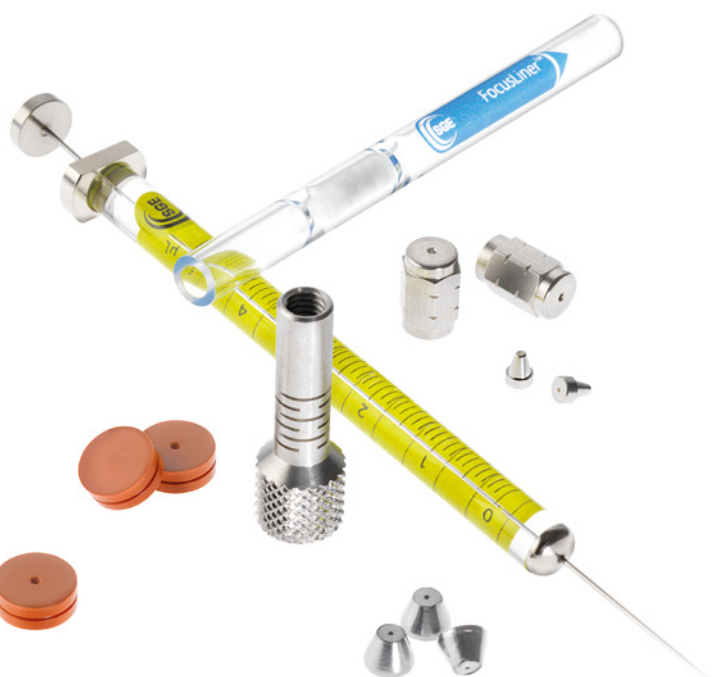
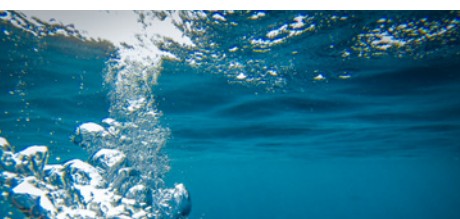




SGE Syringes | Septa | SGE Inlet liners
GC connections

GC supplies

Instrument quick pick guide



In the laboratory today, the time spent and the precision required for sample preparation are key investments in an efficient workflow. Having spent that time and effort in sample preparation it then becomes critical to maintain the integrity of the sample as it is delivered to the separation and detection steps of the analysis. This is why we in Trajan Scientific and Medical are focused on delivering a portfolio of high performance GC injection port liners, GC columns, connections and fittings all with the specific and aggregate intent of ensuring the sample is not compromised on its journey to the detection system.



Our portfolio is built on the strength and world class heritage of SGE GC supplies portfolio. In each of our manufacturing operations around the world, our products are built to exacting performance standards so that you can rely on their performance accuracy and precision.

With a strong team of design chemists and production engineers, and an extensive network of application based industry opinion leaders, our portfolio of GC consumables continues to develop within Trajan. This means you as a user in the laboratory can be assured of your sample integrity through collection, injection, separation and detection, optimizing your analysis.



We are confident that in this selection guide you will be able to identify and select the correct consumables for your application. If you don't, please contact us and we can investigate a custom solution for you.



As a major provider of tools and components for the analytical industry, Trajan is manufacturing product in the USA, Malaysia and Australia and we continue to service our valued customers around the world via a connected group of commercial and distribution facilities in Europe, in the Americas, in Asia and Australia. This supply chain is ably supported by a strong field technical team around the world.

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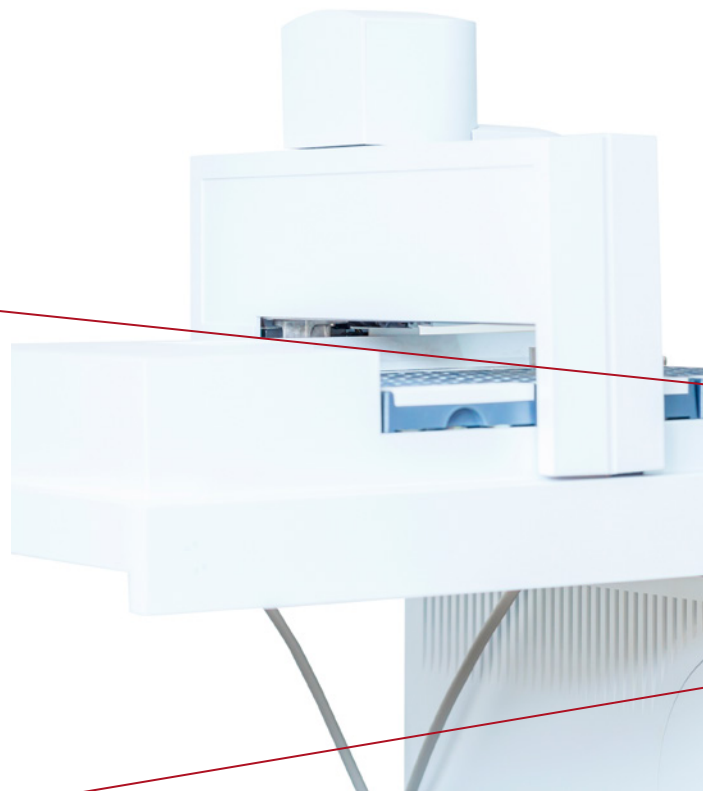
SGE Syringes

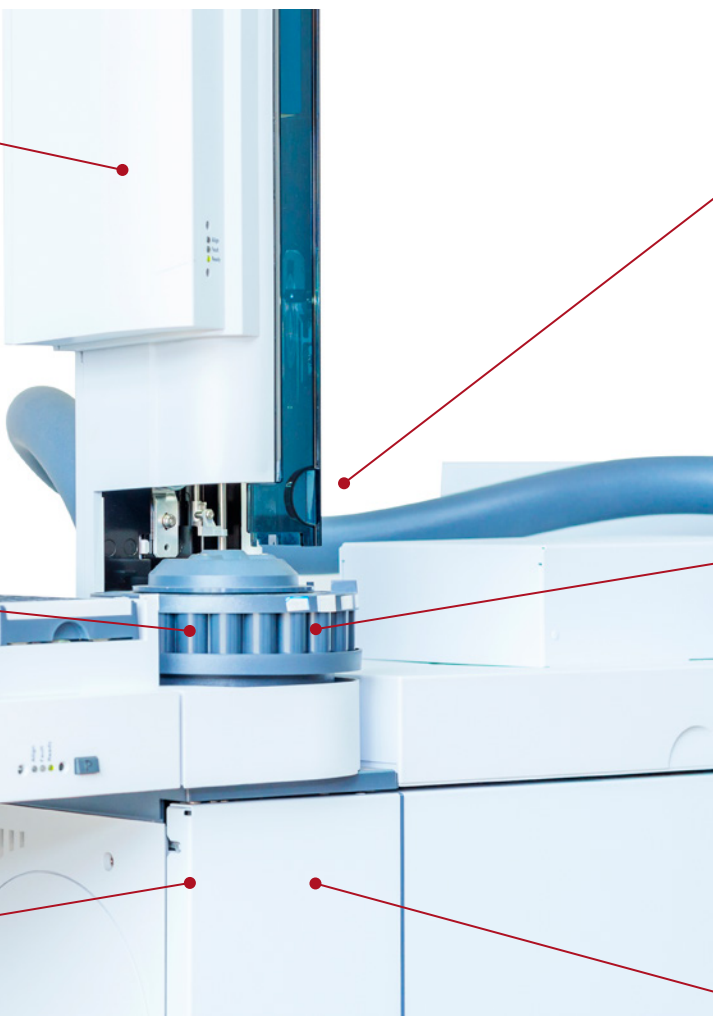


SGE Inlet liners

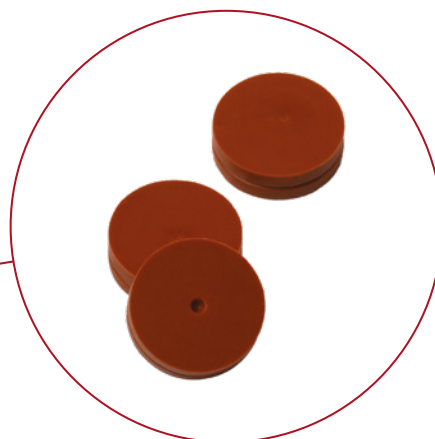


Ferrules





Gas filters



Septa



The combination of components selected for your instrument also make an important contribution to successful separations.

Choose Trajan to improve your chromatography.

Trajan consumables | GC selection



SGE Syringes for autosamplers incorporate a vibrant color scheme, distinguished by volume, enabling easy identification of syringes installed in instruments.

Choose from a comprehensive range of SGE Syringe options including plunger protection, removable or fixed needles, a range of needle gauge and length options as well as needle tip style alternatives.



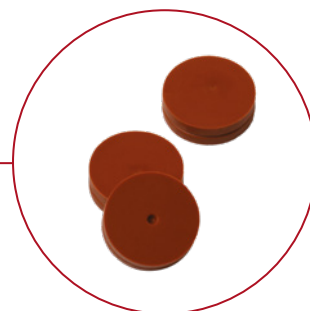
Color	Syringe volumes			
Yellow	1000 nL (1 µL)		1 mL	1000 mL (1 L)
Lime	5000 nL (5 µL)	5 µL	5 mL	
Dark orange		10 µL	10 mL	
Green		25 µL	25 mL	
Purple		50 µL	50 mL	
Aqua		100 µL	100 mL	
Gray		250 µL	2.5 mL	2000 mL (2 L)
Light orange	500 nL (0.5 µL)	500 µL		500 mL (0.5 L)

Septa

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

Desired septa attributes:

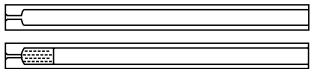
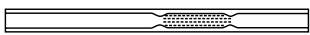
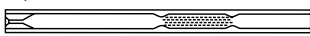
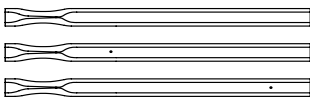
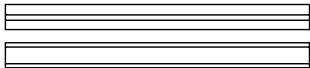
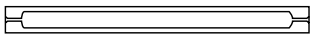
- Reliably seal against the carrier gas pressure in the inlet.
- Capable of being pierced and resealed time after time.
- Must not contaminate or bleed material into the chromatographic system.



Material	Max operating temperature	Key features
GP grade	275°C	Low temperature applications
EC grade	350°C, 300°C for 17 mm size	Low bleed
MN grade	350°C, 300°C for 17 mm size	Premium septa for autosamplers
HT grade	400°C, 330°C for 17 mm size	Outstanding mechanical properties for the highest temperature applications



The SGE 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.

Color	Injection technique	Sample types	Liner geometry
Green	Splitless	- Trace level analyses - Active compounds	Taper/gooseneck 
Blue	Split	- General purpose - Concentrated samples - Dirty samples	FocusLiner® 
Aqua	Splitless	- Trace level analyses - Dirty samples - Wide boiling point range	Tapered FocusLiner® 
Dark orange	Direct	- Trace level analyses - Active compounds	ConnectTite™ 
Purple	Split/splitless	- General purpose - Concentrated samples - Dirty samples (only if quartz wool is present) - Gaseous samples (also purge and trap, headspace)	Straight 
Yellow	Splitless LVI	- Trace level analyses - Low boiling point compounds - Active compounds	Double taper 
Gray	PTV LVI	- Trace level analyses - Large volume injections	PTV/LVI 

Connectors and ferrules

GC connections are designed to minimize 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 and mismatched tubing sizes after temperature cycling.



Material	Uses	Advantages	Limitations
100% Graphite	FID, NPD, high temperature	- Easy-to-use stable seal - Higher temperature limit - Can be easily removed - Can be re-used	- Not for MS or oxygen-sensitive detectors - Soft, easily deformed or destroyed - Possible system contamination
15% Graphite/ 85% Vespel	MS and oxygen-sensitive detectors	- Long lifetime - High temperature limit - MS compatible	- Cannot be re-used - Must be re-tightened after initial temperature cycles
SilTite® metal	MS and oxygen-sensitive detectors	- Long lifetime - High temperature limit - MS compatible	Cannot be re-used



SGE autosampler syringes

All needles are 42 mm long with a cone tip.

Agilent 7673, 7683, 7693A & 6850 ALS

Volume	Needle gauge (OD mm)	Description	Syringe part number	Pack size	Spare needle part number	Pack size
Fixed dual gauge needle						
5 µL	23-26s (0.63/0.47)	5 µL fixed needle Agilent syringe with 4.2 cm 0.63/0.47 mm OD cone tipped dual gauge needle	001821	1	–	–
10 µL	23-26s (0.63/0.47)	10 µL fixed needle Agilent syringe with 4.2 cm 0.63/0.47 mm OD cone tipped dual gauge needle	002821	1	–	–
10 µL gas tight	23-26s (0.63/0.47)	10 µL fixed needle Agilent syringe with GT plunger and 4.2 cm 0.63/0.47 mm OD cone tipped dual gauge needle	002826	1	–	–
Fixed straight needle						
5 µL	26 (0.47)	5 µL fixed needle Agilent syringe with 4.2 cm 0.47 mm OD cone tipped needle	001800	1	–	–
5 µL (m)	23 (0.63)	5 µL fixed needle Agilent syringe with 4.2 cm 0.63 mm OD cone tipped needle	001810	1	–	–
10 µL	26 (0.47)	10 µL fixed needle Agilent syringe with 4.2 cm 0.47 mm OD cone tipped needle	002800	1	–	–
10 µL (m)	23 (0.63)	10 µL fixed needle Agilent syringe with 4.2 cm 0.63 mm OD cone tipped needle	002810	1	–	–
10 µL (m) gas tight	23 (0.63)	10 µL fixed needle Agilent syringe with GT plunger & 4.2 cm 0.63 mm OD cone tipped needle	002812	1	–	–
Removable dual gauge needle						
0.5 µL	23-26s (0.63/0.47)	0.5 µL NanoVolume Agilent syringe with 4.2 cm 0.63/0.47 mm OD dual gauge cone tipped needle	000415	1	033730	1*
10 µL gas tight	23-26s (0.63/0.47)	10 µL removable needle Agilent syringe with GT plunger and 4.2 cm 0.63/0.47 mm OD cone tipped dual gauge needle	002829	1	037730	2
Removable straight needle						
0.5 µL	26 (0.47)	0.5 µL NanoVolume Agilent syringe with 4.2 cm 0.47 mm OD cone tipped needle	000400	1	033708	1*
0.5 µL (m)	23 (0.63)	0.5 µL NanoVolume Agilent syringe with 4.2 cm 0.63 mm OD cone tipped needle	000410	1	033715	1*
1 µL	23 (0.63)	1.0 µL NanoVolume Agilent syringe with 4.2 cm 0.63 mm OD cone tipped needle	000610	1	034715	1*
10 µL	26 (0.47)	10 µL removable needle Agilent syringe with 4.2 cm 0.47 mm OD cone tipped needle	002805	1	037715	2
10 µL (m)	23 (0.63)	10 µL removable needle Agilent syringe with 4.2 cm 0.63 mm OD cone tipped needle	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 types:

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 injections 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	275°C
EC	High temperature silicone	Excellent	Excellent	Excellent	Excellent	350°C
MN	High temperature silicone	Excellent	Excellent	Excellent	Excellent	350°C
HT	BTO silicone	Excellent	Excellent	Excellent	Excellent	400°C

Septa continued

Diameter (mm)	Type	Pack size	Part number
For Agilent 7890, 6890, 5890, 5880, 4890, 6850			
11	GP	50	041826
11	EC	25	041902
11	MN	50	041856
11	HT	25	041898

SGE Inlet liners



Description and geometry	OD (mm)	ID (mm)	Length (mm)	Pack size	Part number
For Agilent 5890, 6850, 6890, 7890 and 4890					
Split/splitless FocusLiner	6.3	4	78.5	5	092002
				25	092219
Split/splitless tapered FocusLiner				5	092003
				25	092011
Split/splitless FAST FocusLiner	6.3	2.3	78.5	5	092005
				25	092008
Split/splitless tapered FAST FocusLiner				5	092111
				25	092115
ConnectTite liner standard	6.3	4	78.5	5	092324
ConnectTite liner top hole				5	092325
ConnectTite liner bottom hole				5	092326
				5	092007
Split, straight-through liner	6.3	4	78.5	25	092222
				5	092001
Split, with quartz wool				25	092220
				5	092017
Split/splitless with single taper	6.3	4	78.5	25	092229
				5	092019
Split/splitless with single taper (quartz wool)				25	092218
				5	092018
Split/splitless with double taper	6.3	4	78.5	25	092230
				5	092016
Direct, straight-through liner				25	092224
				5	092004
Split/splitless quartz, straight-through liner	6.3	2	78.5	5	092013
				5	092010
Splitless with recessed gooseneck				5	092010
Split/splitless recessed gooseneck (quartz wool)				5	092010

O-rings and sealing rings

Description	Usage	Pack size	Part number
Viton o-ring	Temperatures up to 300°C. Suitable for liners with OD of 6.3 mm	10	0726532
Graphite sealing ring	Temperatures up to 450°C. Suitable for all inlet liners above except 092004 and 09200401	10	0726005
Graphite sealing ring	Temperatures up to 450°C. Suitable for use with liners 092004 and 09200401	10	0726006

SilTite FingerTite® ferrules



Description	Column ID	Ferrule ID	Pack size	Part number
SilTite FingerTite Agilent INJ/FID kit	0.1-0.25 mm	0.4 mm	*	073610
SilTite FingerTite Agilent capillary/FID kit	0.1-0.25 mm	0.4 mm	*	073611
SilTite FingerTite Agilent INJ/MS kit	0.1-0.25 mm	0.4 mm	*	073612
SilTite FingerTite Agilent INJ/FID kit	0.53 mm	0.7 mm	*	07361053
SilTite FingerTite Agilent injector kit	0.53 mm	0.7 mm	*	07361054
Replacement parts				
SilTite FingerTite ferrule 0.4 mm	0.1-0.25 mm	0.4 mm	10	073630
SilTite FingerTite ferrule 0.5 mm	0.32 mm	0.5 mm	10	073631
SilTite FingerTite ferrule 0.7 mm	0.53 mm	0.7 mm	10	073632
SilTite FingerTite blanking ferrule	–	–	2	073633
SilTite FingerTite female nut	–	–	5	073636
SilTite FingerTite INJ base seal	0.1-0.25 mm	–	2	073640
SilTite FingerTite capillary adapter	–	–	1	0736101
SilTite FingerTite MS adapter	–	–	1	0736102
SilTite FingerTite FID detector	–	–	1	0736103
SilTite FingerTite injector	0.1-0.25 mm	–	1	0736104

* Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite FingerTite system. In addition there are five SilTite FingerTite nuts, ten 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 number
15% Graphite/85% Vespel® ferrules				
Injectors and 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
GCMS 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 and detectors at atmospheric pressure e.g. FID (not for GCMS)	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				
GCMS 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
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				
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				
GCMS interface connection	–	–	5	073224
Split/splitless injector	–	–	5	073226
Replacement SilTite base seals				
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.



SGE autosampler syringes

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

PerkinElmer AutoSystem

Volume	Needle gauge (OD mm)	Description	Syringe part number	Pack size	Spare needle part number	Pack size	Spare plunger part number	Pack size
Fixed needle								
5 µL	26 (0.47)	5 µL fixed needle PerkinElmer syringe with 7 cm 0.47 mm OD cone tipped needle	001953	1	–	–	–	–
5 µL	23 (0.63)	5 µL fixed needle PerkinElmer syringe with 7 cm 0.63 mm OD cone tipped needle	001954	1	–	–	–	–
5 µL gas tight	26 (0.47)	5 µL fixed needle PerkinElmer syringe with 7 cm 0.47 mm OD cone tipped needle	001955	1	–	–	031807	2
5 µL gas tight	23 (0.63)	5 µL fixed needle PerkinElmer syringe with GT plunger and 7 cm 0.63 mm OD cone tipped needle	001957	1	–	–	031807	2
50 µL	23 (0.63)	50 µL fixed needle PerkinElmer syringe with 7 cm 0.63 mm OD cone tipped needle	004670	1	–	–	–	–
Removable needle								
0.5 µL	26 (0.47)	0.5 µL NanoVolume PerkinElmer Syringe with 7 cm 0.47 mm OD cone tipped needle	000475	1	033750	1*	–	–
0.5 µL (m)	23 (0.63)	0.5 µL NanoVolume PerkinElmer syringe with 7 cm 0.63 mm OD cone tipped needle	000478	1	033765	1*	–	–

* Denotes spare needle and plunger kit.

Septa

Choose from a number of different septa types:

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 injections per septum.

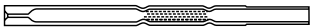
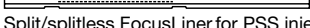
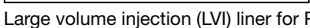
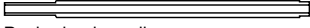
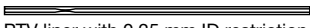
HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

Type	Material	Durability	Resealing	Solvent resistance	Tear resistance	Maximum temperature
GP	Silicone	Good	Good	Excellent	Good	275°C
EC	High temperature silicone	Excellent	Excellent	Excellent	Excellent	350°C
MN	High temperature silicone	Excellent	Excellent	Excellent	Excellent	350°C
HT	BTO silicone	Excellent	Excellent	Excellent	Excellent	400°C

Diameter (mm)	Type	Pack size	Part number
For PerkinElmer AutoSystem and Clarus 500, 600			
11	GP	48	041826
11	EC	25	041902
11	MN	48	041856
11	HT	25	041898

SGE Inlet liners



Description and geometry	OD (mm)	ID (mm)	Length (mm)	Pack size	Part number
For PerkinElmer AutoSystem and Clarus 500, 600					
 Split/splitless single tapered liner	6.2	4	92	5	0920990
 Split/splitless FocusLiner	6.2	4	92	5	092092
				25	09209225
 Split/splitless tapered FocusLiner	6.2	4	92	5	092095
				25	09209525
 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
PTV liner					
 PTV liner with 0.25 mm ID restriction (recessed gooseneck)	2	1	88	5	092097

O-rings and sealing rings

Description	Usage	Pack size	Part number
Viton o-ring	Temperatures up to 300°C. For use with 6.2 mm OD liners	10	0726536
Graphite Vespel sealing ring for PSS system	Temperatures up to 325°C. For use with 4 mm OD liners	10	0726522

SilTite FingerTite ferrules



Description	Column ID	Ferrule ID	Pack size	Part number
SilTite FingerTite PerkinElmer injector/GCMS starter kit	0.1-0.25 mm	0.4 mm	*	073623
SilTite FingerTite PerkinElmer injector/FID starter kit	0.1-0.25 mm	0.4 mm	*	073622
Replacement parts				
SilTite FingerTite ferrule 0.4 mm	0.1-0.25 mm	0.4 mm	10	073630
SilTite FingerTite ferrule 0.5 mm	0.32 mm	0.5 mm	10	073631
SilTite FingerTite ferrule 0.7 mm	0.53 mm	0.7 mm	10	073632
SilTite FingerTite blanking ferrule	–	–	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. In addition there are five SilTite FingerTite nuts, ten 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 number
15% Graphite/85% Vespel ferrules					
For injectors and 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
	for 1/8" OD packed columns	1/8"	1/8"	10	072669
	for 1/4" OD packed columns	1/4"	1/4"	10	072667
100% graphite ferrules					
Injectors and detectors at atmospheric pressure e.g. FID (not for GCMS)	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					
GCMS 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					
GCMS 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					
SilTite metal nuts	–	–	–	5	073224

* Includes ten ferrules, two SilTite nuts.



SGE autosampler syringes

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

Shimadzu AOC14, AOC17 and AOC20

Volume	Needle gauge (OD mm)	Description	Syringe part number	Pack size	Spare needle part number	Pack size	Spare plunger part number	Pack size
Fixed needle								
5 µL	23 (0.63)	0.5 µL fixed needle Shimadzu syringe with 4.2 cm 0.63 mm OD cone tipped needle	001988	1	–	–	–	–
Removable needle								
0.5 µL	26 (0.47)	0.5 µL NanoVolume Shimadzu syringe with 4.2 cm 0.47 mm OD cone tipped needle	000440	1	033738	1*	–	–
0.5 µL	23 (0.63)	0.5 µL NanoVolume Shimadzu syringe with 4.2 cm 0.63 mm OD cone tipped needle	000445	1	033745	1*	–	–
10 µL	26 (0.47)	10 µL removable needle Shimadzu syringe with 4.2 cm 0.47 mm OD cone tipped needle	002897	1	037745	2	–	–
10 µL	23 (0.63)	10 µL removable needle Shimadzu syringe with 4.2 cm 0.63 mm OD cone tipped needle	002898	1	037747	2	–	–
10 µL gas tight	23 (0.63)	10 µL removable needle Shimadzu syringe with GT plunger and 4.2 cm 0.63 mm OD cone tipped needle	002902	1	037747	2	031798	2

* Denotes spare needle and plunger kit.

Part number	Part description and detail	Replacement needle (* needle and plunger kit)	Replacement plunger
CTC Analytics RTC and Thermo Scientific TriPlus RSH			
000480	0.5 µL NanoVolume CTC RTC & Thermo RSH Syringe with 5.7 cm 0.63 mm OD Cone Tipped Needle	033780*	
000680	1.0 µL NanoVolume CTC RTC & Thermo RSH Syringe with 5.7 cm 0.63 mm OD Cone Tipped Needle	034780*	
001865	5 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.47 mm OD Cone Tipped Needle		
001861	5 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.63 mm OD Cone Tipped Needle		
001863	5 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 8.5 cm 0.63 mm OD Cone Tipped Needle		
001875	5 µL Removable Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.47 mm OD Cone Tipped Needle	036875	
001871	5 µL Removable Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.63 mm OD Cone Tipped Needle	036871	
001877	5 µL Removable Needle CTC RTC & Thermo RSH Syringe with 8.5 cm 0.47 mm OD Cone Tipped Needle	036877	
002865	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.47 mm OD Cone Tipped Needle		
002861	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.63 mm OD Cone Tipped Needle		
002869	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 8.5 cm 0.47 mm OD Bevel Tipped Needle		
002867	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 8.5 cm 0.47 mm OD Cone Tipped Needle		
002863	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with 8.5 cm 0.63 mm OD Cone Tipped Needle		

Part number	Part description and detail	Replacement needle (* needle and plunger kit)	Replacement plunger
002866	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle		
002862	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle		032810
002868	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle		032810
002864	10 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle		032810
002875	10 µL Removable Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.47 mm OD Cone Tipped Needle	037875	
002871	10 µL Removable Needle CTC RTC & Thermo RSH Syringe with 5.7 cm 0.63 mm OD Cone Tipped Needle	037871	
002790	10 µL Removable Needle CTC RTC & Thermo RSH Diamond MS Syringe with GT Plunger	Refer Diamond MS PDPN-1005-G	0355190
002876	10 µL Removable Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle	037875	032810
002872	10 µL Removable Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle	037871	032810
002878	10 µL Removable Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle	037877	032810
002874	10 µL Removable Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle	037873	032810
003866	25 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle		032815
003862	25 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle		032815
003868	25 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle		032815
003864	25 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle		032815
003790	25 µL Removable Needle CTC RTC & Thermo RSH Diamond MS Syringe with GT Plunger	Refer Diamond MS PDPN-1005-G	0355191
004866	50 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle		032821
004862	50 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle		032821
004868	50 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle		032821
004864	50 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle		032821
004790	50 µL Removable Needle CTC RTC & Thermo RSH Diamond MS Syringe with GT Plunger	Refer Diamond MS PDPN-1005-G	0355192
005866	100 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle		032825
005862	100 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle		032825
005890	100 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Side Hole Needle		032825
005868	100 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle		032825
005864	100 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle		032825
005891	100 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Side Hole Needle		032825
005790	100 µL Removable Needle CTC RTC & Thermo RSH Diamond MS Syringe with GT Plunger	Refer Diamond MS PDPN-1005-G	0355193
006866	250 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle		032831
006862	250 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle		032831
006890	250 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Side Hole Needle		032831
006868	250 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle		032831
006864	250 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle		032831
006891	250 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Side Hole Needle		032831

Part number	Part description and detail	Replacement needle (* needle and plunger kit)	Replacement plunger
007866	500 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.47 mm OD Cone Tipped Needle		032835
007862	500 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Cone Tipped Needle		032835
007890	500 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 5.7 cm 0.63 mm OD Side Hole Needle		032835
007868	500 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.47 mm OD Cone Tipped Needle		032835
007864	500 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Cone Tipped Needle		032835
007891	500 µL Fixed Needle CTC RTC & Thermo RSH Syringe with GT Plunger & 8.5 cm 0.63 mm OD Side Hole Needle		032835
008155	1 mL Fixed Needle CTC RTC & Thermo RSH Head Space Syringe with Energized GT Plunger & 6.5 cm 0.63 mm OD Side Hole Needle		032841
008655	2.5 mL Fixed Needle CTC RTC & Thermo RSH Head Space Syringe with Energized GT Plunger & 5.6 cm 0.63 mm OD Side Hole Needle		032846

Septa

Choose from a number of different septa types:

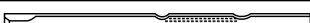
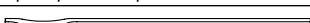
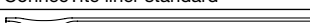
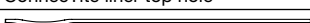
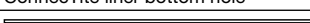
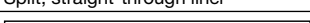
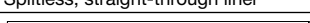
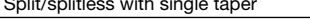
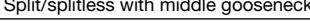
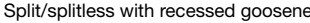
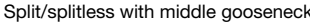
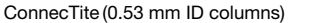
- Enduro blue = For non-demanding routine applications.
- EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
- HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

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	350°C
HT	BTO silicone	Excellent	Excellent	Excellent	Excellent	400°C

Type	Pack size	Part number
Shimadzu GC-2030, GC-2014, GC-2010 and GC-17A		
Enduro blue	50	041890
EC	50	041905
HT	50	041895

SGE Inlet liners



Description and geometry	OD (mm)	ID (mm)	Length (mm)	Pack size	Part number
For GC-2030 (SPL-2030 injector), GC-2014 (SPL-2014 injector), GC-2010 (SPL-2010 injector) and GC-17A (SPL-17A 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
 ConnectTite liner standard	5	3.4	95	5	092329
 ConnectTite liner top hole	5	3.4	95	5	092330
 ConnectTite 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
 ConnectTite (0.53 mm ID columns)	5	2.6	95	5	092087
 SPME liner	5	0.75	95	5	092089

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

O-rings and sealing rings

Description	Usage	Pack size	Part number
Viton o-ring	Temperatures up to 300°C. For GC-2030 (SPL-2030 injector), GC-2014 (SPL-2014 injector) and GC-2010 (SPL-2010 injector)	10	0726533
Graphite sealing ring	Temperatures up to 450°C. For GC-17A (SPL-17A injector)	10	0726007

SilTite FingerTite ferrules



Description	Column ID	Ferrule ID	Pack size	Part number
SilTite FingerTite Shimadzu GC-2030 and GC-2010 INJ/FID starter kit	0.1-0.25 mm	0.4 mm	*	073619
SilTite FingerTite Shimadzu GC-2030 and GC-2010 INJ/MS starter kit	0.1-0.25 mm	0.4 mm	*	073618
SilTite FingerTite Shimadzu GC-2030 and GC-2010 INJ/FID starter kit	0.53 mm	0.7 mm	*	07362053

SilTite FingerTite ferrules continued

Description	Column ID	Ferrule ID	Pack size	Part number
Replacement parts				
SilTite FingerTite ferrule 0.4 mm	0.1-0.25 mm	0.4 mm	10	073630
SilTite FingerTite ferrule 0.5 mm	0.32 mm	0.5 mm	10	073631
SilTite FingerTite ferrule 0.7 mm	0.53 mm	0.7 mm	10	073632
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. In addition there are five SilTite FingerTite nuts, ten 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 number
GC-2030, GC-2014, GC-2010 and GC-17A 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
Replacement SilTite nuts			
GC-2030/GC-2010 GCMS system		5	073224
GC-2030/GC-2010 GCMS system with QP5000 series MS		5	073224
GC-2030/GC-2014/GC-2010 GC injectors and atmospheric detectors		5	073224
QP5000 jet separator MS interface		5	073224
QP5000 direct MS interface		5	073233
All injectors jet separator (starter kit), except GC-2030/GC-2014/GC-2010		5	073232

* Includes ten ferrules, two SilTite nuts.



SGE autosampler syringes

All needles have a cone tip style.

Thermo Scientific TriPlus RSH

Volume	Needle gauge (OD mm)	Needle length (mm)	Description	Syringe part number	Pack size
Removable needle					
5 µL	23 (0.47)	57	5 µL removable needle CTC RTC and Thermo RSH syringe with 5.7 cm 0.63 mm OD cone tipped needle	001871	1
5 µL	26 (0.47)	57	5 µL removable needle CTC RTC and Thermo RSH syringe with 5.7 cm 0.47 mm OD cone tipped needle	001875	1
10 µL	23 (0.47)	57	10 µL removable needle CTC RTC and Thermo RSH syringe with 5.7 cm 0.63 mm OD cone tipped needle	002871	1
10 µL	26 (0.47)	57	10 µL removable needle CTC RTC and Thermo RSH syringe with 5.7 cm 0.47 mm OD cone tipped needle	002875	1
Fixed needle					
10 µL	23 (0.63)	57	10 µL fixed needle CTC RTC and Thermo RSH syringe with 5.7 cm 0.63 mm OD cone tipped needle	002861	1
10 µL gas tight	23 (0.63)	57	10 µL fixed needle CTC RTC and Thermo RSH syringe with GT plunger and 5.7 cm 0.63 mm OD cone tipped needle	002862	1
10 µL	23 (0.63)	85	10 µL fixed needle CTC RTC and Thermo RSH syringe with 8.5 cm 0.63 mm OD cone tipped needle	002863	1
10 µL gas tight	23 (0.63)	85	10 µL fixed needle CTC RTC and Thermo RSH syringe with GT plunger and 8.5 cm 0.63 mm OD cone tipped needle	002864	1
10 µL	26 (0.47)	57	10 µL fixed needle CTC RTC and Thermo RSH syringe with 5.7 cm 0.47 mm OD cone tipped needle	002865	1
10 µL gas tight	26 (0.47)	57	10 µL fixed needle CTC RTC and Thermo RSH syringe with GT plunger and 5.7 cm 0.47 mm OD cone tipped needle	002866	1
10 µL	26 (0.47)	85	10 µL fixed needle CTC RTC and Thermo RSH syringe with 8.5 cm 0.47 mm OD cone tipped needle	002867	1
10 µL gas tight	26 (0.47)	85	10 µL fixed needle CTC RTC and Thermo RSH syringe with GT plunger and 8.5 cm 0.47 mm OD cone tipped needle	002868	1

Septa

Choose from a number of different septa types:

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 injections per septum.

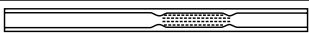
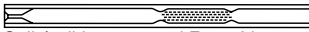
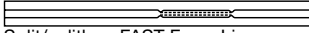
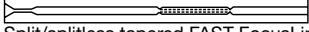
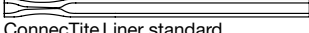
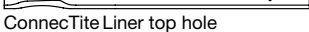
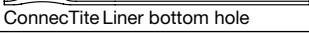
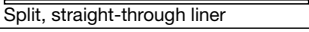
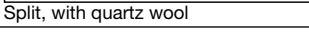
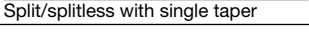
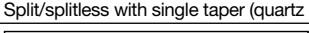
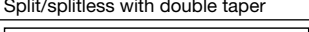
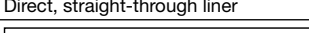
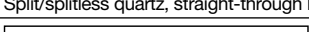
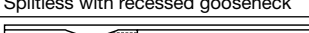
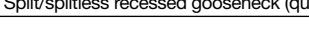
HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

Type	Material	Durability	Resealing	Solvent resistance	Tear resistance	Maximum temperature
GP	Silicone	Good	Good	Excellent	Good	275°C
EC	High temperature silicone	Excellent	Excellent	Excellent	Excellent	350°C
MN	High temperature silicone	Excellent	Excellent	Excellent	Excellent	350°C
HT	BTO silicone	Excellent	Excellent	Excellent	Excellent	400°C

Diameter (mm)	Type	Pack size	Part number
For Thermo Scientific TRACE 1300 Series GC			
11	GP	48	041826
11	EC	25	041902
11	MN	48	041856
11	HT	25	041898

SGE Inlet liners



Description and geometry	OD (mm)	ID (mm)	Length (mm)	Pack size	Part number
For Thermo Scientific TRACE 1300 Series GC					
 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
 ConnectTite Liner standard	6.3	4	78.5	5	092324
 ConnectTite Liner top hole	6.3	4	78.5	5	092325
 ConnectTite 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

O-rings and sealing rings

Description	Usage	Pack size	Part number
For Thermo Scientific TRACE 1300 Series GC			
Viton o-ring	Temperatures up to 300°C. Suitable for liners with OD of 6.3 mm	10	0726532
Graphite sealing ring	Temperatures up to 450°C. Suitable for all inlet liners above except 092004 and 09200401	10	0726005
Graphite sealing ring	Temperatures up to 450°C. Suitable for use with liners 092004 and 09200401	10	0726006

SilTite FingerTite ferrules



Description	Column ID	Ferrule ID	Pack size	Part number
For Thermo Scientific TRACE 1300 Series GC				
SilTite FingerTite INJ/FID starter kit	0.1-0.25 mm	0.4 mm	*	073610
SilTite FingerTite capillary/FID starter kit	0.1-0.25 mm	0.4 mm	*	073611
SilTite FingerTite INJ/MS starter kit	0.1-0.25 mm	0.4 mm	*	073612
Replacement parts				
SilTite FingerTite ferrule 0.4 mm	0.1-0.25 mm	0.4 mm	10	073630
SilTite FingerTite ferrule 0.5 mm	0.32 mm	0.5 mm	10	073631
SilTite FingerTite ferrule 0.7 mm	0.53 mm	0.7 mm	10	073632
SilTite FingerTite ferrule blanking	–	–	2	073633
SilTite FingerTite female nut	–	–	5	073636
SilTite FingerTite INJ base seal	0.1-0.25 mm	–	2	073640
SilTite FingerTite MS adapter	–	–	1	0736102
SilTite FingerTite injector	0.1-0.25 mm	–	1	0736104

* Each starter kit includes all the parts necessary to convert one GC system (one injector and one detector) to the SilTite FingerTite system. In addition there are five SilTite FingerTite nuts, ten 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 number
SilTite metal ferrules				
GCMS interface connection (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 nuts				
SilTite metal nuts	–	–	5	073224

* Includes ten ferrules, two SilTite nuts.

Ferrules continued

Instrument	Column ID	Ferrule ID	Pack size	Part number
15% Graphite/85% Vespel ferrules				
For TRACE 1300 injectors and 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 GCMS 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 TRACE 1300 injectors and detectors at atmospheric pressure e.g. FID (not for GCMS)	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
Replacement SiTite metal ferrules				
For All GCMS 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
For 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 SiTite nuts				
SiTite metal nuts	–	–	5	073230
For TRACE 1300 GCMS interface connection	–	–	5	073224
For TRACE 1300 split/splitless injector	–	–	5	073226
Replacement SiTite base seals				
For TRACE 1300 split/splitless injector	–	–	2	073400
	–	–	10	073401

* Includes ten ferrules, two SiTite nuts. # To be used in combination with brass nut (part no. 1034085).

Gas filters

Gas filters

Gas filters are an essential part of your GC analysis as contaminants in gases can significantly impact the quality of results. Oxygen, hydrocarbons and moisture can lead to problems such as noisy baselines, moisture entering the GC column, excessive bleed and septa degradation. Even if carrier gas is of the highest quality, contaminants can be picked up from every part of the gas line. Therefore, a gas filter is needed to ensure that maximum productivity is achieved.



Filter selection guide

Technique	Recommended filter(s)	Advantages
GCMS	Carrier gas	High data accuracy, lower maintenance
GC column	Moisture and oxygen	Longer lifetime
Electron capture detectors (GC)	Moisture and oxygen	High sensitivity
Thermal conductivity detectors (GC)	Moisture and oxygen	High sensitivity, lower maintenance
Flame ionization detectors (GC)	Two hydrocarbon	High sensitivity
Photoionization detectors (GC)	Oxygen and hydrocarbon	High sensitivity

Gas filter technical specifications

	Oxygen filter	Moisture filter	Hydrocarbon filter	Carrier gas filter
Function	Removes oxygen as well as traces of sulfur and chlorine compounds from carrier gas	Removes water, oil and other foreign material from the carrier gas	Removes organic compounds from gas streams	Single combination filter; removes water, oxygen and organic compounds
Indicator color change	From green to gray	From green to pale brown	No indicator	Oxygen: from green to gray Moisture: from green to pale brown Hydrocarbons: no indicator
Capacity	150 mL oxygen	7.2 g water	Approximately 7 g, depending on impurities	100 mL oxygen, 1 g water, organics depending on impurities
Outlet concentration at operating flow of 1-10 L/min	<50 ppb	<0.1 ppm	<0.1 ppm	Oxygen <50 ppb Moisture <0.1 ppm Organics <0.1 ppm

Gas filters ordering information

Gas filters

Part number	Part description and detail
1035230	Gas filter - Hydrocarbon
1035220	Gas filter - Moisture
1035210	Gas filter - Oxygen
1035250	Gas filter - Carrier gas

Connecting units

Part number	Part description and detail
1035004	Gas filter connecting unit 1/4" (high flow)
1035008	Gas filter connecting unit 1/8" (high flow)
1035044	Gas filter connecting unit 1/4" (4 position)
1035048	Gas filter connecting unit 1/8" (4 position)
1035024	Gas filter connecting unit 1/4" (2 position)
1035028	Gas filter connecting unit 1/8" (2 position)
1035014	Gas filter connecting unit 1/4" (1 position)
1035018	Gas filter connecting unit 1/8" (1 position)

Gas filter kits

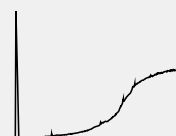
Part number	Part description and detail
1035154	Gas filter kit - Carrier gas 1/4" (1 gas filter, connecting unit - 1 position)
1035158	Gas filter kit - Carrier gas 1/8" (1 gas filter, connecting unit - 1 position)
1035164	Gas filter kit - FID 1/4" (4 gas filters, connecting unit - 4 position)
1035168	Gas filter kit - FID 1/8" (4 gas filters, connecting unit - 4 position)

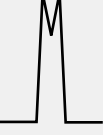
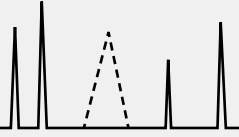
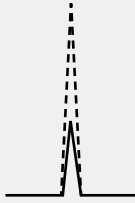
Big Trap gas filter

Big Traps

Part number	Part description and detail
1035334	Big Trap gas filter 1/4" - Hydrocarbon
1035338	Big Trap gas filter 1/8" - Hydrocarbon
1035324	Big Trap gas filter 1/4" - Moisture
1035328	Big Trap gas filter 1/8" - Moisture
1035314	Big Trap gas filter 1/4" - Oxygen
1035318	Big Trap gas filter 1/8" - Oxygen
1035344	Big Trap gas filter 1/4" - Universal
1035348	Big Trap gas filter 1/8" - Universal
1035300	Big Trap mounting clip, PK2

Expert tips

Problem	Reason	Resolution
No column flow	Incorrect gas flow rate	Check carrier gas flow and adjust
	Incorrect septa	Replace septa/injector seal with EC septa
	Issue with column	Visually check column integrity i.e. is it broken? Remove section if small enough or replace column
 High column bleed	Exceeding maximum column temperature	Check published maximum temperature and replace column if necessary
	Incorrect gas flow rate	Check carrier flow rates/velocity are correct for column/length - adjust if necessary
	Incorrect column installation	Check column has not moved in detector
	System leaks	Check for leaks produced during initial heating
	Saturated filter	Check the oxygen gas filter is not saturated - replace if necessary
	Detector temperature	Make sure detector temperature is higher than final column temperature if possible
	Dirty detector	Check cleanliness of detector - clean if necessary
	Insufficient column conditioning	Recondition column - re-run conditioning program
	Column performance	Cut 50 cm from the front end of the column
Retention time shifts	Incorrect temperature program	Check temperature program
	Incorrect injector temperature	Check injector temperature
	Poor injection technique	Ensure manual injection technique is consistent#
	Incorrect gas flow rate	Check carrier gas flow rate/velocity
	System leaks	Check for injector leaks
	Solvent variability	Ensure same solvent being used
	Column contamination	Rinse or replace column
	Column performance	Cut 50 cm from the front end of the column
	Phase breakdown	Replace column
Phase breakdown	System leaks	Check for leaks and repair
	Saturated oxygen traps	Check oxygen traps and replace if necessary
	Exceeding maximum column temperature	Check published maximum temperature and replace column if necessary
	Column contamination	Rinse or replace column
	Damage due to sample	Do not inject strong acid or base samples
 Poor or no detector response for all peaks	Injection technique	Ensure correct injection technique for concentration of analyte
	Incorrect liner	Check correct liner is used for injection technique
	Blocked syringe	Check syringe needle is not blocked nor plunger is not leaking
	Split ratio	Check split ratio if using split technique
	Injector temperature	Check injector temperature is correct
	Detector temperature	Check detector temperature is correct
	Flow rates	Check flow rates of detector gas(es)
	Sample concentrations	Verify concentrations of sample
Detector problems	PID - Dirty window	Clean or replace window
	ELCD - Faulty reactor tube	Replace tube
	ELCD - Contaminated alcohol	Use fresh alcohol
	ELCD - Incorrect alcohol flow rate	Adjust alcohol flow rate
	ECD - Impurities in nitrogen	Use pure nitrogen or use a gas filter
	ECD - Dirty detector	Clean the detector
	NPD - Bad bead	Replace the bead
	FID - Partially blocked jet	Clean jet
	FPD - Incorrect gas flow rates	Adjust gas flow rate
	FPD - Incorrect filter installed	Replace filter with correct version
	TCD - Flow rates	Adjust gas flow rate

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
Split peaks 	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

GC supplies

Instrument quick pick guide

Trajan has a range of SGE GC columns that meet the requirements of todays challenging separations.



Visit us at www.trajanscimed.com or contact your regional Trajan representative for assistance and further information.

Your Trajan Representative



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Trajan Scientific and Medical

Science that benefits people

Trajan is actively engaged in developing and delivering solutions that have a positive impact on human wellbeing. Our vision revolves around collaborative partnerships that improve workflows, delivering better results.