



JSGE

**INLET
SUPPLIES**

For over thirty years, SGE has had a global reputation as a superior developer, manufacturer and supplier of premium quality chromatography products and analytical equipment.

With its modern manufacturing and development facilities and vast network of carefully selected distributors, SGE is perfectly positioned to meet the on-going supply of liners, ferrules and septa to chromatography users throughout the world.

SGE products are backed by a team of specialists across the planet with combined experience totalling many hundreds of years. What ever the challenge, big or small, we have someone who can not only help, but will do so promptly and courteously, ensuring the individual care and attention required to get the best from your chromatography - every time.

SGE GC INLET LINERS

- 
- A liner to suit your GC.
 - Superior high temperature gas phase deactivation.
 - Innovative designs.
 - Optimal reproducibility.
 - Unrivalled precision, accuracy and reliability.
 - Simple to use.
 - Maximum sensitivity/detection levels.
 - Guaranteed to **FIT**.
 - Guaranteed premium Inertness.

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For further information on SGE Capillary Columns, Syringes and other chromatography products contact your local SGE office or distributor.

LINER TYPE/FEATURE:

LINER USE:

Straight-through liner

- Universal liner

Taper at the top of the liner

- This design feature minimizes the effect of excess vapor expansion, thus reducing Flashback*.

Taper at the bottom of the liner

- Column installation into the liner becomes more robust because the taper “channels” analytes into the column. The distance the column is inserted into the liner is not so critical.
- The taper minimizes contact of analytes with the bottom of the injection port. Depending on the instrument type, the base of the inlet could be a metal seal, which can add activity to the injection process. The taper at the bottom of the liner is especially suited for active compounds.

Taper at the top and the bottom of the liner

- A liner with both tapers has the features described above. However, with a double taper, no wool can be inserted into the liner.

Wide ID liners (> 4mm ID)

- Suitable for split and splitless injections.
- Highest volume liners, thus minimizing Flashback*.
- Used for injection volumes > 2.0µL.

Narrow ID liners (< 2.5 mm ID) - FAST Liners

- Especially suited for splitless injection.
- Is the most suitable liner to be used with FAST Capillary Columns (0.1mm ID columns).

Quartz wool in liner

- Promotes mixing of analytes and results in better quantitation.
- Acts as a trap to collect non-volatile residue in the sample.
- Protects capillary column from dirty samples.
- Prevents sample hitting the bottom of the injector before volatilization.

Quartz wool in the liner located at the optimum position (FocusLiner™) refer to pg 7

- Excellent reproducibility results from the wiping of the sample from the syringe needle.
- Results in lower mass discrimination.
- Glass wool prevents the sample hitting the bottom of the injector.

High temperature gas phase deactivation reaction

- Results in an extremely inert liner and ensures representative sampling of all polar compounds.
- High temperature process ensures deactivation is stable at injection port temperatures to 400°C.

In-situ deactivation of quartz wool

- Ensures there is no manual handling of glass wool after deactivation.

Double glass baffling (FocusLiner™) refer to pg 7

- Ensures glass wool remains in the correct position in the liner.
- Top baffle prevents glass wool shifting towards the septum.
- Bottom baffle prevents the glass wool being pushed down into the liner.

Flashback* - refer to page 5 for definition.

How often should I change my liner?

The short answer to this is when either quantitation or peak shape deteriorates. Laboratories injecting very dirty samples should change their liners daily. Laboratories injecting cleaner samples will only need to change their liner once a month. SGE recommends a change frequency of at least once a month.

Should I re-Deactivate my liner? **NO!**

All SGE liners are deactivated using a proprietary high temperature gas phase deactivation. The temperature of deactivation is greater than 400°C. This ensures the deactivation of your liner is stable in your injection port at typical inlet temperatures. Users who choose to deactivate their own liners will usually do this at room temperature or temperatures lower than 400°C. This can cause incomplete, or thermally unstable deactivation.

Liner ID Selection

- Halving liner ID will reduce total liner volume to one quarter of th volume
- Wide ID liners are more suited to large volume (>2.0µL) injections and will minimize Flashback
- Narrow ID liners are especially suited for splitless injection
- The Fast FocusLiner™ (ID = 2.3mm) is ideal for 0.10mm ID capillary columns

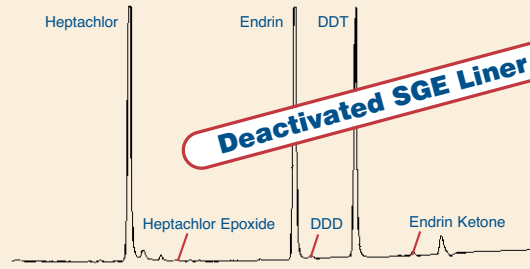
For most instruments, there is a choice of liner inner diameter (ID). For example, a straight-through Agilent Technologies (HP) liner (p/n 092007) with an inner diameter of 4mm and a length of 78.5mm will have an internal volume of approximately 1.0mL. A 1.0µL injection of methylene chloride at 250°C and an inlet pressure of 10psi will expand to 0.39mL. Clearly this is OK if the total volume of the liner is 1.0mL.

Water Injection: For a 1.0µL injection of water, the gas expansion volume will be 1.41mL which is obviously greater than the volume of the liner. If this quantity of water is injected under the above conditions, the vapor will expand beyond the liner and end up in the purge lines and the carrier gas inlet lines. Eventually, the vapor will work its way back into the inlet and the column and this effect is known as Flashback. Flashback will cause erratic quantitation, peak tailing and even ghost peaks.

How to prevent Flashback

- Choose a solvent with a high molar mass
- Know the volume of your liner
- Know the expansion volume of the solvent
- Lower inlet temperature
- Increase inlet pressure

CHEMICAL INERTNESS 5pg/Component Level



Organochlorine pesticides are often used to evaluate the chemical inertness of inlet liners. In particular, the pesticides Heptachlor, Endrin and DDT, readily degrade to produce their corresponding degradation products Heptachlor Epoxide, Endrin Ketone and DDD.

The above chromatogram illustrates the efficiency of the SGE high temperature deactivation process, effectively no degradation of the probe compounds are observed.

SGE's high temperature gas phase in-situ process

- Eliminates activity due to handling of quartz wool
- High temperature process gives excellent lifetimes

HANDY Tip 1

The splitless time should be approximately the same as the liner volume, e.g. 1.0min. for a 1.0mL volume.

KEEP THE TIME AS SHORT AS POSSIBLE.

SGE's FocusLiner™

With conventional liners, the wool can be moved away from the optimum position after repetitive injections, despite correct insertion of the wool into the liner (as shown in Figure 1a below). This is especially true if using an autosampler due to the force of the injection.

The FocusLiner's unique design ensures the wool is securely positioned in the optimum position i.e. able to wipe the end of the syringe needle (Figure 2).

Figure 1. conventional wool liner.

(a) Wool plug is in the correct position to wipe needle tip

(b) Wool plugs can be moved in either direction, preventing needle wiping

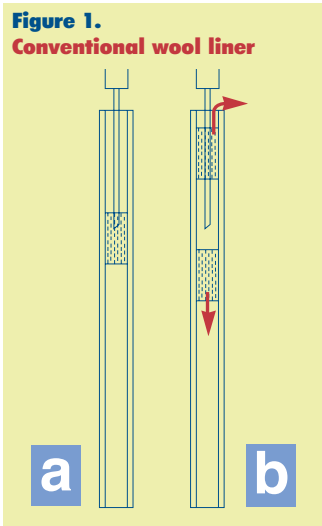


Figure 2. FocusLiner™ showing secured wool plug for excellent reproducibility. The wiping of the sample off the end of the syringe needle is important for reproducibility. Relative standard deviations of less than 1% are readily obtainable with the FocusLiner™.

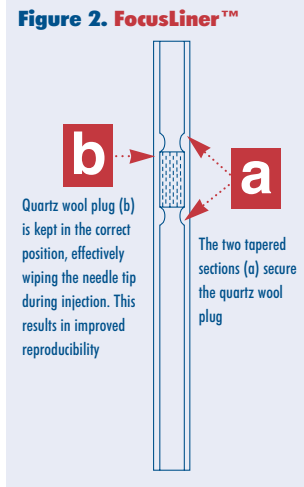
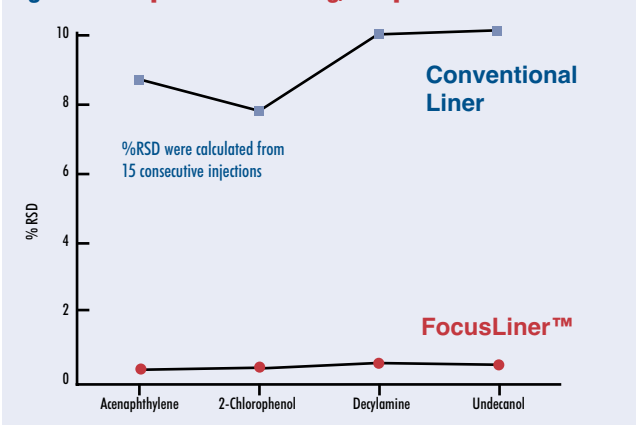


Figure 3. Sample Precision 10ng/Component Level



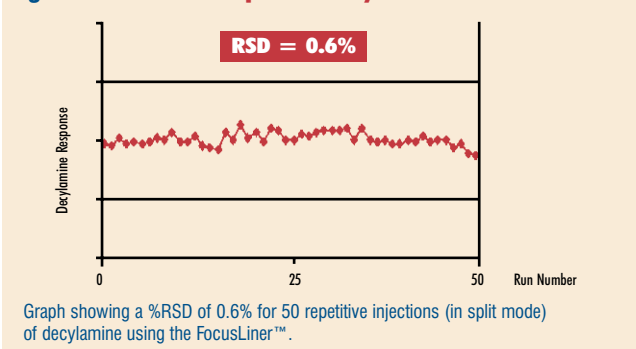
SGE 4mm ID FocusLiner™

The FocusLiner holds the quartz wool firmly in the correct place for optimum needle tip wiping and sample transfer. The result is remarkable, with RSDs (Relative Standard Deviations) between 0.3-0.7%

4mm ID liner with quartz wool

In contrast, the quartz wool was positioned in the center of the liner (as often supplied by other manufacturers). This does not allow sufficient needle tip wiping, which means incomplete sample transfer. As a result, sample precision suffered greatly with RSDs between 8-10%.

Figure 4. FocusLiner Reproducibility

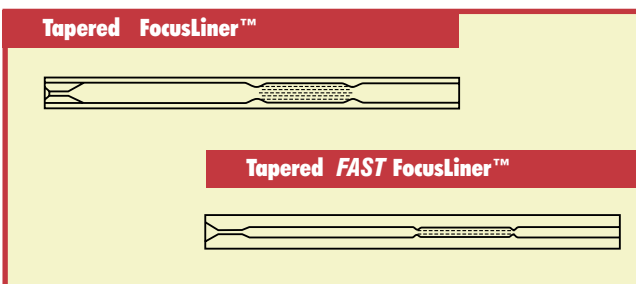


Graph showing a %RSD of 0.6% for 50 repetitive injections (in split mode) of decylamine using the FocusLiner™.

Advantages of Tapered FocusLiner™

Advantages are the same as the standard FocusLiner™ **PLUS**

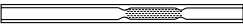
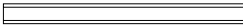
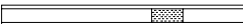
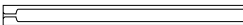
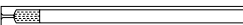
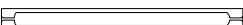

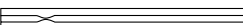

- minimizes sample contact with the metal portion of the injection port
- improves mass discrimination with extreme split ratios
- the taper allows for greater variance in column placement within the liner



Agilent Technologies (HP)

ID (mm)	OD (mm)	Length (mm)	Pack size	Part No.	Sealing Rings	
					Graphite >250°C	Viton <300°C

HP5890, HP6890, HP6850, HP4890 GC's/Finnigan 9001, GCQ

 FocusLiner™	4 mm ID, Split / Splitless FocusLiner™	4.0	6.3	78.5	5 25	092002 092219	0726005	0726532
 Tapered FocusLiner™	4 mm ID, Split / Splitless Tapered FocusLiner™	4.0	6.3	78.5	5 25	092003 092011	0726005	0726532
 FAST FocusLiner™	2.3 mm ID, Split / Splitless Fast FocusLiner™	2.3	6.3	78.5	5 25	092005 092008	0726005	0726532
 Tapered FAST FocusLiner™	2.3 mm ID, Split / Splitless Tapered Fast FocusLiner™	2.3	6.3	78.5	5 25	092111 092115	0726005	0726532
	4 mm ID, Split, straight-through liner	4	6.3	78.5	5 25	092007 092222	0726005	0726532
	4 mm ID, Split with quartz wool	4	6.3	78.5	5 25	092001 092220	0726005	0726532
	4 mm ID, Split / Splitless with single taper	4	6.3	78.5	5 25	092017 092229	0726005	0726532
	4 mm ID, Split / Splitless with single taper and quartz wool	4	6.3	78.5	5	092019	0726005	0726532
	4 mm ID, Split / Splitless with double taper	4	6.3	78.5	5 25	092018 092230	0726003	0726532
	1.2 mm ID, Direct, straight-through liner	1.2	6.3	78.5	5 25	092016 092224	0726003	0726532
	2 mm ID, Splitless (quartz), straight-through liner	2	6.1	78.5	5	092004	0726006	0726532
	2 mm ID, Splitless with Recessed Gooseneck	2	6.3	78.5	5	092013	0726005	0726532
	4 mm ID, Split / Splitless Recessed Gooseneck with quartz wool	4	6.3	78.5	5 25	092010 092223	0726005	0726532

For other Injectors - p15

All SGE liners are deactivated using a proprietary high temperature gas phase deactivation to ensure inertness.

SGE RECOMMENDATION

Split:	FocusLiner™	092002
Splitless:	Tapered FocusLiner™	092003
Splitless*:	Liner with Single Taper	092017

* (for very active compounds e.g. Pesticides)








HANDY Tip 2

For longer column life, use inlet liners that contain deactivated quartz wool (eg. FocusLiner™) and replace regularly. This is particularly important when you are injecting "dirty" samples which contain non-volatile matter.




Perkin Elmer

ID (mm)	OD (mm)	Length (mm)	Pack size	Part No.	Sealing Rings Viton <300°C
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Perkin Elmer Autosystem

 FocusLiner™	4 mm ID, Split / Splitless, FocusLiner™	4	6.2	92	5	092092	0726532
 Tapered FocusLiner™	4 mm ID, Split / Splitless, Tapered FocusLiner™	4	6.2	92	5	092095	0726532
	4 mm ID, Split, straight-through liner	4	6.2	92	5	092100	0726532
	2 mm ID, Splitless, straight-through liner	2	6.2	92	5	092103	0726532
 Large Volume Injection Liner	Large Volume Injection (LVI) liner for PSS injector, sintered glass	1	4	86	5	092244	

Perkin Elmer 8000 and Sigma Series

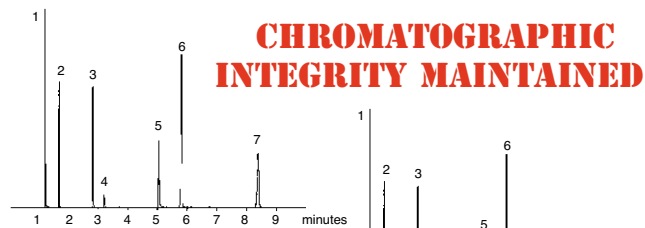
	3 mm ID, Split / Splitless	3	5	100	5	092091	
	2 mm ID, Splitless, with single taper	2	5	100	5	092094	
	1 mm ID, PTV liner with recessed gooseneck	1	2	88	5	092097	

All SGE liners are deactivated using a proprietary high temperature gas phase deactivation to ensure inertness.

ms noVent



5 minute GC-MS Column Changeover



Peak 3 - 4-chlorophenol
Peak 4 - Decylamine
Peak 5 - Undecanol

SAVE 6-12 HOURS

- ELIMINATES MS VENTING
- CONNECTS SIMPLY TO MS INLET AND GAS LINES
- PREVENTS MS AIR CONTAMINATION
- IMMEDIATE AIR/WATER CONFORMANCE








Available for Agilent Technologies, Shimadzu & Varian GC-MS systems

Contact SGE for further information

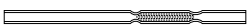




Shimadzu

ID (mm)	OD (mm)	Length (mm)	Pack size	Part No.	Sealing Rings Graphite
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Shimadzu 17A (SPL-17 Injector)

 FocusLiner™	3.4 mm ID, Split / Splitless, FocusLiner™	3.4	5	95	5	092062	0726001
 Tapered FocusLiner™	3.4 mm ID, Split / Splitless, Split / Splitless, Tapered FocusLiner™	3.4	5	95	5	092068	0726001
	3.4 mm ID, Split / Splitless with recessed gooseneck and quartz wool	3.4	5	95	5	092061	0726001
	3.4 mm ID, Split, straight-through liner	3.4	5	95	5	092064	0726001
	3.4 mm ID, Split / Splitless with middle gooseneck	3.4	5	95	5	092085	0726001
	2.6 mm ID, Splitless straight-through liner	2.6	5	95	5	0920861	0726001
	2.6 mm ID, Direct (0.53 mm ID columns)	2.6	5	95	5	092087	0726001

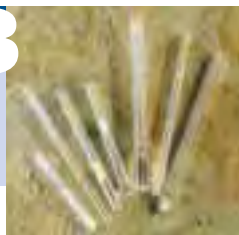
Shimadzu 14/15A/16 (SPL-14 Injector)

 FocusLiner™	3.4 mm ID, Split / Splitless, FocusLiner™	3.4	5	99	5	092065	0726001
 Tapered FocusLiner™	3.4 mm ID, Split / Splitless, Tapered FocusLiner™	3.4	5	99	5	092066	0726001
	3.4 mm ID, Split / Splitless with 2.0 mm middle gooseneck	3.4	5	99	5	092082	0726001
	3.4 mm ID, Split / Splitless with single taper	3.4	5	99	5	0920831	0726001
	3.4 mm ID, Splitless, Direct, wide bore column liner for Shimadzu 9A/16A GC	3.4	5	139	5	092084	0726001

All SGE liners are deactivated using a proprietary high temperature gas phase deactivation to ensure inertness.

HANDY Tip 3

If you inject small volumes (1 μ L or less) you can greatly improve your peak shape by using a narrow bore inlet liner.



HANDY Tip 4

Did you know that single tapered liners transfer high boiling point compounds more effectively to your column than straight through liners?

ThermoQuest - CE Instruments

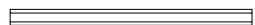
ID (mm)	OD (mm)	Length (mm)	Pack size	Part No.	Sealing Rings Graphite
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ThermoQuest - (CE) Mega Series 4000/5000/6000



3 mm ID, Split / Splitless,
recessed gooseneck with wool

3	5	79.5	5	092041	
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3 mm ID,
Split straight-through liner

3	5	79.5	5	092044	
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2 mm ID,
Splitless straight-through liner

2	5	79.5	5	092047	
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ThermoQuest - (CE) Model 8000/TRACE



FocusLiner™

5 mm ID,
Split / Splitless FocusLiner™

5	8	105	5	092045	0726004
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Tapered FocusLiner™

5 mm ID,
Split / Splitless, Tapered FocusLiner™

5	8	105	5	092046	0726004
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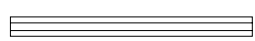
3 mm ID,
Splitless with single taper

3	8	105	5	092141	0726004
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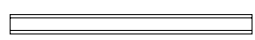
5 mm ID,
Split with single taper

5	8	105	5	092144	0726004
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3 mm ID,
Splitless straight-through liner

3	8	105	5	092147	0726004
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5 mm ID,
Split straight-through liner

5	8	105	5	092150	0726004
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Other Injectors (for HP)

ID (mm)	OD (mm)	Length (mm)	Pack size	Part No.
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SGE AC Control Injector



1.6mm ID, AC Control Sim Dist liner
Programmed Injector (for HP GCs)

1.6	3	73	10	092210
			25	092211

Gerstel CIS 4 Injector



1.8mm ID, Sintered Glass,
Large Volume Injection (LVI)
- Programmed Temp. Injector

1.8	3	71	5	092243
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All SGE liners are deactivated using a proprietary high temperature gas phase deactivation to ensure inertness.

Varian Injector Models 1075/1077



4 mm ID,
Split / Splitless, FocusLiner™

4 6.3 72 5 092022 072601



4 mm ID,
Split / Splitless, Tapered FocusLiner™

4 6.3 72 5 092025 072601



4 mm ID, Split / Splitless,
FocusLiner™ with top-end restriction

4 6.3 72 5 092028 072601



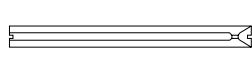
2.3 mm ID,
Split / Splitless, Fast FocusLiner™

2.3 6.3 72 5 092113 072601



4 mm ID,
Split with quartz wool

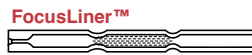
4 6.3 72 5 092021 072601



2 mm ID,
Splitless (slots at both ends)

2 6.3 72 5 092024 092228 072601

Varian Injector Models 1078/1079



3.4 mm ID,
Split / Splitless, FocusLiner™

3.4 5 54 5 092037 0726217



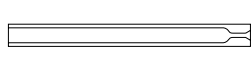
3.4 mm ID,
Split / Splitless, Tapered FocusLiner™

3.4 5 54 5 092036 0726217



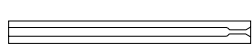
0.5 mm ID,
straight-through liner

0.5 5 54 5 092031 0726217



3.4 mm ID,
Split / Splitless with single taper

3.4 5 54 5 092038 0726217



2 mm ID,
Splitless with single taper

2 5 54 5 092039 0726217



Large Volume Injection (LVI) liner
sintered glass

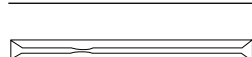
1 5 54 5 092245 0726217

Varian Injector Models 1093/1094



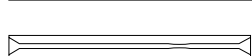
0.5 mm ID,
SPI liner (restriction 0.25mm)

0.5 4.6 54 5 092027



0.8 mm ID,
SPI liner (restriction 0.25mm)

0.8 4.6 54 5 092030








0.8 mm ID, (restriction 0.5mm)
SPI liner (for 0.53 mm ID on-column)

0.8 4.6 54 5 092034 092035

All SGE liners are deactivated using a proprietary high temperature gas phase deactivation to ensure inertness.

Septum Selection Guide

	 CS	 TCS	 Auto-Sep™	 Auto-Sep T™	 Enduro Blue
Typical Uses	Low cost, low temp. applications	Med/High temp. applications	High volume autosampler and manual use esp. for GC-MS	Temperature program Injectors, high volume autosamplers, esp. for GC-MS	For Shimadzu GC's
Material	Teflon coated silicone	Teflon coated triple layer silicone	Silicone	Teflon coated silicone	High Temp. silicone
Durability	Good	Good	Excellent	Excellent	Excellent
Resealing	Good	Very Good	Excellent	Excellent	Excellent
Solvent Resistance	Excellent	Excellent	Excellent	Excellent	Excellent
Tear Resistance	Good	Very Good	Excellent	Excellent	Excellent
Maximum Temp.	200°C	280°C	320°C	350°C	350°C

Septum Size by GC Instrument

Manufacturer	Model	Septum Diameter mm inches		Part No.			
				CS Material Pkt 50	TCS Material Pkt 50	Auto-Sep Pkt 25	Auto-Sep™ Pkt 25
Agilent Technologies	6890, 5890, 5880, 4890, 6850	11	7/16	041826	041846	041872	041882 041883 ^{Pkt100}
	5700, 5800, 5900	9.5	3/8	0418240	0418440	041871	041880
	5750, 710, 720, 8107610	12.5	1/2	041828	041848		041884
(Cool On-column)	5790, 5880, 5890, 7620	5	3/16	041820			
Perkin Elmer	Sigma, 900, 990, 3920	11	7/16	041826	041846	041872	041882 041883 ^{Pkt100}
	8300, 8400, 8500, Autosystem						
Varian	3300, 3400, 3500	11	7/16	041826	041846	041872	041882 041883 ^{Pkt100}
	3600, 3700, 3800, VISTA						
(packed column injectors)	All Models	9.5	3/8	0418240	0418440	041871	041881 ^{Pkt100}
ThermoQuest - CE Instruments	8000 Series	17	0.67		0418491		041886
Shimadzu	14/15A/16/17A	Shimadzu Plug		Enduro Blue - Pkt 50		Part No. 041890	

FERRULE TYPE:

100% Graphite



FERRULE FEATURE:

- easy to use
- forms a stable seal
- soft material
- porous to oxygen
- maximum temperature 450°C
- not for GC-MS interface
- forms 'soft' grip with capillary column
- can be re-used on another capillary column

15% Graphite/ 85% Vespel®



- mechanically robust
- hard material, long lifetime
- maximum temperature 300°C
- must re-tighten after initial temperature cycles
- forms strong grip with capillary column
- cannot be re-used with another capillary column
- for GC-MS interface

Agilent Technologies (HP)

Description	Pack Size	Ferrule Part No.
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Column Connection - 15% Graphite- 85% Vespel® ferrules for all injectors and detectors. *Not for GC-MS connection.*

For 0.10-0.25mm ID Columns*	10	073109
For 0.32mm ID Columns*	10	073111
For 0.45-0.53mm ID Columns*	10	073113
For 1/8" OD Packed columns	10	072669
For 1/4" OD Packed columns	10	072667

Column Connection - 100% Graphite ferrules for all injectors and detectors. *Not for GC-MS connection.*

For 0.1-0.32mm ID Columns*	10	072635
For 0.45-0.53mm ID Columns*	10	072636
For 1/8" OD Packed Columns	10	072602
For 1/4" OD Packed Columns	10	072601

Column Connection - 15% Graphite- 85% Vespel® ferrules. *For GC-MS interface.*

For 0.10-0.25mm ID Columns	10	072663
For 0.32mm ID Columns	10	072654
For 0.45-0.53mm ID Columns	10	072655

* Ferrule body style (short) fits standard HP injector/detector capillary nut.



AUTOSAMPLER SYRINGES


- Agilent Technologies (HP)
- Perkin Elmer
- Shimadzu
- ThermoQuest (CE)
- Varian

and other popular injectors

HANDY Tip 5

Did you know that FocusLiners™ give RSDs between 0.3 and 0.7%? That's up to 40 times better than other liners.

Perkin Elmer

Description	Pack Size	Ferrule Part No.
		

Column Connection - 15% Graphite - 85% Vespel® ferrules

For 1/16" Nut, 0.10-0.25mm ID Columns	10	072663
For 1/16" Nut, 0.32mm ID Columns	10	072654
For 1/16" Nut, 0.45-0.53mm ID Columns	10	072655
For 1/8" Nut, 0.22-0.25mm ID Columns	10	0726703
For 1/8" Nut, 0.32mm ID Columns	10	0726702
For 1/8" Nut, 0.45-0.53mm ID Columns	10	072671
For 1/8" OD Packed Columns	10	072669
For 1/4" OD Packed Columns	10	072667

Column Connection - 100% Graphite ferrules

For 1/16" Nut, 0.10-0.32mm ID Columns	10	072627
For 1/16" Nut, 0.45-0.53mm ID Columns	10	072626
For 1/4" Nut, 1/4" OD Packed Columns	10	072621
For 1/8" Nut, 0.22-0.32mm ID Columns	10	072624
For 1/8" Nut, 0.45-0.53mm ID Columns	10	0726280
For 1/8" Nut, 1/8" OD Packed Columns	10	072622

HANDY Tip 6

Having problems with reproducibility? Try a FocusLiner™. Its unique design ensures the tip of the needle is wiped every time you inject a sample. This makes the injection process more predictable and reproducible.



Shimadzu

Description	Pack Size	Ferrule Part No.
		

Column Connection - 100% Graphite captured ferrules

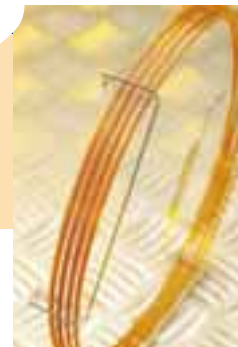
For 0.10-0.32mm ID Columns	10	0726080
For 0.45-0.53mm ID Columns	10	0726082
For 5mm OD Packed Columns	10	0726001

GC-MS Connection - 15% Graphite - 85% Vespel® ferrules

QP5000-I for 0.10-0.25mm ID Columns	10	0726563
QP5000-I for 0.32mm ID Column	10	0726564
QP5000-II & QP5050 for 0.22-0.25mm ID Columns	10	0726561
QP5000-II & QP5050 for 0.32mm ID Columns	10	0726562

HANDY Tip 7

If you're having problems with solvent focusing, or early eluting peaks seem broad or lop sided in splitless injection, then try using a column with a thicker film.



HANDY Tip 8

A syringe should be flushed with approximately 5-10 times its total capacity to eliminate carryover between samples.



ThermoQuest - CE Instruments

Description	Pack Size	Ferrule Part No.
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15% Graphite - 85% Vespel® ferrules -not suitable for 8000 series GC

For 0.10-0.25mm ID Columns	10	0726549
For 0.32mm ID Columns	10	0726557
For 0.45-0.53mm ID Columns	10	0726548
For 1/8" OD Packed Columns	10	072669
For 1/4" OD Packed Columns	10	072667

100% Graphite ferrules -not suitable for 8000 series GC

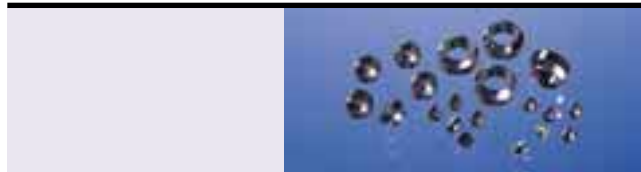
For 0.10-0.32mm ID Columns	10	072619
For 0.45-0.53mm ID Columns	10	072614
For 1/8" OD Packed Columns	10	072622
For 1/4" OD Packed Columns	10	072621

Low Cost Capillary Conversion Nut Kit and Ferrules for ThermoQuest - CE Instruments/Fisons 8000

Supplied with range of ferrules for 0.15-0.53mm ID Columns	1	103436
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Varian

Description	Pack Size	Ferrule Part No.
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Column Connection - 15% Graphite - 85% Vespel® ferrules

For 0.10-0.25mm ID Columns	10	072663
For 0.32mm ID Columns	10	072654
For 0.45-0.53mm ID Columns	10	072655
For 1/8" OD Packed Columns	10	072669
For 1/4" OD Packed Columns	10	072667

Column Connection - 100% Graphite ferrules

For 0.22-0.32mm ID Columns	10	072627
For 0.45-0.53mm ID Columns	10	072626
For 1/8" OD Packed Columns	10	072622
For 1/4" OD Packed Columns	10	072621

*mentioned trademarks are registered trademarks of their respective owners.

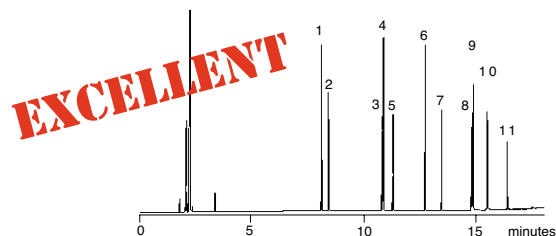
Fused Silica capillary columns are manufactured under license granted by Hewlett Packard Company.

BPX5

5% Phenyl (equiv.) Polysilphenylene-siloxane

EPA Phenol Mix

30m x 0.25mm ID x 0.25µm film Part No: 054101
1ng on column of each component



- | | |
|-----|-------------------|
| 8. | 2,4-dinitrophenol |
| 9. | 4-nitrophenol |
| 11. | pentachlorophenol |



MS GRADE

- Max. Temp. 370°C
- Wide selection of Lengths, IDs & Film Thicknesses AVAILABLE
- Ideal for the analysis of:
 - Semi-Volatiles
 - Pesticides
 - Drugs
 - Fragrances
 - Industrial Chemicals

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