No.
SilTite Fingertite Agilent INJ / FID Starter Kit		*	073610
SilTite Fingertite Agilent INJ / MS Starter Kit		*	073612
SilTite Fingertite Ferrule 0.4 mm	Replacement Items	10	073630
SilTite Fingertite Ferrule 0.5 mm	Replacement Items	10	073631
SilTite Fingertite Blanking Ferrule	Replacement Items	2	073633
SilTite Fingertite Female Nut	Replacement Items	5	073636
SilTite Fingertite Agilent INJ Base Seal	Replacement Items	2	073640
SilTite Fingertite Starter Kit 0.4		#	0736100
SilTite Fingertite Agilent Capillary Adaptor		1	0736101
SilTite Fingertite Agilent MS Adaptor		1	0736102
SilTite Fingertite Agilent FID Detector		1	0736103
SilTite Fingertite Agilent Injector		1	0736104
SilTite Fingertite Starter Kit 0.5		#	0736105

** Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite FingerTite system suitable for installing 0.1 – 0.25 mm ID capillary columns. In addition there are five SilTite FingerTite nuts, one packet (ten ferrules) of 0.4 mm ID SilTite FingerTite ferrules and a ferrule install tool which allows you to seat the ferrule in the correct position on the capillary column.*

 # 0.4 and 0.5 Starter Kits include ten ferrules for either 0.1 - 0.25 mm ID capillary columns (0.4) or 0.32 mm ID capillary columns (0.5) plus five SilTite FingerTite nuts and the ferrule install tool.

Ferrules

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

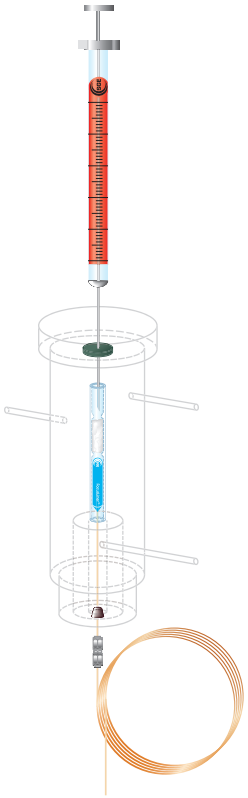
** Includes ten ferrules, two SilTite nuts.*
 # Includes ten ferrules, two SilTite nuts and two SilTite Inlet Base Seals.

Instrument Quick Pick for Bruker (Varian)

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
Bruker (Varian) 8035, 8100 and 8200										
Removable Needle										
1 µL*	51	26 (0.47)	Cone	1BR-VA8X	000655	1	034720	1**	–	–
10 µL Gas Tight	53	25 (0.5)	S/Hole	10R-GT-VA8X-II	002924	1	037777	1	031218	1
Needle Alternatives for P/N 002924										
	50	25 (0.5)	Bevel	N10-VA8035-II	–	1	037776	2	–	–
	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	–	–
Bruker (Varian) CP-8400/8410, CP-9010/9050										
Fixed Needle										
10 µL	50	26 (0.47)	Bevel	10F-VA8400-5/0.47	002950	1	–	–	–	–
10 µL	50	23 (0.63)	Cone	10F-VA8400/BT-5/0.63C	002951	1	–	–	–	–
Removable Needle										
10 µL Gas Tight	50	26 (0.47)	Cone	10R-BT-GT-0.47C	0029851	1	037010	2	03181211	2

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



Septa

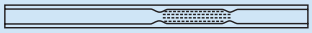
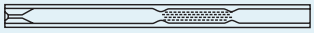
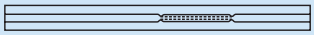
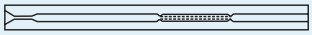
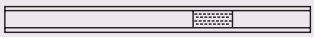
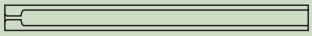
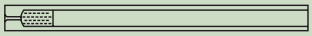
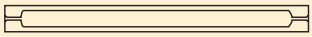
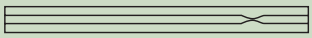
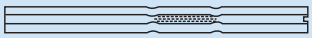
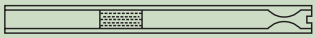
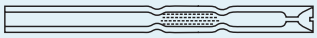
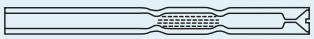
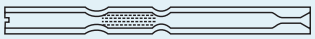
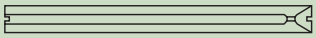
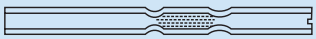
Choose from a number of different septa materials:

- GP = For non-demanding routine applications.
- EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
- MN = Premium septa for autosamplers, up to 400 injection per septum.
- HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

Type	Material	Durability	Resealing	Solvent Resistance	Tear Resistance	Maximum Temperature
GP	Silicone	Good	Good	Excellent	Good	200 °C
EC	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
MN	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
HT	BTO Silicone	Excellent	Excellent	Excellent	Excellent	400 °C

Diameter	Material	Pack Size	Part No.
For Varian / Bruker 1177 Injector			
9	GP	50	041824
9	EC	25	041900
9	MN	50	041854
9	HT	25	041896
For Varian / Bruker 1040, 1041, 1060, 1061 injector			
9.5	GP	50	0418240
9.5	EC	25	041901
9.5	HT	50	041897
For Varian / Bruker 1040, 1041, 1060, 1061 injector			
11	GP	48	041826
11	EC	24	041902
11	MN	48	041856
11	HT	24	041898

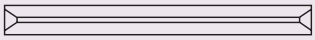
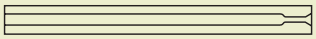
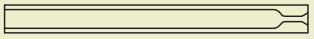
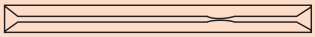
Inlet Liners

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part no.
For 1177 Injector					
 Split / Splitless FocusLiner®	6.3	4	78.5	5	092002
				25	092219
 Split / Splitless Tapered FocusLiner®	6.3	4	78.5	5	092003
				25	092011
 Split / Splitless FAST FocusLiner®	6.3	2.3	78.5	5	092005
				25	092008
 Split / Splitless Tapered FAST FocusLiner®	6.3	2.3	78.5	5	092111
				25	092115
 Split, straight-through liner	6.3	4	78.5	5	092007
				25	092222
 Split, with quartz wool	6.3	4	78.5	5	092001
				25	092220
 Split / Splitless with single taper	6.3	4	78.5	5	092017
				25	092229
 Split / Splitless with single taper (quartz wool)	6.3	4	78.5	5	092019
				25	092218
 Split / Splitless with double taper	6.3	4	78.5	5	092018
				25	092230
 Direct, straight-through liner	6.3	1.2	78.5	5	092016
				25	092224
 Splitless with Recessed Gooseneck	6.3	2	78.5	5	092013
 Split / Splitless Recessed Gooseneck (quartz wool)	6.3	4	78.5	5	092010
				25	092223
For 1075/1077 Injector					
 Split, FAST FocusLiner®	6.3	2.3	72	1	09211301
 Split with Quartz Wool	6.3	4	72	5	092021
				25	09222125
 Split FocusLiner® with Top-end Restriction	6.3	4	72	5	092028
 Splitless FocusLiner® with Top-end Restriction	6.3	4	74	1	09202601
 Split, Tapered FocusLiner®	6.3	4	72	1	09202501
 Splitless, Slots at Both Ends	6.3	2	74	5	092024
				25	092228
 Split FocusLiner®	6.3	4	72	5	092022

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

Instrument Quick Pick for Bruker (Varian)

Inlet Liners Continued

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part no.
For 1078/1079 Injector					
 Sintered Glass, Large Volume Injection (LVI) Liner	5	1.8/3.4	54	5	092245
				25	09224525
 Straight-through Liner	5	0.5	54	5	092031
SPME liner	5	0.75	54	5	092117
 Splitless with Single Taper	5	2	54	5	092039
 Split / Splitless with Single Taper	5	3.4	54	5	092038
				25	09203825
 Split / Splitless FocusLiner®	5	3.4	54	5	092037
 Split / Splitless Tapered FocusLiner®	5	3.4	54	5	092036
For 1093/1094 Injector					
 ConnecTite™ SPI Liner, (Restriction = 0.25 mm)	4.6	0.5	54	5	092027
 ConnecTite™ SPI Liner, (Restriction = 0.5 mm) for 0.53 mm ID On-column	4.6	0.8	54	5	092034
 ConnecTite™ SPI Liner, (Restriction = 0.25 mm)	4.6	0.8	54	5	092030

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

O-rings and Sealing Rings

Description	Usage	Pack Size	Part No.
Viton O-ring for 1177 Injector	Can be used at temperatures up to 300 °C.	10	0726532
Graphite Sealing Ring for 1075 & 1077 Injectors	Can be used at temperatures up to 450 °C.	10	072601
Graphite Sealing Ring for 1078 & 1079 Injectors	Can be used at temperatures up to 450 °C.	10	0726217

SilTite® FingerTite Ferrules

Description	Column ID	Ferrule ID (mm)	Pack Size	Part No.
SilTite FingerTite Bruker (Varian) Injector/GC-MS Starter Kit	0.1-0.25 mm	0.4	*	073619
SilTite FingerTite Bruker (Varian) Injector/FID Starter Kit	0.1-0.25 mm	0.4	*	073618
SilTite FingerTite Ferrule 0.4 mm	0.1-0.25 mm	0.4	10	073630
SilTite FingerTite Ferrule 0.5 mm	0.32 mm	0.5	10	073631
SilTite FingerTite Ferrule Blanking	–	–	2	073633
SilTite FingerTite Female Nut	–	–	5	073636

** Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite Fingertite system suitable for installing 0.1 – 0.25 mm ID capillary columns. In addition there are five SilTite Fingertite nuts, one packet (ten ferrules) of 0.4 mm ID SilTite Fingertite ferrules and a ferrule install tool which allows you to seat the ferrule in the correct position on the capillary column.*

Ferrules

Instrument	Column ID	Ferrule ID	Pack Size	Part No.
15% Graphite / 85% Vespel® Ferrules				
For GC-MS & Detectors at atmospheric pressure e.g. FID	0.1-0.25 mm	0.4 mm	10	072663
	0.32 mm	0.5 mm	10	072654
	0.53 mm	0.8 mm	10	072655
Packed Columns	1/8" OD Packed Columns	1/8"	10	072669
	1/4" OD Packed Columns	1/4"	10	072667
100% Graphite Ferrules				
For Injectors & Detectors at atmospheric pressure e.g. FID	0.1-0.32 mm	0.5 mm	10	072627
	0.45-0.53 mm	0.8 mm	10	072626
	1/8" OD Packed Columns	1/8"	10	072622
	1/4" OD Packed Columns	1/4"	10	072621
SilTite Metal Ferrules				
For GC-MS Interface Connections (Starter Kit)	0.1-0.25 mm	0.4 mm	10*	073300
	0.32 mm	0.5 mm	10*	073301
	0.53 mm	0.8 mm	10*	073302
Nuts for Varian Injector				
			2	1034060
Replacement SilTite Ferrules				
For GC-MS Interface Connections	0.1-0.25 mm	0.4 mm	10	073220
	0.32 mm	0.5 mm	10	073221
	0.53 mm	0.8 mm	10	073222
	1/32"	0.81 mm	10	073219
Replacement SilTite Nuts				
			5	073231

**Includes ten ferrules, two SilTite nuts.*

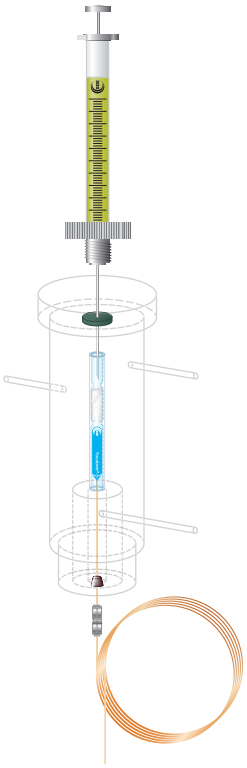
Autosampler Syringes

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

PerkinElmer AutoSystem

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

**Denotes spare Needle and Plunger kit.*



Septa

Choose from a number of different septa materials:

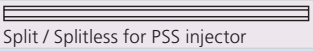
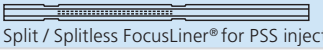
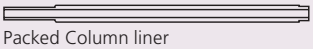
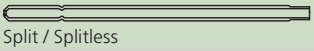
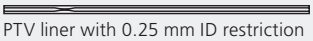
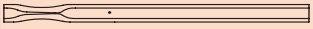
- GP = For non-demanding routine applications.
- EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
- MN = Premium septa for autosamplers, up to 400 injection per septum.
- HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

Type	Material	Durability	Resealing	Solvent Resistance	Tear Resistance	Maximum Temperature
GP	Silicone	Good	Good	Excellent	Good	200 °C
EC	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
MN	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
HT	BTO Silicone	Excellent	Excellent	Excellent	Excellent	400 °C

Diameter	Material	Pack Size	Part No.
For PerkinElmer Sigma, 900, 990, 8000 Series, AutoSystem and Clarus			
11	GP	48	041826
11	EC	24	041902
11	MN	48	041856
11	HT	24	041898

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

Inlet Liners

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part No.
For AutoSystem™ & Clarus 500, 600					
 Split / Splitless Single Taper liner	6.2	4	92	1	09209901
				5	0920990
 Split / Splitless FocusLiner®	6.2	4	92	5	092092
				25	09209225
 Split / Splitless Tapered FocusLiner®	6.2	4	92	5	092092
				25	09209225
 Split, straight-through liner	6.2	4	92	5	092100
				25	09210025
 Splitless, straight-through liner	6.2	2	92	5	092103
 Split / Splitless for PSS injector	4	2	86.2	5	092098
 Split / Splitless FocusLiner® for PSS injector	4	2	86.2	5	092101
 Large Volume Injection (LVI) liner for PSS injector, sintered glass	4	2	86.2	5	092244
 Packed Column liner	6	3	112	5	092236
For 8000 and Sigma series					
 Split / Splitless	5	3	100	5	092091
 Splitless with single taper	5	2	100	1	09209401
PTV Liner					
 PTV liner with 0.25 mm ID restriction (recessed gooseneck)	2	1	88	5	092097
For AutoSystem Injectors					
 ConnecTite Liner Standard	6.2	4	92	5	092344
 ConnecTite Liner Top Hole	6.2	4	92	5	092345
 ConnecTite Liner Bottom Hole	6.2	4	92	5	092346

O-rings and Sealing Rings

Description	Usage	Pack Size	Part No.
Viton O-ring	Can be used at temperatures up to 300 °C. For use with 6.2 mm OD liners.	10	0726536
Graphite Vespel Sealing Ring for PSS system	Can be used at temperatures up to 325 °C. For use with 4 mm OD liners	10	0726522

SilTite® FingerTite Ferrules

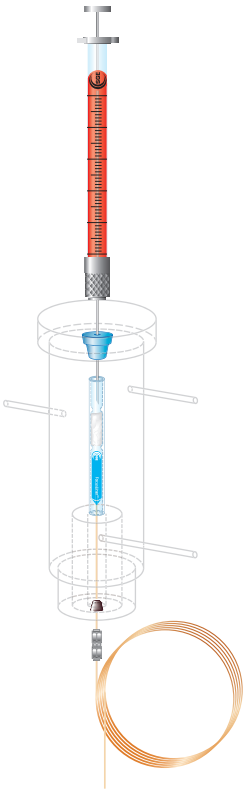
Description		Column ID	Ferrule ID (mm)	Pack Size	Part No.
SilTite FingerTite PerkinElmer Injector/GC-MS Starter Kit		0.1-0.25 mm	0.4	*	073623
SilTite FingerTite PerkinElmer Injector/FID Starter Kit		0.1-0.25 mm	0.4	*	073622
SilTite FingerTite Ferrule 0.4 mm	Replacement Items	0.1-0.25 mm	0.4	10	073630
SilTite FingerTite Ferrule 0.5 mm	Replacement Items	0.32 mm	0.5	10	073631
SilTite FingerTite Ferrule Blanking	Replacement Items	–	–	2	073633
SilTite FingerTite Female Nut	Replacement Items	–	–	5	073636

** Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite Fingertite system suitable for installing 0.1 – 0.25 mm ID capillary columns. In addition there are five SilTite Fingertite nuts, one packet (ten ferrules) of 0.4 mm ID SilTite Fingertite ferrules and a ferrule install tool which allows you to seat the ferrule in the correct position on the capillary column.*

Ferrules

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

**Includes ten ferrules, two SilTite nuts.*



Autosampler Syringes

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

Shimadzu AOC14, AOC17 and AOC20

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

**Denotes spare Needle and Plunger kit.*

Septa

Choose from a number of different septa materials:

- Enduro Blue = For non-demanding routine applications.
- EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
- HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

Type	Material	Durability	Resealing	Solvent Resistance	Tear Resistance	Maximum Temperature
Enduro Blue	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	350 °C
EC	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
HT	BTO Silicone	Excellent	Excellent	Excellent	Excellent	400 °C

Septum Type	Pack Size	Part No.
For Shimadzu 9A, 14, 15A, 16, 17A, 2010 & 2014		
Enduro Blue	50	041890
EC	50	041905
HT	50	041895

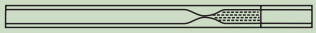
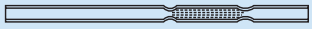
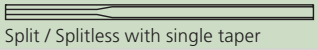
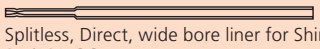
Inlet Liners

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part No.
For GC-2010 (SPL-2010 Injector), GC-2014 (SPL-2014 Injector) and GC-17A (SPL-17 Injector)					
Split / Splitless FocusLiner® *	5	3.4	95	5	092059
Split / Splitless Tapered FocusLiner® *	5	3.4	95	5	092058
Split / Splitless FocusLiner®	5	3.4	95	5	092062
Split / Splitless Tapered FocusLiner®	5	3.4	95	5	092068

Instrument Quick Pick for Shimadzu

Inlet Liners Continued

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part No.
 ConnecTite Liner Standard	5	3.4	95	5	092329
 ConnecTite Liner Top Hole	5	3.4	95	5	092330
 ConnecTite Liner Bottom Hole	5	3.4	95	5	092331
 Split, straight-through liner	5	3.4	95	5	092064
 Splitless straight-through liner	5	2.6	95	5	0920861
 Split / Splitless with Single Taper	5	3.4	95	5	092071
 Split / Splitless with middle gooseneck	5	3.4	95	5	092077
 Split / Splitless with recessed gooseneck and quartz wool	5	3.4	95	5	092061
 Split / Splitless with middle gooseneck	5	3.4	95	5	092085
 ConnecTite™ (0.53 mm ID columns)	5	2.6	95	5	092087
 SPME Liner	5	0.75	95	5	092089
For GC-14(SPL-14 Injector)					
 Split / Splitless FocusLiner®	5	3.4	99	5	092065
 Split / Splitless Tapered FocusLiner®	5	3.4	99	5	092066
 Split / Splitless with 2.0 mm middle gooseneck	5	3.4	99	5	092082
 Split / Splitless with single taper	5	3.4	99	5	0920831
 Splitless, Direct, wide bore liner for Shimadzu 9A/16A GC	5	3.4	139	5	092084

** When using a standard 42 mm needle for autosamplers, the sample will be injected on top of the wool for this liner.*

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

O-rings and Sealing Rings

Description	Usage	Pack Size	Part No.
Viton O-ring	Can be used at temperatures up to 300 °C. For 2010 & 2014 (SPL-2010 Injector & SPL-2014 Injector).	10	0726533
Graphite Sealing Ring	Can be used at temperatures up to 450 °C. For 14, 15A & 16 (SPL-14 injector).	10	0726001
Graphite Sealing Ring	Can be used at temperatures up to 450 °C. For 17A (SPL-17 injector).	10	0726007

SilTite® FingerTite Ferrules

Description		Pack Size	Part No.
SilTite Fingertite Shimadzu 2010 INJ / FID Starter Kit		*	073620
SilTite Fingertite Shimadzu 2010 INJ / MS Starter Kit		*	073621
SilTite Fingertite Ferrule 0.4 mm	Replacement Items	10	073630
SilTite Fingertite Ferrule 0.5 mm	Replacement Items	10	073631
SilTite Fingertite Blanking Ferrule	Replacement Items	2	073633
SilTite Fingertite Female Nut	Replacement Items	5	073636

** Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite FingerTite system suitable for installing 0.1 – 0.25 mm ID capillary columns. In addition there are five SilTite FingerTite nuts, one packet (ten ferrules) of 0.4 mm ID SilTite FingerTite ferrules and a ferrule install tool which allows you to seat the ferrule in the correct position on the capillary column.*

Ferrules

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

** Includes ten ferrules, two SilTite nuts.*

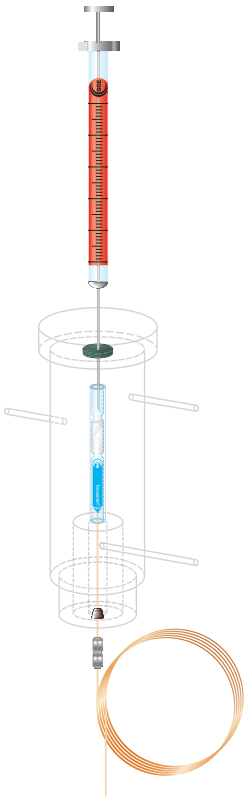
Replacement Parts

Material	Pack Size	Part No.
Replacement SilTite Nuts		
For 2010 GC-MS System	5	073224
For 2010 GC-MS System with QP5000 series MS	5	073224
For 2010/2014 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

Instrument Quick Pick for Thermo Scientific

Autosampler Syringes for Thermo Scientific / CE Instruments / Fisons

All needles have a cone point style.



AUTOSAMPLER				SYRINGE SPECIFICATIONS							
TriPlus	AS3000	AS2000	AS200/ 800	Volume	Length (mm)	Gauge (OD mm)	Syringe Code	Plunger Stop	Syringe Part No.	Needle Part No.	Pack Size
Fixed Needle											
•				10 µL	50	23 (0.63)	10F-C/T-GT-5/0.63C	✓	002987	–	–
•		•		10 µL	50	23 (0.63)	10F-BT-GT-5/0.63C		0029871	–	–
•		•		10 µL	80	23 (0.63)	10F-BT-8/0.63C		0029891	–	–
•				10 µL	80	26 (0.47)	10F-C/T-8/0.47C	✓	002992	–	–
•		•		10 µL	80	26 (0.47)	10F-BT-8/0.47C		0029921	–	–
•				10 µL	50	23 (0.63)	10F-C/T-5/0.63C	✓	002981	–	–
•	•	•	•	10 µL	50	23 (0.63)	10F-VA8400/BT-5/0.63C		002951	–	–
•				10 µL	50	26 (0.47)	10F-C/T-5/0.47C	✓	002980	–	–
•	•	•	•	10 µL	50	26 (0.47)	10F-BT-5/0.47C		0029801	–	–
Removable Needle											
•				10 µL	50	26 (0.47)	10R-C/T-5/0.47C	✓	002982	037010	2
•	•	•		10 µL	50	26 (0.47)	10R-BT-GT-0.47C		0029851	037010	2
•				10 µL	50	23 (0.63)	10R-C/T-5/0.63C	✓	002984	037787	2
•	•	•	•	10 µL	50	23 (0.63)	10R-BT-0.63C		0029841	037787	2
•				10 µL	80	26 (0.47)	10R-C/T-8/0.47C	✓	002993	031535	3
•		•	•	10 µL	80	26 (0.47)	10R-BT-8/0.47C		0029931	031535	3

Septa

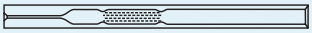
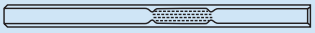
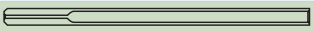
Choose from a number of different septa materials:

- GP = For non-demanding routine applications.
- EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
- MN = Premium septa for autosamplers, up to 400 injection per septum.
- HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

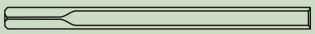
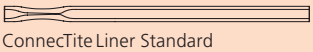
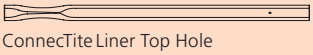
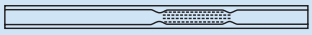
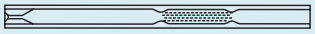
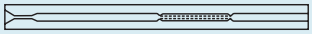
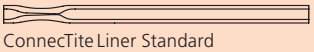
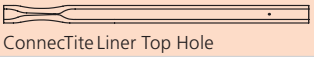
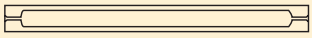
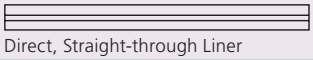
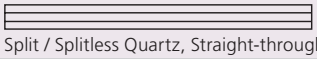
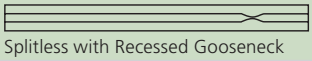
Type	Material	Durability	Resealing	Solvent Resistance	Tear Resistance	Maximum Temperature
GP	Silicone	Good	Good	Excellent	Good	200 °C
EC	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
MN	High Temperature Silicone	Excellent	Excellent	Excellent	Excellent	400 °C
HT	BTO Silicone	Excellent	Excellent	Excellent	Excellent	400 °C

Diameter (mm)	Septum Type	Pack Size	Part No.
For TRACE™ 1300			
11	GP	48	041826
11	EC	24	041902
11	MN	48	041856
11	HT	24	041898
17	EC	24	041903
17	MN	24	0418505
17	HT	24	0418990

Inlet Liners

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part no.
For TRACE™ and Focus™					
 Splitless FocusLiner® (for use with 70 mm Needle)	8	5	105	5	092045
 Splitless FocusLiner® with Top-end Restriction (for use with 70 mm Needle)	8	5	105	5	092046
				25	09204625
 Split FocusLiner® (for use with 50 mm Needle)	8	5	105	5	092048
 Splitless FocusLiner® (for use with 50 mm Needle)	8	5	105	5	092049
 Splitless with Single Taper	8	3	105	5	092141

Inlet Liners Continued

Description and Geometry Sketch	OD (mm)	ID (mm)	Length (mm)	Pack Size	Part no.
 Splitless with Single Taper	8	5	105	5	092144
 Splitless, Straight-through Liner	8	3	105	5	092147
 SPME Liner	8	0.8	105	5	092148
 Split, Straight-through Liner	8	5	105	5	092150
TRACE™ 2000 PTV Liner	2.75	1.75	120	5	092142
Sintered Glass, Large Volume Injection (LVI) Liner	2.75	0.78/1.8	120	5	092155
 ConnecTite Liner Standard	8	5	105	5	092334
 ConnecTite Liner Top Hole	8	5	105	5	092335
 ConnecTite Liner Bottom Hole	8	5	105	5	092336
For TRACE™ 1300					
 Split / Splitless FocusLiner®	6.3	4	78.5	5	092002
				25	092219
 Split / Splitless Tapered FocusLiner®	6.3	4	78.5	5	092003
				25	092011
 Split / Splitless FAST FocusLiner®	6.3	2.3	78.5	5	092005
				25	092008
 Split / Splitless Tapered FAST FocusLiner®	6.3	2.3	78.5	5	092111
				25	092115
 ConnecTite Liner Standard	6.3	4	78.5	5	092324
 ConnecTite Liner Top Hole	6.3	4	78.5	5	092325
 ConnecTite Liner Bottom Hole	6.3	4	78.5	5	092326
 Split, Straight-through Liner	6.3	4	78.5	5	092007
				25	092222
 Split, with Quartz Wool	6.3	4	78.5	5	092001
				25	092220
 Split / Splitless with Single Taper	6.3	4	78.5	5	092017
				25	092229
 Split / Splitless with Single Taper (Quartz Wool)	6.3	4	78.5	5	092019
				25	092218
 Split / Splitless with Double Taper	6.3	4	78.5	5	092018
				25	092230
 Direct, Straight-through Liner	6.3	1.2	78.5	5	092016
				25	092224
 Split / Splitless Quartz, Straight-through Liner	6.1	2	78.5	5	092004
 Splitless with Recessed Gooseneck	6.3	2	78.5	5	092013
 Split / Splitless Recessed Gooseneck (Quartz Wool)	6.3	4	78.5	5	092010
				25	092223

- Taper / Gooseneck
- FocusLiner™
- Taper Focus
- ConnecTite
- Straight
- Double Taper
- PTV/LVI

O-rings and Sealing Rings

Description	Usage	Pack Size	Part No.
For 8000 & TRACE™ GCs			
Graphite Sealing Ring	8 mm ID. Can be used at temperatures up to 450 °C. Suitable for use with liners 092004 and 09200401.	10	0726004
For TRACE™ 1300			
Viton O-Ring	Can be used at temperatures up to 300 °C. Suitable for liners with OD of 6.3 mm.	10	0726532
Graphite Sealing Ring	Can be used at temperatures up to 450 °C. Suitable for all inlet liners above except 092004 and 09200401.	10	0726005
Graphite Sealing Ring	Can be used at temperatures up to 450 °C. Suitable for use with liners 092004 and 09200401.	10	0726006

SilTite® FingerTite Ferrules

Description	Column ID	Ferrule ID (mm)	Pack Size	Part No.
SilTite FingerTite Thermo Injector/FID Starter Kit	0.1-0.25 mm	0.4	*	073614
SilTite FingerTite Thermo Injector/GC-MS ISQ Starter Kit	0.1-0.25 mm	0.4	*	073615
SilTite FingerTite Thermo Injector/GC-MS Starter Kit	0.1-0.25 mm	0.4	*	073616
SilTite FingerTite Ferrule 0.4 mm	0.1-0.25 mm	0.4	10	073630
SilTite FingerTite Ferrule 0.5 mm	0.32 mm	0.5	10	073631
SilTite FingerTite Ferrule Blanking	–	–	2	073633
SilTite FingerTite Female Nut	–	–	5	073636
For TRACE™ 1300				
SilTite Fingertite INJ / FID Starter Kit			*	073610
SilTite Fingertite Capillary / FID Starter Kit			*	073611
SilTite Fingertite INJ / MS Starter Kit			*	073612
SilTite Fingertite Blanking Ferrule		Replacement Items	2	073633
SilTite Fingertite INJ Base Seal		Replacement Items	2	073640
SilTite Fingertite MS Adaptor			1	0736102
SilTite Fingertite Injector			1	0736104
SilTite Fingertite Starter Kit 0.5			#	0736105

** Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite FingerTite system suitable for installing 0.1 – 0.25 mm ID capillary columns. In addition there are five SilTite FingerTite nuts, one packet (ten ferrules) of 0.4 mm ID SilTite FingerTite ferrules and a ferrule install tool which allows you to seat the ferrule in the correct position on the capillary column.*

 # 0.4 and 0.5 Starter Kits include ten ferrules for either 0.1 - 0.25 mm ID capillary columns (0.4) or 0.32 mm ID capillary columns (0.5) plus five SilTite FingerTite nuts and the ferrule install tool.

Ferrules

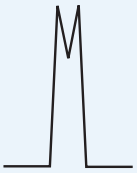
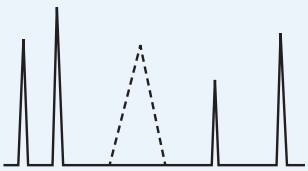
Description	Column ID	Ferrule ID	Pack Size	Part No.
15% Graphite / 85% Vespel® Ferrules				
For All Injectors & Detectors (Not for 8000 Series, Focus, TRACE™/Ultra GC)	0.1-0.25 mm	0.4 mm	10	0726549
	0.32 mm	0.5 mm	10	0726557
	0.53 mm	0.8 mm	10	0726548
	1/8" OD Packed Columns	1/8"	10	072669
	1/4" OD Packed Columns	1/4"	10	072667
For All Focus, Trace/Ultra Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)	0.1-0.25 mm	0.4 mm	10#	072696
	0.32 mm	0.5 mm	10#	072697
	0.53 mm	0.8 mm	10#	072698
Brass Nut for Focus, Trace/Ultra GC Injectors & Non-MS Detectors			2	1034085
For TRACE™ 1300 Injectors & Detectors at atmospheric pressure e.g. FID	0.1-0.25 mm	0.4 mm	10	073109
	0.32 mm	0.5 mm	10	073111
	0.53 mm	0.8 mm	10	073113
	for 1/8" OD Packed Columns	1/8"	10	072669
	for 1/4" OD Packed Columns	1/4"	10	072667
For TRACE™ 1300 GC-MS Interface Connection	0.1-0.25 mm	0.4 mm	10	072663
	0.32 mm	0.5 mm	10	072654
	0.53 mm	0.8 mm	10	072655
100% Graphite Ferrules				
For Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)	0.1-0.32 mm	0.5 mm	10	072619
	0.45-0.53 mm	0.8 mm	10	072614
	1/8" OD Packed Columns	1/8"	10	072622
	1/4" OD Packed Columns	1/4"	10	072621
For TRACE™ 1300 Injectors & Detectors at atmospheric pressure e.g. FID (Not for GC-MS)	0.1-0.32 mm	0.5 mm	10	072635
	0.45-0.53 mm	0.8 mm	10	072636
	for 1/8" OD Packed Columns	1/8"	10	072602
	for 1/4" OD Packed Columns	1/4"	10	072601
SilTite Metal Ferrules				
For GC-MS Interface Connections (Starter Kit)	0.1-0.25 mm	0.4 mm	10*	073450
	0.32 mm	0.5 mm	10*	073451
	0.53 mm	0.8 mm	10*	073452
For TRACE™ 1300 Split / Splitless Injectors (Starter Kit)	0.1-0.25 mm	0.4 mm	10#	073270
	0.32 mm	0.5 mm	10#	073271
	0.45-0.53 mm	0.8 mm	10#	073272
	1/32"	0.81 mm	10#	073273
Replacement SilTite Metal Ferrules				
For All GC-MS Interface Connections	0.1-0.25 mm	0.4 mm	10	073330
	0.32 mm	0.5 mm	10	073331
	0.53 mm	0.8 mm	10	073332
	1/32"	0.81 mm	10	073333
For All TRACE™ 1300 Connections	0.1-0.25 mm	0.4 mm	10	073220
	0.32 mm	0.5 mm	10	073221
	0.53 mm	0.8 mm	10	073222
	1/32"	0.81 mm	10	073219
Replacement SilTite Nuts				
SilTite Metal Nuts	–	–	5	073230
For TRACE™ 1300 GC-MS Interface Connection	–	–	5	073224
For TRACE™ 1300 Split / Splitless Injector	–	–	5	073226
Replacement SilTite Base Seals				
For TRACE™ 1300 Split / Splitless Injector	–	–	2	073400
	–	–	10	073401

** Includes 10 ferrules, 2 SilTite nuts.*
 # To be used in combination with brass nut (Part No. 1034085)

GC Troubleshooting

Problem	Resolution
No column flow	Check carrier gas flow and adjust. Replace septum/injector seal with EC septum. Visually check column integrity i.e. is it broken? Remove section if small enough or replace column.
High column bleed	Check published maximum temperature. Check carrier flow rates / velocity, correct for column/length – adjust if necessary. Check column has not moved in detector. Check for leaks produced during initial heating especially Vespel® ferrules. Check oxygen filter is not spent – replace if necessary. Make sure detector temperature is higher than final column temperature if possible. Check cleanliness of detector – clean if necessary. Recondition column – re-run conditioning program. Cut 50 cm from the front end of the column.
Retention time shifts	Check temperature program. Check injector temperature. Ensure manual injection technique is consistent. Check carrier gas flow rate / velocity. Check for injector leaks. Ensure same solvent being used. Column is contaminated - rinse or replace. Remove 50 cm from front of column. Phase breakdown – replace column.
Poor resolution or loss of resolution	Use correct column or phase. Use different temperature program. Check injector temperature – is it correct for solvent and analytes. Check injection technique. Check carrier flow / velocity. Sample overload - dilute or change split ratio. Contaminated column – rinse or replace. Phase breakdown – replace column.
Phase breakdown	Check for leaks and repair. Check oxygen traps and replace if necessary. Exceeded upper temperature limit of column for extended periods – replace column. Column contamination – replace column (perform extra clean up of samples). Damage due to sample – do not inject strong acid or base samples.
Poor or no detector response for all peaks	Correct injection technique for concentration of analyte. Check proper liner is used for injection technique. Check syringe needle not blocked or plunger is leaking. Check split ratio if using split technique. Check injector temperature is correct. Check detector temperature is correct. Check flow rates of detector gas(es). Error in sample concentration – verify concentrations.
Detector problems	PID - Dirty window – clean according to manufacturer's specifications. ELCD - Faulty reactor tube. - Contaminated alcohol. - Incorrect alcohol flow rate. ECD - Impurities in nitrogen. - Dirty detector; clean (bake) according to manufacturer's specifications. NPD - Bad bead. FID - Partially blocked jet. FPD - Incorrect gas flow rates. - Incorrect filter installed. - Clean filter. TCD - Balance flow rates.

Poor Peak Shape

Problem	Reason	Resolution
Peak Fronting 	Column overload.	Reduce sample concentration or injection volume.
	Incorrect polarity of column for compound.	Use correct column.
Peak Tailing 	Column is active.	Remove first meter of column; recheck; replace column if necessary.
	Active inlet liner.	Replace liner with clean, deactivated liner.
	Incorrect column for analysis.	Use correct column.
	Incorrect column installation.	Check inlet and outlet connections, and for any cold spots.
Peak Splitting 	Poor injection technique.	Refine injection technique.
	Mixed solvents.	Use only single solvent system.
	Poor resolution.	Use different column or change temperature profile.
Ghost Peaks 	Run GC without injection; if ghost peaks disappear then the problem is probably the syringe or solvent; if ghost peaks are still evident then the problem is either the septum or the breakdown of the phase.	
	Contaminated syringe or solvents.	Clean syringe thoroughly and replace solvents.
	Septum bleed.	Replace with new EC septum.
	Breakdown of column phase.	Choose different phase which restricts breakdown.
	Too large an injection volume.	Decrease injection volume.
Specific Peaks Low Response 	Column is active.	Remove first meter of column; recheck; replace column if necessary.
	Active inlet liner.	Replace liner with clean, deactivated liner.
	Incorrect calculation of sample.	Verify calculations.
	FID altered gas flows.	Readjust gas flows.

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