TRAJAN


SilTite FingerTite®

SGE

SGE Syringes | Septa | SGE Inlet liners
GC connections

# GC supplies

## Instrument quick pick guide

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TRAJAN

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.

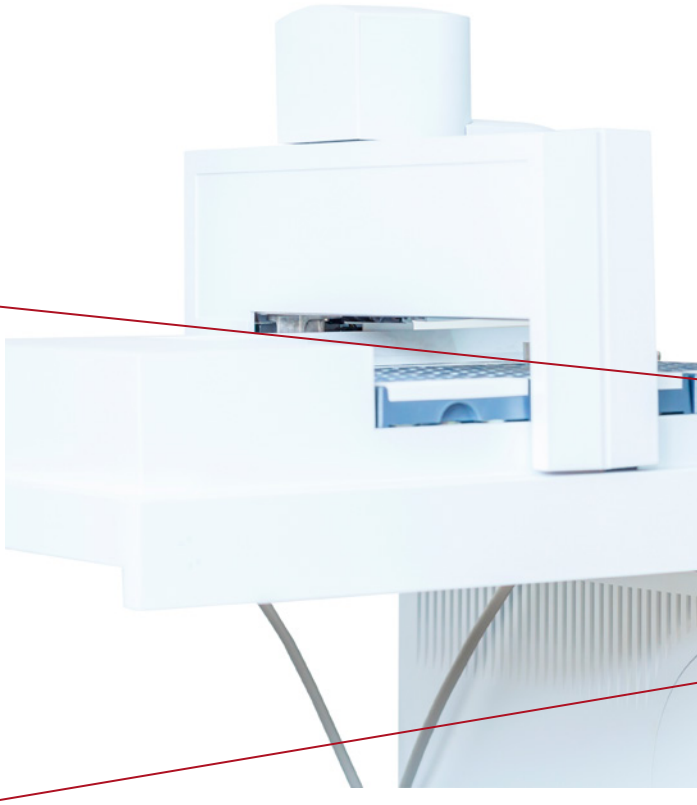
We are confident that in this selection guide you will be able to identify and select the correct consumables for your application. If you don't, please contact us and we can investigate a custom solution for you.

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.

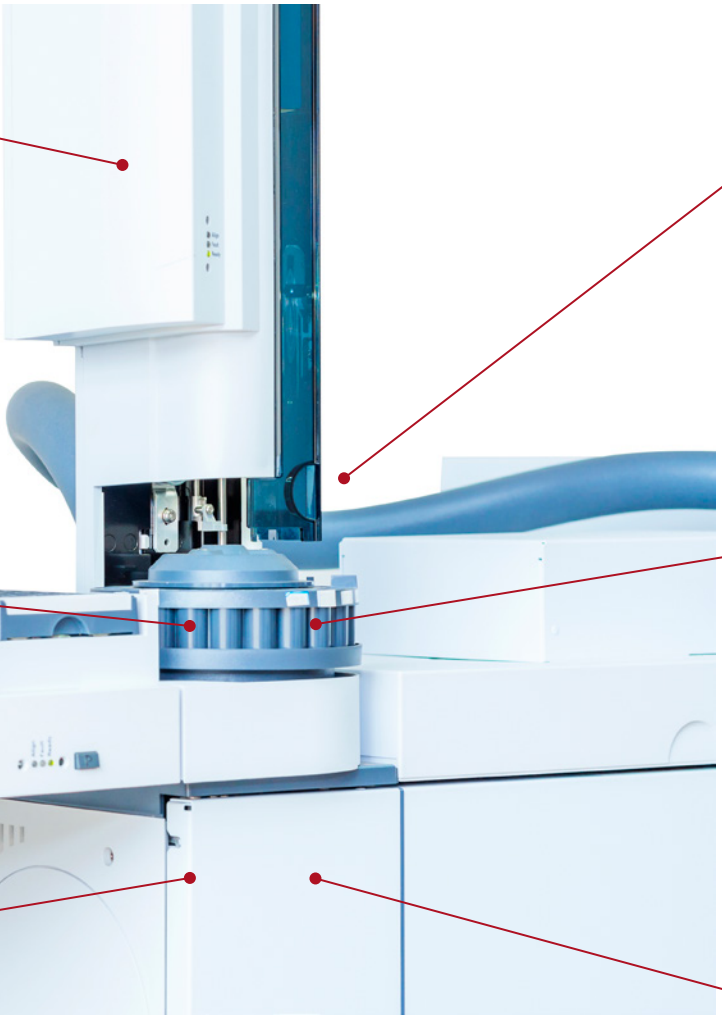
## Contents

SGE Syringes

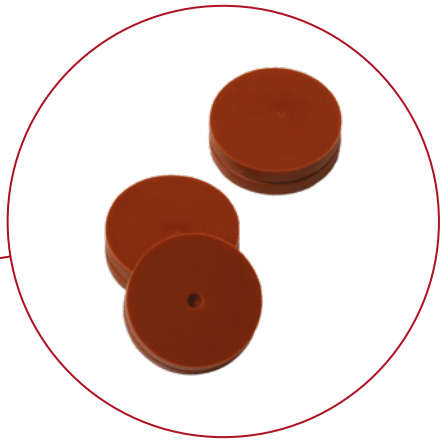

SGE Inlet liners



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.

SGE GC columns

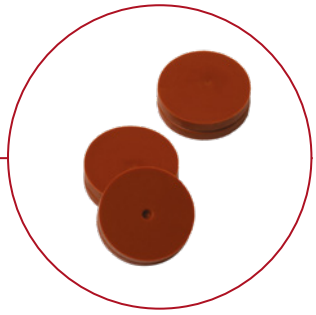
## SGE Syringes

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 |

## SGE Inlet liners

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<br>• Active compounds | Taper/gooseneck |
| Blue | Split | • General purpose<br>• Concentrated samples<br>• Dirty samples | FocusLiner® |
| Aqua | Splitless | • Trace level analyses<br>• Dirty samples<br>• Wide boiling point range | Tapered FocusLiner® |
| Dark orange | Direct | • Trace level analyses<br>• Active compounds | ConnecTite™ |
| Purple | Split/splitless | • General purpose<br>• Concentrated samples<br>• Dirty samples (only if quartz wool is present)<br>• Gaseous samples (also purge and trap, headspace) | Straight |
| Yellow | Splitless<br>LVI | • Trace level analyses<br>• Low boiling point compounds<br>• Active compounds | Double taper |
| Gray | PTV<br>LVI | • Trace level analyses<br>• 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<br>• Higher temperature limit<br>• Can be easily removed<br>• Can be re-used | • Not for MS or oxygen-sensitive detectors<br>• Soft, easily deformed or destroyed<br>• Possible system contamination |
| 15% Graphite/ 85% Vespel | MS and oxygen-sensitive detectors | • Long lifetime<br>• High temperature limit<br>• MS compatible | • Cannot be re-used<br>• Must be re-tightened after initial temperature cycles |
| SilTite® metal | MS and oxygen-sensitive detectors | • Long lifetime<br>• High temperature limit<br>• 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:

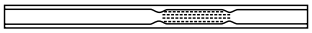
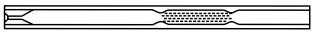
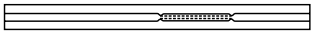
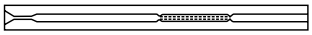
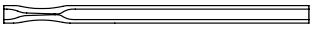
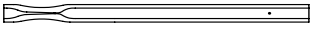
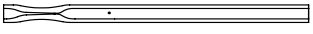
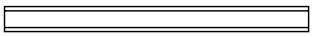
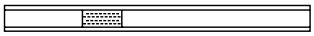
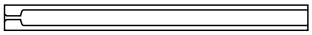
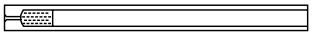
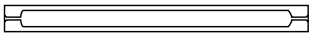
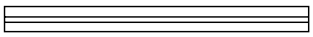
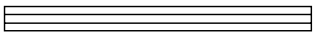
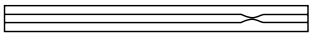
GP = For non-demanding routine applications.
EC = Combines significantly longer injection life, low bleed and low injection port adhesion.
MN = Premium septa for autosamplers, up to 400 injections per septum.
HT = Bleed and temperature optimized, combined with outstanding mechanical properties.

| 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 | 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 |

## 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

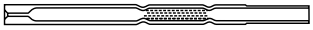
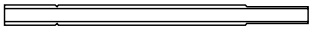
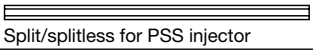
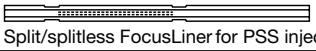
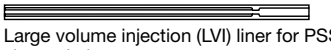
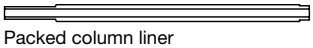
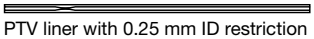
### Choose from a number of different septa types:

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

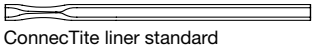
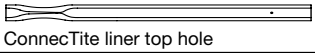
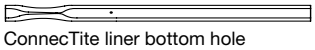
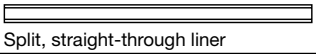
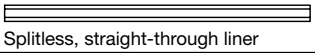
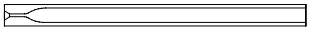
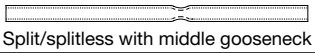
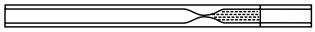
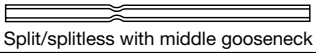
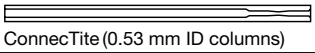
## Choose from a number of different septa types:

- 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 |
|  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 |

* 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

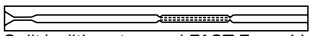
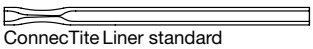
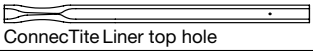
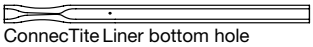
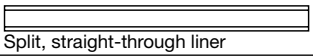
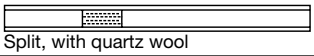
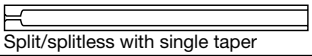
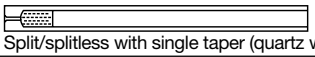
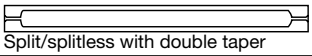
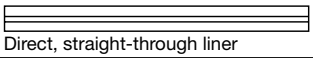
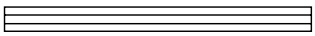
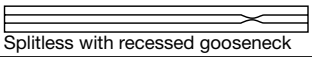
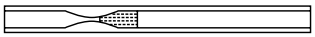
### Choose from a number of different septa types:

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 |
|  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 |

## 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 SilTite 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 SilTite nuts | | | | |
| SilTite metal nuts | – | – | 5 | 073230 |
| For TRACE 1300 GCMS 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 ten ferrules, two SilTite nuts. # To be used in combination with brass nut (part no. 1034085).

## 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<br>Moisture: from green to pale brown<br>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<br>Moisture <0.1 ppm<br>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

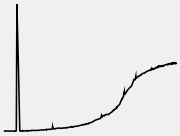
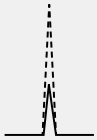
| Part number | Part description and detail |
|---|---|
| 1035154 | Gas filter kit - Carrier gas 1/4" (1 gas filter, connecting unit - 1 position) |
| 1035158 | Gas filter kit - Carrier gas 1/8" (1 gas filter, connecting unit - 1 position) |
| 1035164 | Gas filter kit - FID 1/4" (4 gas filters, connecting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

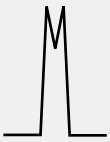
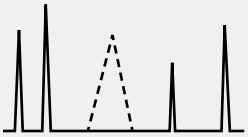
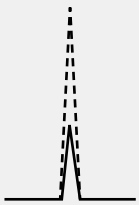
# Big Trap gas filter

## 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.

Scantec Nordic
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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.**