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我们自成立以来，一直保持着高速稳定的发展步伐。

我们向全国的科学工作者提供各类实验设备、化学品、试剂、耗材等科研用品。

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# GC Essentials

Instrument Supplies





### Septum Nuts for use with Agilent GCs

- Nuts ensure a leak-tight injection port, increase septum lifetime, and decrease maintenance requirements.
- Thread design and needle guide allow easy penetration and prevent premature septum coring.
- Manual injection septum nut allows use of 26-gauge needles for on-column injections.
- Made of high-quality stainless steel.

Description	Similar to Agilent part #	qty.	cat.#
Autosampler & PTV Septum Nut (for 23-gauge needles)	18740-60835	ea.	20631
Manual Injection Septum Nut (for 26-gauge needles)	18740-60835	ea.	21309

new!



### Knurled Septum Nuts for Agilent 5890/6890 GC Split/Splitless Injectors

- Tightens easily without the use of a wrench.
- Ensures a leak-tight injection port, increases septum lifetime, and decreases maintenance requirements.
- Thread design and needle guide allow easy penetration and prevent premature septum coring.
- High-quality stainless steel construction.

Description	qty.	cat.#
Knurled Septum Nut, Autosampler (for 23-gauge needles)	ea.	21479
Knurled Septum Nut, Manual Injection (for 26-gauge needles)	ea.	21478



### Stainless Steel Septum Nuts for Varian GCs

- Maintain a sharper knife edge longer than the original equipment aluminum design.
- Greatly minimize septum fragmentation and increase septum lifetime.
- 26-gauge needle guide for on-column injections.

Description	Similar to Varian part #*	qty.	cat.#
26 Gauge Needle Guide Septum Nut	03-949666-01	ea.	21310
Standard (23-Gauge Needle Guide) Septum Nut	03-949666-01	ea.	21304

\*Similar to Varian part # 03-949666-01, except Restek nuts are not equipped with remote-start capabilities.



### Septum Nut for Shimadzu 17A & 2010 GCs

- One piece design for ease of installation and removal.
- Made of clear anodized aluminum and high-quality stainless steel.

Description	Similar to Shimadzu part #	qty.	cat.#
Septum Nut for Shimadzu 17A & 2010 GCs	221-41286-00	ea.	22079
	221-44584-00		



### Septum Cap for PerkinElmer Auto SYS™ XL

- Made of clear anodized aluminum and high-quality stainless steel.
- Meets or exceeds OEM performance.

Description	Similar to PE part #	qty.	cat.#
Septum Cap for PerkinElmer Auto SYS™ XL	N6100153	ea.	22322

### Septum Holder Kit for TRACE™ 2000 GCs

- Includes septum support and holder.
- Made from high quality stainless steel.



Description	Similar to TF part #	qty.	cat.#
Septum Holder Kit for TRACE™ 2000 GCs	23303015	ea.	21299
	350054335		

### Thermolite® Septa

- Usable to 340°C inlet temperature.
- Lowest bleed.
- Excellent puncturability.
- Preconditioned and ready to use.
- Do not adhere to hot metal surfaces.
- Packaged in non-contaminating glass jars.



Septum Diameter	25-pk.	50-pk.	100-pk.
5mm (3/16")	20351	20352	20353
6mm (1/4")	20355	20356	20357
7mm	20381	20382	20383
8mm	20370	20371	—
9mm	20354	20358	20362
9.5mm (3/8")	20359	20360	20361
10mm	20378	20379	20380
11mm (7/16")	20363	20364	20365
11.5mm	22385	22386	22387
12.5mm (1/2")	20367	20368	20369
17mm	20384	20385	20386
Shimadzu Plug	20372	20373	20374

### InfraRed™ Septa

- Usable to 325°C inlet temperature.
- Preconditioned and ready to use.
- Excellent puncturability.
- Do not adhere to hot metal surfaces.
- Low bleed.
- Packaged in non-contaminating glass jars.



Septum Diameter	25-pk.	50-pk.	100-pk.
9mm	21417	21418	21419
9.5mm (3/8")	21421	21422	21423
10mm	21424	21425	21426
11mm (7/16")	21427	21428	21429
11.5mm	21430	21431	21432
12.5mm (1/2")	21433	21434	21435
17mm	21436	21437	21438
Shimadzu Plug	21439	21440	21441

### IceBlue™ Septa

- Usable to 250°C inlet temperature.
- General-purpose septa.
- Excellent puncturability.
- Preconditioned and ready to use.
- Do not adhere to hot metal surfaces.
- Packaged in non-contaminating glass jars.
- Ideal for SPME.



Septum Diameter	50-pk.	100-pk.
9mm	22381	22382
9.5mm (3/8")	22388	22389
10mm	22390	22391
11mm (7/16")	22392	22393
11.5mm	22383	22384
12.5mm (1/2")	22394	22395
17mm	22396	22397
Shimadzu Plug	22398	22399

### Measure

your old  
septum here  
(size in mm)

5

7

9

9.5

10

11

11.5

12.5





17

### HANDY Septum Size Chart



Instrument	Septum Size (mm)
<b>Agilent (HP)</b>	
5880A, 5890, 6890,	11
6850, PTV	11
5700, 5880	9.5/10
On-Column Injection	5
<b>CE Instruments (TMQ)</b>	
TRACE™ GC	17
<b>Thermo Finnigan (TMQ)</b>	
GC 9001	9.5
GCQ	9.5
GCQ w/TRACE™, PTV	17
QCQ	9.5
TRACE™ 2000	9.5
<b>Fisons/Carlo Erba (TMQ)</b>	
8000 series	17
<b>Gow-Mac</b>	
6890 series	11
All other models	9.5
<b>PerkinElmer</b>	
Sigma series	11
900,990	11
8000 series	11
Auto SYS™	11
Auto SYS™ XL	11
<b>Pye/Unicam</b>	
All models	7
<b>Shimadzu</b>	
All models	Plug
<b>SRI</b>	
All models	Plug
<b>Tracor</b>	
540	11.5
550,560	9.5
220,222	12.5
<b>Varian</b>	
Injector type:	
Packed column	9.5/10
Split/splitless	
1078/1079	10/11
1177	9
1075/1077	11

For more liners visit us online at [www.restek.com](http://www.restek.com) or call 800-356-1688!



### Splitless Liners for Agilent/Finnigan GCs

	Benefits/Uses	ID*/OD & Length (mm)	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 2mm Splitless	trace samples <math><2\mu\text{L}</math>	2.0 ID 6.5 OD x 78.5	5181-8818 (ea.) 5183-4703 (5-pk.) 5183-4704 (25-pk.)	20712	20713	20714
 4mm Splitless	trace samples >math>2\mu\text{L}</math>	4.0 ID 6.5 OD x 78.5	210-3003 (ea.) 210-3003-5 (5-pk.)	20772	20773	20774
 Siltek® 4mm Splitless	trace samples >math>2\mu\text{L}</math>	4.0 ID 6.5 OD x 78.5	—	20772-214.1	20773-214.5	20774-214.25
 Gooseneck Splitless (4mm) w/ Woolf	trace samples >math>2\mu\text{L}</math>	4.0 ID 6.5 OD x 78.5	5062-3587 (ea.) 5183-4693 (5-pk.) 5183-4694 (25-pk.)	22405	22406	22407


### Split Liners for Agilent/Finnigan GCs

	Benefits/Uses	ID*/OD & Length (mm)	Similar to Agilent part #	ea.	cat.# 5-pk.	25-pk.
 4mm Split w/ Wool	universal, use with Agilent 7673 autosampler	4.0 ID 6.3 OD x 78.5	19251-60540 (ea.) 5183-4691 (5-pk.) 5183-4692 (25-pk.)	20781	20782	20783
 Siltek® 4mm Split w/ Wool	universal, use with Agilent 7673 autosampler	4.0 ID 6.3 OD x 78.5	—	20781-213.1	20782-213.5	20783-213.25



### Splitless Liners for Varian 1075/1077 GCs

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to Varian part #	ea.	cat.# 5-pk.	25-pk.
 2mm Splitless	trace samples <math><2\mu\text{L}</math>	2.0 ID 6.3 OD x 74	01-900109-05	20721	20722	20723
 4mm Splitless	trace samples >math>2\mu\text{L}</math>	4.0 ID 6.3 OD x 74	01-900109-05	20904	20905	20906



### Split Liners for Varian 1075/1077 GCs

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to Varian part #	ea.	cat.# 5-pk.	25-pk.
 Splitter w/ Wool	universal, use with rapid autosamplers	4.0 ID 6.3 OD x 72	01-900109-01	20792	20793	20794



### Split Liners for Varian 1177 GCs

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to Varian part #	ea.	cat.# 5-pk.	25-pk.
 4mm Split w/Glass Frit	universal	4.0 ID 6.3 OD x 78.5	39-26119-36	21045	21046	—
 4mm Split w/ Wool	universal	4.0 ID 6.3 OD x 78.5	39-26119-34	—	21079	—



### Liners for Varian 1078/1079 GCs

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to Varian part #	ea.	cat.# 5-pk.	25-pk.
 1078/1079 Split w/ Frit	dirty samples, non-active compounds	3.4 ID 5.0 OD x 54	03-918464-00	21708	21709	—
 1078/1079 Splitless	trace samples <math><2\mu\text{L}</math>	2.0 ID 5.0 OD x 54	03-918466-00	21711	21712	—

### Split/Splitless Liners for Shimadzu GCs

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to Shimadzu part #	ea.	cat.# 5-pk.	25-pk.
 17A & 2010 Split/Splitless w/ Wool	universal, for most common analyses	3.5 ID 5.0 OD x 95	221-41444-00	20955	20956	20957
 Siltek® 17A & 2010 Split/Splitless w/ Wool	universal, for most common analyses	3.5 ID 5.0 OD x 95	—	20955-213.1	20956-213.5	20957-213.25

### Splitless Liners for PerkinElmer GCs

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to PE part #	ea.	cat.# 5-pk.	25-pk.
 Splitless (2mm ID)	trace samples	2.0 ID 5.0 OD x 100	0330-5180	20730	20731	20732
 Auto SYS™ Splitless	headspace, purge & trap	1.0 ID 6.2 OD x 92.1	—	21272	21273	21274



\*Nominal ID at syringe needle expulsion point.

†Use this liner for increased sensitivity.



All liners are  
**100%**  
deactivated

All liners are shipped intermediate polarity (IP) deactivated unless otherwise requested.

**Split Liners for PerkinElmer GCs**

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to PE part #	ea.	cat.# 5-pk.	25-pk.
 Baffle Splitter	universal, for most common analyses	3.5 ID 5.0 OD x 100	0330-5181	20736	20737	—
 Cup Splitter	high & low MW compounds	3.5 ID 5.0 OD x 100	—	20739	20740	—

**Splitless Liners for Thermo Finnigan 8000 & TRACE™ Series GCs**

	Benefits/Uses:	ID*/OD & Length (mm)	Similar to TF part #	ea.	cat.# 5-pk.	25-pk.
 Splitless (3mm ID)	trace samples	3.0 ID 8.0 OD x 105	453 20032	20942	20943	20944
 Siltek® Splitless (3mm ID)	trace samples	3.0 ID 8.0 OD x 105	—	20942-214.1	20943-214.5	20944-214.25

\*Nominal ID at syringe needle expulsion point.

**Viton® O-Rings for Agilent GCs**

- Fit split (6.3mm OD) or splitless (6.5mm OD) liners.

Description	Max. temp.	Similar to Agilent part #	qty.	cat.#
Viton® O-Rings for Agilent GCs	250°C	5180-4182	25-pk.	20377

**Graphite O-Rings for Agilent and Varian 1177 GCs**

- Excellent thermal stability at injection port temperatures up to 450°C!

Description	Max. temp.	Similar to Agilent part #	Restek cat.#	
			10-pk.	50-pk.
Graphite O-rings for split liners (6.35mm ID)	450°C	5180-4168	20296	20297
Graphite O-rings for splitless liners (6.5mm ID)	450°C	5180-4173	20298	20299

**Liner Seals for Varian 1078/1079**

Description	Max. temp.	Similar to Varian part #	qty.	cat.#

**Viton® O-Rings for PerkinElmer Auto SYS™ GCs**

Description	Max. temp.	Similar to PE part #	qty.	cat.#
Viton® O-Rings for PerkinElmer Auto SYS™ GCs	250°C	N6101374	10-pk.	20262

**Graphite O-Rings for PerkinElmer Auto SYS™ XL PSS**

Description	Max. temp.	Similar to PE part #	qty.	cat.#
Graphite O-Rings for PerkinElmer Auto SYS™ XL PSS	450°C	N610-1751	10-pk.	21475
Graphite O-Rings for PerkinElmer Auto SYS™ XL PSS	450°C	N610-1751	25-pk.	21476

**Viton® O-Rings for PerkinElmer PSS**

Description	Max. temp.	Similar to PE part #	qty.	cat.#
Viton® O-Rings for PerkinElmer PSS	250°C	N6101747	10-pk.	20366

**Inlet Liner Seals for TRACE™ 2000 GCs**

Description	Max. temp.	Similar to TF part #	qty.	cat.#
Inlet Liner Seals for TRACE™ 2000 GCs	450°C	29013417	2-pk.	21392





### Graphite Sealing Ring and Washer for 8000 and TRACE™ Series GC Inlet Liners

Description	Max. temp.	Similar to TF part #	qty.	cat.#
Graphite Sealing Ring and Washer	450°C	290-03406	ea.	21898
Graphite Sealing Rings and Washers	450°C	290-03406	2-pk.	21899



### Liner Seals for CIS4 and PTV

Description	Max. temp.	Similar to Gerstel part #	qty.	cat.#
Liner Seals for CIS4 and PTV	450°C	GC754105	5-pk.	22684



### Viton® O-Rings for Shimadzu 17A and 2010 GCs

Description	Max. temp.	Similar to Shimadzu part #	qty.	cat.#
Viton® O-Rings for Shimadzu 17A and 2010 GCs	250°C	036-11203-84	10-pk.	21477



### Graphite O-Rings for Shimadzu 17A and 2010 GCs

Description	Max. temp.	Similar to Shimadzu part #	qty.	cat.#
Graphite O-Rings for Split Liners	450°C	221-48393-91	5-pk.	20243
Graphite O-Rings for Splitless Liners	450°C	221-47222-91	5-pk.	20244

### Vespel® Ferrules

- 100% high-temperature polyimide.
- Stable to 350°C.
- Durable, leak-tight.

### Graphite Ferrules

- High-purity, high-density graphite.
- Smoother surface and cleaner edges than conventional graphite ferrules.
- Contain no binders that can off-gas or adsorb analytes.
- Stable to 450°C.

### Vespel®/Graphite Ferrules

- 60%/40% Vespel®/graphite blend, offering the best combination of sealing and ease of workability.
- Seal with minimal torque, reusable, and preferred for vacuum and high-pressure uses.
- Stable to 400°C.
- Recommended for mass spec transfer lines.

### Capillary Ferrules—For 1/16-Inch Compression-Type Fittings

Ferrule ID	Fits Column ID	qty.	Vespel®	Graphite	Vespel®/Graphite
0.3mm	≤ 0.20mm	10-pk.	22213	20233	20275
0.4mm	0.25/0.28mm	10-pk.	22214	20200	20211
0.4mm	0.25/0.28mm	50-pk.	—	20227	20229
0.5mm	0.28/0.32mm	10-pk.	22215	20201	20212
0.5mm	0.28/0.32mm	50-pk.	—	20228	20231
0.6mm	0.28mm**	10-pk.	—	—	20232
0.8mm	0.45/0.53mm	10-pk.	22216	20202	20213
0.8mm	0.45/0.53mm	50-pk.	—	20224	20230
1.0mm	0.75mm*	10-pk.	22217	21058	24912
1.2mm	0.75mm	10-pk.	22218	—	—
1.6mm	1.00mm*	10-pk.	—	21060	—



### Compact Ferrules—For Agilent 5890/6890/6850 GCs

Ferrule ID	Fits Column ID	qty.	Graphite	Vespel®/Graphite
0.4mm	0.25/0.28mm	10-pk.	20250	20238
0.4mm	0.25/0.28mm	50-pk.	20251	20239
0.5mm	0.28/0.32mm	10-pk.	21007	20248
0.5mm	0.28/0.32mm	50-pk.	21008	20249
0.8mm	0.45/0.53mm	10-pk.	20252	20263
0.8mm	0.45/0.53mm	50-pk.	20253	20264
1.0mm	0.75mm*	10-pk.	21059	21056
1.6mm	1.00mm*	10-pk.	21061	21057

\*For micropacked columns.

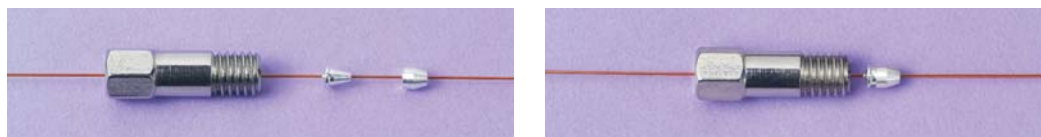
\*\*For 0.28mm MXT® columns.

### Alumaseal™ Ferrules\*

- Aluminum construction, will not crack or fragment.
- Eliminate out-gassing, make leak-tight seals, for less detector noise.
- No retightening required after temperature cycles—excellent for GC/MS.
- Unique two-piece design permanently locks on fused silica tubing without causing breakage.
- Will not stick in fittings, unlike Vespel® or graphite.
- Use with any 1/16" compression-type fitting.

Ferrule ID	Fits Column ID	qty.	cat.#
0.4mm	0.25mm	10-pk.	21472
0.5mm	0.32mm	10-pk.	21473
0.8mm	0.53mm	10-pk.	21474

\*Patent pending.



**Unique two-piece design permanently locks onto fused silica tubing.**



### Dual Vespel® Ring Inlet Seals

- Vespel® ring embedded in bottom surface eliminates need for washer.
- Vespel® ring embedded in top surface reduces operator variability by requiring minimal torque to seal.
- Prevents oxygen from permeating the carrier gas, increasing column lifetime.
- Siltek® treatment provides inertness similar to fused silica.
- Highly-polished stainless steel increases inertness to active compounds.

### Washerless, Leak-Tight Seals for Agilent GCs

0.8mm ID Dual Vespel® Ring Inlet Seal	2-pk.	10-pk.
Siltek®	21242	21243
Gold-Plated	21240	21241
Stainless Steel	21238	21239
1.2mm ID Dual Vespel® Ring Inlet Seal	2-pk.	10-pk.
Siltek®	21248	21249
Gold-Plated	21246	21247
Stainless Steel	21244	21245



**One-piece design!  
No washer needed!**

### Replacement Inlet Seals with Washers for Agilent 5890/6890/6850 Split/Splitless Injection Ports

- Special grade of stainless steel that is softer and deforms more easily, creating a better seal.
- Increases column lifetime because oxygen cannot permeate into the carrier gas.
- Reduced noise benefits high-sensitivity detectors (e.g., ECDs, MSDs).
- Siltek® treatment provides inertness similar to fused silica.
- Highly-polished stainless steel increases inertness to active compounds.
- All seals include washers.

Single-Column Installation (0.8mm Opening)*		0.25/0.32mm ID Dual-Column Installation (1.2mm Opening)		0.53mm ID Dual-Column Installation (1/16-inch opening)	
2-pk.	10-pk.	2-pk.	10-pk.	2-pk.	10-pk.
<b>Stainless Steel Inlet Seal</b>					
21315	21316	20390	20391	20392	20393
<b>Gold-Plated Inlet Seal</b>					
21317	21318	21305	21306	—	—
<b>Siltek® Inlet Seal</b>					
21319	21320	21307	21308	—	—

\*0.8mm ID stainless steel inlet seal is similar to Agilent part #18740-20880,  
0.8mm ID gold-plated inlet seal is similar to Agilent part #18740-20885.



Note: We recommend using the 1.2mm inlet seal when installing two columns using a two-hole ferrule.



## Septum Puller

- Keep several on hand in your laboratory—can be used in many different ways.
- Use hooked end for removing septa and O-rings; pointed end works well for removing stuck ferrules or fragments.



Remove septum without damaging an expensive weldment.



Dislodge a stuck ferrule quickly and easily—without scoring the fitting.

Description	qty.	cat.#
Septum Puller	ea.	20117

## Inlet Liner Removal Tool

- Easily remove liner from injector—no more burned fingers.
- Made from high-temperature silicone.
- Won't chip or crack the liner.



Gently push the liner removal tool onto the liner in the injection port, with a slight circular motion.



Slowly pull the liner out of the injection port.



Place a new liner into the injection port, avoiding hot metal surfaces.

**No more burned fingers!**



Description	qty.	cat.#
Inlet Liner Removal Tool	3-pk.	20181

## Injector Wrench for Agilent 5890/6890/6850 GCs

- Use to remove the septum nut and weldments during GC maintenance.
- High-quality stainless steel construction.
- Meets original equipment performance.



Description	Similar to Agilent part #	qty.	cat.#
Injector Wrench for Agilent 5890/6890/6850 GCs	19251-00100	ea.	22065

## Injector Wrench for Shimadzu 17A and 2010 GCs

- Designed specifically for removing Shimadzu injection ports.
- High-quality stainless steel construction.



Description	Similar to Shimadzu part #	qty.	cat.#
Injector Wrench for Shimadzu 17A and 2010 GCs	221-46977-00	ea.	21159

Restek Trademarks/Service Marks: Alumaseal, IceBlue, InfraRed, MXT, Siltek, Thermolite, Turning Visions into Reality, Restek logo.

Other Trademarks: Agilent (Agilent Technologies, Inc.), Auto SYS (PerkinElmer), TRACE (Thermo Finnigan), Freon, Vespel, Viton (E.I. du Pont de Nemours & Co. Inc.).



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