

GC Accessories

Agilent Technologies Instruments

Supeltex Capillary Column Ferrules (Short)

Use with original Agilent/HP nut or Supelco replacement nut (P/N 24833-U).

We offer the short style ferrules for Agilent/HP GC's. This design will fit the standard Agilent/HP capillary nut. They are offered in M-2A (85% polyamide/15% graphite), M-4 (100% graphite), and CapSeal (graphite/aluminum) versions.



FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
0.20-0.25mm COLUMN ID x 0.4mm FERRULE ID				
M-2A	400°C	10	24803-U	
		50	24807-U	
M-4	450°C	10	24811-U	
		50	24819-U	
CapSeal Bullet	450°C	10	23864	
		50	23867	
0.32mm COLUMN ID x 0.5mm FERRULE ID				
M-2A	400°C	10	24802-U	
		50	24806-U	
M-4	450°C	10	24809-U	
		50	24813-U	
CapSeal Bullet	450°C	10	23865	
		50	23868	
0.53mm COLUMN ID x 0.8mm FERRULE ID				
M-2A	400°C	10	24801-U	
		50	24804-U	
M-4	450°C	10	24808-U	
		50	24812-U	
CapSeal Bullet	450°C	10	23866	
		50	23869	

Column Nuts for Agilent/HP

Use with short Supeltex ferrules (see above). 24833-U

These column nuts are replacements for damaged or misplaced original Agilent/HP nuts. They are to be used with the shorter design ferrules for Agilent/HP GC's.

DESCRIPTION	CAT. NO.	PRICE
Column Nuts (pk. of 2)	24833-U	

Accessory Case for Agilent/HP GC Capillary Products

We offer a clear plastic storage case with a foam insert. The foam easily stores your capillary accessories. The foam has been cut out to hold your Pk/5 inlet liners, Pk/50 septa, Pk/50 ferrules, Pk/25 Therm-O-Rings, Column nuts, and Pk/10 Inlet Seals.

DESCRIPTION	CAT. NO.	PRICE
GC Accessory Case for Agilent Technologies	28035-U	

Supeltex Capillary Column Ferrules (General Purpose)

Use with Supelco Ferrule Nut Adapter (P/N 22470-U or 22509).

These are the original Supeltex ferrules. Use these ferrules if you have replaced the original Agilent/HP nut with Supelco's Ferrule Nut Adapter. They are offered in M-1 (ceramic-filled Teflon), M-2A (85% polyamide/15% graphite), M-2B (75% polyamide/25% graphite), M-4 (100% graphite), and CapSeal (graphite/aluminum) versions.



FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
0.20-0.25mm COLUMN ID x 0.4mm FERRULE ID				
M-2A	400°C	10	503258	
		50	22474	
M-2A 2-hole	400°C	5	22467	
M-2A Indented Blank ¹	400°C	10	22488	
M-2B	350°C	10	22510-U	
M-4	450°C	10	22498	
		50	22480-U	
CapSeal Bullet	450°C	12	23480-U	
		48	23485	
0.32mm COLUMN ID x 0.5mm FERRULE ID				
M-2A	400°C	10	22461	
M-2A 2-hole	400°C	5	22463	
M-2A Indented Blank ¹	400°C	10	22488	
M-2B	350°C	10	22511	
M-4	450°C	10	22462	
		50	22412	
CapSeal Bullet	450°C	12	23481	
		48	23486	
0.53mm COLUMN ID x 0.8mm FERRULE ID				
M-1	250°C	10	22499	
M-2A	400°C	10	22489	
		50	22473	
M-2A Indented Blank ¹	400°C	10	22488	
M-2B	350°C	10	22512	
M-4	450°C	10	20628	
		50	22479	
CapSeal Bullet	450°C	12	23482	
		48	23487	
0.75mm COLUMN ID x 1.0mm FERRULE ID				
M-2A Indented Blank ¹	400°C	10	22488	
M-4	450°C	10	22494	
0.50-0.75mm COLUMN ID x 1.2mm FERRULE ID				
M-2A	400°C	10	22459	
M-2A Indented Blank ¹	400°C	10	22488	
M-4	450°C	10	22460	

¹ Drill to fit your column.

Supelco Ferrule Nut Adapters

Use with general purpose Supeltex ferrules (see above).

Install fused silica capillary columns without restrictions on ferrule choice. These adapters enable you to use general purpose Supeltex and other 1/16" compression capillary ferrules in your Agilent/HP 5710, 5790, 5840, 5880, 5890, or 6890 system.

DESCRIPTION	CAT. NO.	PRICE
Adapters (pk. of 2)	22470-U	
Adapters, Knurled (pk. of 2)	22509	



GC Accessories

Agilent Technologies Instruments

Supeltex Capillary Ferrules (Long)

Use with original Agilent/HP MSD Source Nut, SSNE Style Nut (P/N 28034-U), or Supelco MSD Source Nut (P/N 22517).

We offer a preconditioned ferrule for Agilent/HP GC/MS applications in M-2A material (85% polyamide/15% graphite).

DESCRIPTION	QTY.	CAT. NO.	PRICE
0.20-0.25mm column ID x 0.4mm ferrule ID	10 50	24826-U 28022-U	
0.32mm column ID x 0.5mm ferrule ID	10 50	24824-U 28023-U	
0.53mm column ID x 0.8mm ferrule ID	10 50	24823-U 28024-U	

Column Nut for Agilent/HP MSD

Use with long Supeltex ferrules.

These column nuts are replacements for damaged or misplaced original Agilent/HP MSD nuts. They are to be used with the longer design ferrules for Agilent/HP GC's.

DESCRIPTION	QTY	CAT. NO.	PRICE
SSNE style columns nut	5	28034-U	

MSD Source Nut for GC/MS Interface

Use with long Supeltex ferrules or general purpose Supeltex ferrules.

These column nuts can be used to replace damaged or misplaced original Agilent/HP source nuts. The nuts are made of brass to prevent damage to MSD source threads. An enlarged knurled end allows easy finger tightening for a leak tight seal.

DESCRIPTION	CAT. NO.	PRICE
MSD Source Nut	22517	

Thermogreen LB-2 Septa

Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use
- Easier needle penetration and high puncture tolerance – ideal for autosamplers
- Rubber formulation exclusive to Supelco

(Pk. of 50).

DESCRIPTION	DIAMETER	CAT. NO.	PRICE
5880A, 5890	11mm (7/16")	20654	
5700 Series, 5880	9.5mm (3/8")	20652	
5880/90, 6890, OCl Ports	5mm (3/16")	20638	

Inlet Seals

The inlet seal on an Agilent/HP GC must be regularly changed to prevent sample adsorption due to accumulation of sample residue and/or septum fragments. We manufacture replacement seals of high quality stainless steel for analyses of non-reactive compounds, and stainless steel seals plated with gold for applications requiring more inertness. No brighteners are used in the plating process. Stainless steel washers are included with each type of seal.

DESCRIPTION	CAT. NO.	PRICE
Stainless Steel Inlet Seals (pk. of 2)	23316-U	
Stainless Steel Inlet Seals (pk. of 10)	23317-U	
Stainless Steel Inlet Seals, 100 Seals w/50 washers	23363-U	
Gold Plated Inlet Seals (pk. of 2)	23318-U	
Gold Plated Inlet Seals (pk. of 10)	23319-U	

Therm-O-Ring Seals for Capillary Inlet Liners

Exclusive from Supelco. New high temperature O-ring seals can be used with inlet temperatures up to 375°C without sticking or fragmenting. Fit both 6.3mm OD (split) and 6.5mm OD (splitless) Agilent/HP capillary liners, and any 1/4" OD capillary liner that uses an O-ring seal. Superior replacement for Viton O-rings.

DESCRIPTION	CAT. NO.	PRICE
Therm-O-Ring Seals (pk. of 10)	21003-U	
Therm-O-Ring Seals (pk. of 25)	21004-U	

Deactivated Glass Inlet Liners

Our liners feature:

- High temperature silanization, to ensure inertness
- Consistent dimensions, tolerances and quality
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

All Models, 4890, 5880, 5890, 6890. (pk/5).

DESCRIPTION	CAT. NO.	PRICE
SPLIT INJECTION		
78.5 x 6.3mm, 4mm ID, wool packed	2048605	
78.5 x 6.3mm, cup design	2051005	
78.5 x 6.3mm, cup design, wool packed	2048205	
SPLITLESS		
78.5 x 6.5mm, tapered	2046605	
78.5 x 6.5mm, tapered, wool packed	2047805	
78.5 x 6.5mm, 2mm ID	2051305	
78.5 x 6.5mm, dual tapered	2048505	
DIRECT/WIRE-BORE		
78.5 x 6.5mm, 1.5mm ID	2051705	
78.5 x 6.3mm, 0.75mm ID, SPME	2637505	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.supelco.com

Gas Chromatography

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GC Accessories

PerkinElmer Instruments

Supeltex Capillary Column Ferrules

Use with original PerkinElmer 1/16" or SSNE Style Nuts (p/n 28034-U).

24826-U



FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
0.20-0.25mm COLUMN ID x 0.4mm FERRULE ID				
M-2A	400°C	10	24826-U	
		50	28022-U	
M-4	450°C	10	28025-U	
		50	28028-U	
CapSeal Bullet	450°C	12	23488	
		48	23493	
0.32mm COLUMN ID x 0.5mm FERRULE ID				
M-2A	400°C	10	24824-U	
		50	28023-U	
M-4	450°C	10	28026-U	
		50	28031-U	
CapSeal Bullet	450°C	12	23489	
		48	23494-U	
0.53mm COLUMN ID x 0.8mm FERRULE ID				
M-2A	400°C	10	24823-U	
		50	28024-U	
M-4	450°C	10	28027-U	
		50	28032-U	
CapSeal Bullet	450°C	12	23490	
		48	23495	
0.50-0.75mm COLUMN ID x 1.0mm FERRULE ID				
CapSeal Bullet	450°C	12	23491-U	

SSNE Style Column Nut

DESCRIPTION	QTY.	CAT. NO.	PRICE
SSNE Style Column Nut	5	28034-U	

Therm-O-Ring Seals

Exclusive from Supelco. New high temperature O-ring seals can be used with inlet temperatures up to 375°C without sticking or fragmenting. They fit 1/4" capillary liners.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Therm-O-Ring Seals	25	21004-U	

Thermogreen LB-2 Septa

Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use
- Easier needle penetration and high puncture tolerance – ideal for autosamplers
- Rubber formulation exclusive to Supelco

Sigma series, 900 & 990, 8000 Auto Sampler

DESCRIPTION	QTY.	CAT. NO.	PRICE
11.0mm	50	20654	

Supeltex Capillary Column Ferrules (General Purpose)

Use with 1/16" compression nuts.



FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
0.20-0.25mm COLUMN ID x 0.4mm FERRULE ID				
M-2A	400°C	10	503258	
		50	22474	
M-4	450°C	10	22498	
		50	22480-U	
0.32mm COLUMN ID x 0.5mm FERRULE ID				
M-2A	400°C	10	22461	
M-4	450°C	10	22462	
		50	22412	
0.53mm COLUMN ID x 0.8mm FERRULE ID				
M-2A	400°C	10	22489	
		50	22473	
M-4	450°C	10	20628	
		50	22479	

Swagelok™ 1/16" Compression Nut

These nuts permit use of general purpose Supeltex and other 1/16" compression capillary ferrules.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Swagelok 1/16" brass nut	10	22021	

Inlet Liners

Our liners feature:

- High temperature silanization, to ensure inertness
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

(Pk/5)

DESCRIPTION	CAT. NO.	PRICE
AUTO SYSTEM 9000 SPLIT/SPLITLESS CAPILLARY INJECTOR		
Split Injection		
92mm x 0.25", 4mm ID	2630905	
92mm x 0.25", 4mm ID	2631005	
Splitless		
92mm x 0.25", 2mm ID	2631105	
92mm x 0.25", 0.75mm ID, SPME	2631205	
PPS (PROGRAMMED SPLIT/SPLITLESS)		
Split Injection		
86mm x 4mm, 2mm ID	2631305	
Splitless		
86mm x 4mm, 1mm ID	2631405	
Direct/On-Column/Other		
86mm x 4mm, On-Column	2631505	

Accessory Cases for PerkinElmer GC Capillary Products

We offer a clear plastic storage case with a foam insert. The foam easily stores your capillary accessories. The foam has been cut out to hold your Pk/5 inlet liners, Pk/50 septa, Pk/50 ferrules, Pk/25 Therm-O-Rings, and Column nuts.

DESCRIPTION	CAT. NO.	PRICE
GC Accessory Case for Perkin-Elmer	28037-U	







GC Accessories Varian Instruments

24826-U



Supeltex Capillary Column Ferrules

Use with Varian Nut (p/n 28033-U).

FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
0.20-0.25mm COLUMN ID x 0.4mm FERRULE ID				
M-2A 	400°C	10	24826-U	
		50	28022-U	
M-4 	450°C	10	28025-U	
		50	28028-U	
CapSeal Bullet	450°C	12	23488	
		48	23493	
0.32mm COLUMN ID x 0.5mm FERRULE ID				
M-2A 	400°C	10	24824-U	
		50	28023-U	
M-4 	450°C	10	28026-U	
		50	28031-U	
CapSeal Bullet	450°C	12	23489	
		48	23494-U	
0.53mm COLUMN ID x 0.8mm FERRULE ID				
M-2A 	400°C	10	24823-U	
		50	28024-U	
M-4 	450°C	10	28027-U	
		50	28032-U	
CapSeal Bullet	450°C	12	23490	
		48	23495	
0.50-0.75mm COLUMN ID x 1.0mm FERRULE ID				
CapSeal Bullet	450°C	12	23491-U	

Column Nuts



DESCRIPTION	CAT. NO.	PRICE
Column Nut for Varian GC (pk. of 5)	28033-U	

Thermogreen LB-2 Septa



Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use

DESCRIPTION	DIAMETER	CAT. NO.	PRICE
1177 Injectors	9mm	28021-U	
Packed column injectors	9.5mm	20652	
SPI	11mm	20654	
Capillary Injectors	11mm	20654	
	11.5mm	23154	
Saturn GC/MS	11.5mm	23154	

Accessory Case for Varian GC Capillary Products

We offer a clear plastic storage case with a foam insert. The foam easily stores your capillary accessories. The foam has been cut out to hold your Pk/5 inlet liners, Pk/50 septa, Pk/50 ferrules, and Column nuts.

DESCRIPTION	CAT. NO.	PRICE
GC Accessory Case for Varian	28036-U	

Deactivated Glass Inlet Liners

Our liners feature:

- High temperature silanization, to ensure inertness
- Consistent dimensions, tolerances and quality
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

(Pk/5)

DESCRIPTION	CAT. NO.	PRICE
MODEL 1177 CP INJECTOR		
Split Injection		
78.5 x 6.3mm, 4mm ID, wool packed	2048605	
78.5 x 6.3mm, cup design	2051005	
78.5 x 6.3mm, cup design, wool packed	2048205	
78.5 x 6.3mm, cup design, 10% OV-1 on Chromosorb packed	2055105	
Splitless		
78.5 x 6.5mm, tapered	2046605	
78.5 x 6.5mm, tapered, wool packed	2047805	
78.5 x 6.5mm, 2mm ID	2051305	
78.5 x 6.5mm, dual taper	2048505	
Direct/On-Column		
78.5 x 6.5mm, 1.5mm ID	2051705	
SPME		
78.5 x 6.3mm, 0.75mm ID	2637505	
MODEL 1075/1077 INJECTOR		
Split Injection		
72 x 6.3mm, with frit	2050505	
72 x 6.3mm, Packed with 10% OV-1 on Chromosorb packed	2055505	
72 x 6.3, unpacked	2636105	
72 x 6.3mm, with baffle	2050105	
72 x 6.3mm, wool packed	2636005	
72 x 6.3mm, w/cup unpacked	2049805	
Splitless		
74 x 6.3mm, straight	2050205	
74 x 6.35mm, SPME, 0.75mm ID	2635805	
Direct/On-Column		
72 x 6.3mm, fused silica	2636205	
73 x 0.25", universal flash, 0.53mm ID columns	2636805	
MODEL 1093-94 SPI		
Direct/On-Column		
54 x 4.6mm, direct injection,	2636305	
54 x 5mm, 3.4mm ID, frit	2636405	
54 x 4.6mm, wool packed	2636505	
MODEL 1078 INJECTOR		
Split Injection		
54 x 5mm, 3.4mm ID, unpacked	2637105	
54 x 5mm, 3.4mm ID, frit	2637205	
54 x 5mm, 3.4mm ID, packed	2637305	
54 x 5mm, 2mm ID, split/splitless, wool packed	2637705	
Splitless		
54 x 5mm, 2mm ID, unpacked	2637405	
54 x 5mm, 0.8mm ID, unpacked	2637805	
54 x 5mm, 0.5mm ID, temp ramp mode	2637605	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

Gas
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GC Accessories

Ferrules and Accessories

Select the best ferrule for your application:

Supeltex ferrules form leaktight seals without sticking to your column. And they don't require back ferrules.

We highly recommend:

- Supeltex M-4 and CapSeal Bullet ferrules for fused silica capillary columns
- Supeltex M-4 and Supeltex M-2A ferrules for glass columns
- Supeltex M-2A and Supeltex M-2 ferrules for metal columns

FERRULE SPECIFICATIONS

Supeltex M-1

Max. Temp.: 250°C

Composition: ceramic-filled Teflon

Characteristics: Ideal for connections to mass spectrometers. High reusability. Isothermal use only.

Supeltex M-2

Max. Temp.: 350°C

Composition: DuPont VESPEL SP-1 (100% polyimide)

Characteristics: High reusability.

Supeltex M-2A

Max. Temp.: 400°C

Composition: DuPont VESPEL SP-21 (85% polyimide/15% graphite)

Characteristics: Seals at 1/4 turn past fingertight. High reusability. Won't stick to metal or glass.

Supeltex M-2B

Max. Temp.: 350°C

Composition: DuPont VESPEL SP-211 (75% polyimide/25% graphite)

Characteristics: Conforms easily to capillary column, ensuring an effective seal and less chance of breakage.

Supeltex M-4

Max. Temp.: 450°C

Composition: flexible graphite

Characteristics: Seals at 1/4 turn past fingertight. Maximum sealing surface contact, reduced risk of column contamination at installation.

An improved design . Supelco has refined the design of graphite ferrules so that we can offer you the finest quality ferrule available. Compare these ferrules to the graphite ferrules you are now using – Supeltex M-4 ferrules offer a clean, sharp profile with minimal flash.

CapSeal Bullet

Max. Temp.: 450°C

Composition: graphite in an aluminum base

Characteristics: Seals at 1/8-turn past fingertight. Reusable. A special end taper reduces graphite extrusion into fitting.

Will not adhere to fittings. Reusable CapSeal Bullet ferrules consist of a graphite material captured in an aluminum base. This unique design keeps the ferrule from adhering to the fitting, making it easy to remove. Eliminate the headache of digging out a stuck ferrule and risking damage to your fitting.

O-Ring

Max. Temp.: 200°C

Composition: silicone

Characteristics: Seals column having OD over or under specifications.

Therm-O-Ring

Max. Temp.: 375°C

Characteristics: Won't stick to metal or glass. Superior replacement for Viton O-rings.

Supeltex Packed Column Ferrules

FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
1/4" COLUMN OD x 1/4" FERRULE ID				
M-1	250°C	10	22086-U	
		100	22087-U	
M-2	350°C	10	22320-U	
		50	22475	
M-2A	400°C	10	22481	
		50	22471	
M-4	450°C	10	22492	
		50	22478	
O-Rings	200°C	100	20407	
6mm COLUMN OD x 6mm FERRULE ID				
M-1	250°C	10	22089-U	
M-2A	400°C	10	22393	
M-4	450°C	10	22493	
1/8" COLUMN OD x 1/8" FERRULE ID				
M-1	250°C	10	22496	
		100	22309	
M-2	350°C	10	22321	
		50	22476	
M-2A	400°C	10	22483-U	
		50	22472	
M-4	450°C	10	22491	
Teflon Front ²	300°C	10	22058	
Teflon Back ²	300°C	10	22059	
1/16" COLUMN OD x 1/16" FERRULE ID				
M-1	250°C	10	22386	
M-2	350°C	10	20644-U	
M-2A	400°C	10	22487-U	
M-2A Indented Blank ¹	400°C	10	22488	
M-4	450°C	10	22495-U	

¹ Drill to fit your column.

² For Purge Traps.

Supeltex Reducing Ferrules

DIMENSIONS	QTY.	PRICE	CAT. NO.
SUPELTEX M-1			
1/8" to 1/16"	10	22387	
SUPELTEX M-2			
1/4" to 1/16"	10	22384	
1/4" to 1/8"	10	22314	
SUPELTEX M-2A			
1/8" to 1/16"	10	22484-U	
1/4" to 1/16"	10	22486	
1/4" to 1/8"	10	22485-U	
SUPELTEX M-4			
1/8" to 0.50mm	2	22458	
1/4" to 0.50mm	2	22457	



GC Accessories

Ferrules and Accessories

Supeltex Capillary Column Ferrules (General Purpose)

FERRULE TYPE	TEMP. LIMIT	QTY.	CAT. NO.	PRICE
0.20-0.25mm COLUMN ID x 0.4mm FERRULE ID				
M-2A	400°C	10	503258	
		50	22474	
M-2A 2-hole	400°C	5	22467	
M-2A Indented Blank ¹	400°C	10	22488	
M-2B	350°C	10	22510-U	
M-4	450°C	10	22498	
		50	22480-U	
CapSeal Bullet	450°C	12	23480-U	
		48	23485	
0.32mm COLUMN ID x 0.5mm FERRULE ID				
M-2A	400°C	10	22461	
M-2A 2-hole	400°C	5	22463	
M-2A Indented Blank ¹	400°C	10	22488	
M-2B	350°C	10	22511	
M-4	450°C	10	22462	
		50	22412	
CapSeal Bullet	450°C	12	23481	
		48	23486	
0.53mm COLUMN ID x 0.8mm FERRULE ID				
M-1	250°C	10	22499	
M-2A	400°C	10	22489	
		50	22473	
M-2A Indented Blank ¹	400°C	10	22488	
M-2B	350°C	10	22512	
M-4	450°C	10	20628	
		50	22479	
CapSeal Bullet	450°C	12	23482	
		48	23487	
0.75mm COLUMN ID x 1.0mm FERRULE ID				
M-2A Indented Blank ¹	400°C	10	22488	
M-4	450°C	10	22494	
0.50-0.75mm COLUMN ID x 1.2mm FERRULE ID				
M-2A	400°C	10	22459	
M-2A Indented Blank ¹	400°C	10	22488	
M-4	450°C	10	22460	

¹ Drill to fit your column.

Ferrules for 5mm Shimadzu Columns and Inlet Liners

Ferrules with metal spacers for 5mm OD Shimadzu columns and inlet liners. Replace Shimadzu part number 221-15563-91.

DESCRIPTION	CAT. NO.	PRICE
Ferrules for Shimadzu Columns (pk. of 4)	23311	



Ferrule Kits

Finding the right ferrule can be difficult. Simplify this chore with one of our ferrule starter kits. Each kit contains several types of Supeltex ferrules – you can determine which type is best for your applications. Kits include instructions for installing each ferrule.

Kit for Fused Silica Capillary Columns (0.40mm to 0.51mm OD): 4 drilled Supeltex M-2A, 4 indented blank Supeltex M-2A, 4 Supeltex M-4 ferrules, plus pin vise drill kit (Cat. No. 23820-U) and instructions.

Kit for Wide Bore Fused Silica Capillary Columns (0.8mm to 1.19mm OD): 4 Supeltex M-1, 4 Supeltex M-2A, 4 Supeltex M-4 ferrules, plus pin vise drill kit (Cat. No. 23820-U) and instructions.

Ferrule Kit for Glass Packed Columns (1/4" OD): 4 Supeltex M-1, 4 Supeltex M-2A, 4 Supeltex M-4 ferrules, a 6"/15cm x 1/4" practice piece of glass tubing, and instructions.

DESCRIPTION	CAT. NO.	PRICE
For Fused Silica Capillary Columns	22469	
For Wide Bore Fused Silica Capillary Columns	22468	
For Glass Packed Columns	20648	
Pin Vise Drill Kit	23820-U	



Pin Vise Drill Kit

Drill the exact bore you need in hard or soft ferrules. Includes pin vise and 14 drill bits:

0.33mm/0.0135"	0.77mm/0.031"	1.06mm/0.042"
0.40mm/0.016"	0.83mm/0.033"	1.17mm/0.046"
0.56mm/0.022"	0.91mm/0.036"	1.40mm/0.055"
0.63mm/0.025"	0.97mm/0.038"	1.61mm/0.061"
0.72mm/0.028"	1.02mm/0.040"	

The vise handle holds all bits to keep them at your fingertips. The vise also is handy for gripping fine wire when cleaning FID jets, syringe needles, or any other small orifice.

DESCRIPTION	CAT. NO.	PRICE
Pin Vise Drill Kit	23820-U	
DRILL BITS		
0.35mm	23811-U	
0.40mm	23810	
0.51mm	23809	

RELATED INFORMATION

For Leak Free Connections a guide to ferrule selection, connection techniques, and accessories, request the following free literature by phone or fax, or see our website.

No.	Subject
T100741	ferrule selection and installation

Order: 1.800.325.3010 Technical Service: 1.800.325.3041 Web: www.sigma-aldrich.com/supelco

Gas Chromatography

SUPELCO

GC Accessories

Septa and Accessories

We test every lot of Thermogreen LB-2 and Thermogreen LB-1 silicone septa, to ensure low bleed and high puncture tolerance. We also condition these septa – they are ready to use, right from the container.

Thermogreen LB-2 Septa

Lowest bleed of any septum we have tested.

- Extremely low bleed over a wide range of inlet temperatures – 100°C to 350°C
- Already conditioned, ready to use
- Easier needle penetration and high puncture tolerance – ideal for autosamplers
- Rubber formulation exclusive to Supelco

DISC DIAMETER		QTY.	CAT. NO.	PRICE
mm	INCH			
5.0	3/16	50	20638	
6.0	1/4	50	20651	
9.0	11/32	50	28021-U	
9.5 ¹	3/8	50	20652	
9.5 ¹	3/8	250	20666	
9.5 ¹	3/8	1000	20677	
10.0	13/32	50	20653-U	
10.0	13/32	250	23156	
10.0	13/32	1000	23157	
11.0	7/16	50	20654	
11.0	7/16	250	23163	
11.0	7/16	1000	23164	
11.5	11/24	50	23154	
12.5	1/2	50	20660-U	
12.5	1/2	250	20678	
14.0	9/16	50	20662-U	
16.0	5/8	50	20663	
17.0	21/32	50	23159	

CYLINDRICAL, FOR SHIMADZU INSTRUMENTS

Plug Type	10	20608
Plug Type	50	20633

DRILLED, FOR SOLID PHASE MICROEXTRACTION

9.5 ¹	3/8	25	23161
9.5 ¹	3/8	50	23162-U
11.0	7/16	25	23167
11.0	7/16	50	23168

¹ We recommend a 9.5mm (3/8") septum to those who previously used the 9mm size.

Thermogreen LB-1 Septa

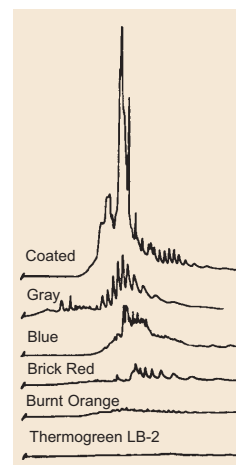
For overall dependability.

- Inlet temperature: 50°C to 300°C

DISC DIAMETER		QTY.	CAT. NO.	PRICE
mm	INCH			
9.5	3/8	50	20659-U	
10.0	13/32	50	20657-U	
11.0	7/16	50	20658	
12.5	1/2	50	20661	

CYLINDRICAL, APPROX. 6mm DIAMETER x 9mm

Thru-Hole Type	100	20667
Half-Hole Type	100	20668



93-0132

Bleed after 25 punctures
Temperature: 40°C to 250°C
Injector Set Point: 350°C

P000183

FREE MUG!



P000331

With Thermogreen LB-2 Septa

Ask for your free mug when you order any package of Thermogreen LB-2 septa.

DESCRIPTION	CAT. NO.
Free Mug	1714-U

RELATED INFORMATION:

For Low Bleed, High Temperature Septa useful application note describing criteria for selecting a septum, request the following free literature by phone or fax, or see our website.

No. Subject
T395082 Low Bleed, High Temperature GC Septa Improve Baseline Stability

GC Accessories Septa and Accessories

Pyrosep S-1 Septa

Inlet Temperature: 300°C to 400°C – Pyrosep S-1 septa are made from a Teflon-type elastomer conditioned at 300°C to minimize bleed. Because they are relatively hard, they must be used with a needle guide (to prevent the needle from buckling) and only at high temperatures. Our metal adapter rings offer substantial savings by enabling you to use smaller septa.



Pyrosep S-1 Septa

DISC DIAMETER		QTY.	CAT. NO.	PRICE
mm	INCH			
6	1/4	10	22369	
9.5	3/8	10	22370-U	

ADAPTER RINGS(PK. OF 2)

9.5mm OD x 6mm ID ¹	22338
--------------------------------	-------

¹ Use with 6mm septa, to replace 9.5mm septa.

GR-2 Septa

DISC DIAMETER		QTY.	CAT. NO.	PRICE
mm	INCH			
5.0	3/16	100	20712	
6.0	1/4	100	20442-U	
9.5	3/8	100	20405	
9.5	3/8	250	20625	
9.5	3/8	1000	20627	
10.0	13/32	100	20441	
11.0	7/16	100	20421	
12.5	1/2	100	20413	

GR-2 RUBBER SHEET STOCK

290 x 290 x 3mm	20420-U
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GR-2 Septa

Inlet Temperature: 50°C to 200°C – Low cost gray silicone rubber septa for routine, isothermal use.

Hamilton Red Disc Septa

Inlet Temperature: to 200°C – A soft inner layer of silicone rubber sandwiched between hard outside layers.

Teflon-Faced Septa

Inlet Temperature: 200°C to 300°C – After the Teflon face is ruptured during injection, some bleeding will occur. Since this bleed increases as more rubber is exposed, we recommend using a needle guide to reduce the size of the punctured area.

SS-138 123 mil off-white silicone rubber / 2 mil ivory Teflon.

SS-174 123 mil off-white silicone rubber / 2 mil yellow Teflon. Improved version of the SS-138 with less bleed.

Hamilton Red Disc Septa

DISC DIAMETER		QTY.	CAT. NO.	PRICE
mm	INCH			
9.0	11/32	12	20416	
10.0	13/32	12	20417	
12.5	1/2	12	20418	

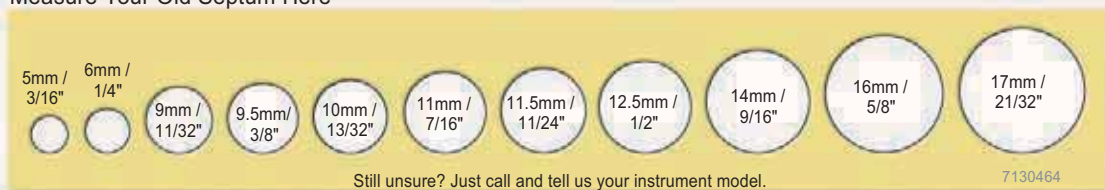
Teflon-Faced Septa

DISC DIAMETER		QTY.	CAT. NO.	PRICE
mm	INCH			
SS-138				
6.0	1/4	100	22652	
9.5	3/8	100	20459	
9.5	3/8	250	22622	
10.0	13/32	100	20465	
11.0	7/16	100	22730	
12.5	1/2	100	20460-U	
SS-174				
6.0	1/4	100	22654	
9.5	3/8	100	22656	
9.5	3/8	250	22618	
9.5	3/8	1000	22619	
10.0	13/32	100	22647	
11.0	7/16	100	22731	
12.5	1/2	100	22657	
14.0	9/16	50	22732	

Septum Sizes for Various Chromatographs

MANUFACTURER	GC MODEL	DISC DIAMETER	
		mm	INCH
Agilent/HP	5880A, 5890	11	7/16
	5700 series, 5880	9.5	3/8
	5880/90, 6890, OCI ports	5	3/16
Antek	all	9.5	3/8
Finnigan	9600	9.5	3/8
Finnigan/Tremetics	9000, 9500	12.5	1/2
GOW-MAC	all	9.5	3/8
HNU	portable GC	9.5	3/8
Perkin-Elmer	Sigma series, 900 & 990,		
	8000, Auto Sampler	11	7/16
Shimadzu	14, 15A, 16, 17A	plug	
Thermoquest	8000 series	17	21/32
Tracor	220, 222, 540	12.5	1/2
	550, 560	9.5	3/8
Varian	packed column injectors	9.5	3/8
	SPI	11	7/16
	3700/Vista, capillary injectors	11/11.5	7/16/11/24
	Saturn GC/MS	11.5	11/24
	1177	9.0	11/32

Measure Your Old Septum Here



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Gas Chromatography

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GC Accessories

Septa and Accessories



Septum Nuts

Consistent septum tightness, fewer bent needles, easy leak detection. The needle guide in Supelco septum nuts ensures that the needle consistently penetrates the septum in the same place, prolonging septum life. The guide also prevents the needle from striking the edge of the column or bending during insertion. The 9/16" hexagonal nut head accommodates our torque wrench for consistent, optimum tightening. Each nut is supplied with easily interchangeable 1/2" and 1" guides. Use 9.5mm septa with each nut.

The stainless steel nuts hold up under heavy use (e.g., when septa are replaced daily). We also recommend using them for reactive samples, such as chlorinated pesticides. Aluminum nuts offer economy in light use or when samples are nonreactive (i.e., when metal columns are used).

Nut N-1 fits PE-3920, 900, Sigma series, Agilent/HP-5700, other ports accepting 1/4" Swagelok nut, 7/16" threads, 20/inch.

Nut N-2 fits Varian 3700, other ports accepting 1/4" nut, 7/16" threads, 24/inch.

Use with packed columns only. Also see torque wrench.

DESCRIPTION	CAT. NO.	PRICE
SEPTUM NUT N-1		
Stainless Steel	22399	
All Aluminum	22497	
SEPTUM NUT N-2		
All Aluminum	22402	

¹ Aluminum needle guide.



Torque Wrench

Take the guesswork out of tightening a septum nut. The handle of the Supelco septum nut torque wrench slips when preset torque (8 inch-lbs.) is reached. Helps prevent leaking septa, excess bleed, and difficult septum penetration. Deepwell socket (9/16") fits over the Supelco septum nut even with a needle guide attached.

DESCRIPTION	CAT. NO.	PRICE
Torque Wrench	22661	

20855



Injection Port Rethreader

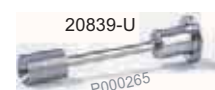
Die, enclosed in a knurled brass jacket, restores worn injection port threads, ensuring a good septum nut seal.

DESCRIPTION	CAT. NO.	PRICE
For ports accepting 1/4" Swagelok nuts ¹	20855	
1/8" Swagelok nuts ²	20856	
In Varian instruments ³	20854	

¹ 7/16", 20 threads/inch

² 5/16", 20 threads/inch

³ 7/16", 24 threads/inch



Needle Guide

Prolongs septum and needle life. Use with the septum holder already in your instrument. Requires a 3/16" diameter hole in the holder. If hole in your septum holder is too small, simply drill to 3/16" to insert guide.

DESCRIPTION	CAT. NO.	PRICE
Needle Guide	20839-U	



Septum Pullers

Our hook septum puller is great for removing soft silicone septa and graphite ferrules from 1/4" Swagelok nuts. Has dozens of other uses around the lab.

The screw septum puller is perfect for removing soft silicone septa and harder high temperature septa such as the Pyrosep S-1.

DESCRIPTION	CAT. NO.	PRICE
Hook Septum Puller	20352	
Screw Septum Puller	20353	



Septum Inserter








No burned fingers – no contaminated septa! Use the Supelco Septum Inserter to install a septum in any GC injection port that uses 9.5mm - 11mm septa. Eliminates the potential for burned fingers; prevents septum contamination from finger oils or dropping on the floor.

DESCRIPTION	CAT. NO.	PRICE
Septum Inserter	21385-U	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

Deactivated Glass Liners for Packed Column Injection Ports

We can prepare liners to your specifications. Just call our Ordering and Customer Service Departments for a quote. These deactivated glass liners prevent reaction between active sample components and the injection port's metal surfaces.






INSTRUMENT MANUFACTURER & MODEL	LINER DESCRIPTION	MFR. PART NO.	QTY.	CAT. NO.	PRICE
AGILENT/HP 5700, 5830/40A, 5880A, 5890A					
	Glass liner	5080-8732	5	20508	
91.5mm x 3mm OD	1.8mm ID		25	20511	
PERKIN-ELMER 3920					
	Glass liner (small bore)	0009-1614	1	26301	
143mm x 4.6mm OD	1.5mm ID				
PERKIN-ELMER 8000, SIGMA 2000/2100, SIGMA 1B-4B & 300 MANUFACTURED 1978 OR LATER					
	Glass liner	0330-2221	1	26300-U	
101mm x 4.6mm OD	2.75mm ID		5	26409	
PERKIN-ELMER AUTO SYSTEM, MODEL 9000					
Unpacked	Packed column	N610-1048	1	2631601	
	3mm ID		5	2631605	
112mm x 6mm OD			25	2631625	
Packed (deactivated glass wool)	For dirty samples		5	2631705	
	3mm ID		25	2631725	
112mm x 6mm OD					
VARIAN UNIVERSAL FLASH INJECTORS 1060-60, 3300, 3400, 3500-3600, OLDER 3700/VISTA					
	Glass injector insert	37-000813-00	1	26369	
72mm x 6.3mm OD	(wool packed)		5	26426	
			25	26481	
VARIAN MODULINE AND OTHER OLDER MODELS					
	Glass insert	6-000107-01	10	26370-U	
5½"/14cm x 1/8" OD	1.8mm ID				

Deactivated Glass Liners for Capillary Injection Ports

A regular schedule of inlet liner replacement will help prevent adsorption problems that can otherwise drastically affect analysis. We also can prepare replacement liners for other instruments or unique liners from your own design. Just call for a quote.

Our liners feature:

- High temperature silanization, to ensure inertness
- Consistent dimensions, tolerances and quality
- In-house manufacturing that meets or exceeds instrument manufacturer's specifications

INSTRUMENT MANUFACTURER & MODEL	APPLICATION	MFR. PART NO.	QTY.	CAT. NO.	PRICE
ATAS OPTIC 2 HIGH VOLUME INJECTOR					
Unpacked with single frit			1	2632601	
			5	2632605	
80mm x 5mm OD x 3mm ID			25	2632625	
CARLO ERBA/FISONS MODEL 6000 SERIES					
HS glass (2mm ID)	Trace analytes	45300300	1	2632001	
			5	2632005	
79.5mm x 5.5mm OD			25	2632025	
HS glass (4mm ID)	Trace analytes	45300400	5	2632105	
			25	2632125	
79.5mm x 5.5mm OD					
Splitless	4mm ID (with slot)	High & low MW analytes	1	2632301	
			5	2632305	
99mm x 5.5mm OD					
1.8mm ID (with slot)	Trace analytes	45320020	1	2632401	
			5	2632405	
99mm x 5.5mm OD					
















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Gas Chromatography

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GC Accessories

Inlet Liners

	INSTRUMENT MANUFACTURER & MODEL	APPLICATION	MFR. PARTNO.	QTY.	CAT. NO.	PRICE
	AGILENT/HP MODELS 4890, 5880, 5890, 6890					
	Cup (unpacked)	High & low MW analytes	18740-80190	5 25	2051005 2051025	
	 78.5mm x 6.3mm OD					
	Cup (wool packed)	Dirty samples	18740-80190 ¹	1 5 25	2048201 2048205 2048225	
	 78.5mm x 6.3mm OD					
Split	Cup (packed w/ 10% OV-1 on Chromosorb-W HP)	Dirty samples Traps non-volatiles Reduces discrimination	18740-60840	1 5 25	2055101 2055105 2055125	
	 78.5mm x 6.3mm OD					
	Split/splitless (4mm ID, wool packed)	General For 7673 autosampler	19251-60540	1 5 25	2048601 2048605 2048625	
	 78.5mm x 6.3mm OD					
Splitless	2mm ID	Trace analytes Samples <2µL	18740-80220 ² 5181-8818	1 5 25	2051301 2051305 2051325	
	 78.5mm x 6.5mm OD					
	Dual-tapered	Active analytes in trace quantities	5181-3315	1 5 25	2048501 2048505 2048525	
	 78.5mm x 6.5mm OD					
Splitless	Tapered (unpacked)	Active analytes in trace quantities	5181-3316	1 5 25	2046601 2046605 2046625	
	 78.5mm x 6.5mm OD					
	Tapered (wool packed)	General For 7673 autosampler	5062-3587	1 5 25	2047801 2047805 2047825	
	 78.5mm x 6.5mm OD					
Direct	0.75mm ID	SPME ³ Small volume	no equivalent	1 5 25	2637501 2637505 2637525	
	 78.5mm x 6.3mm OD					
	1.5mm ID	Headspace & purge/trap devices	18740-80200	1 5 25	2051701 2051705 2051725	
	 78.5mm x 6.5mm OD					
	FINNIGAN MODELS 9001, GCQ					
	Cup (unpacked)	High & low MW analytes	18740-80190	5 25	2051005 2051025	
	 78.5mm x 6.3mm OD					
	Cup (wool packed)	Dirty samples	18740-80190 ¹	1 5 25	2048201 2048205 2048225	
	 78.5mm x 6.3mm OD					
Split	Cup (packed w/ 10% OV-1 on Chromosorb-W HP)	Dirty samples Traps non-volatiles Reduces discrimination	18740-60840	1 5 25	2055101 2055105 2055125	
	 78.5mm x 6.3mm OD					
	Split/splitless (4mm ID, wool packed)	General For 7673 autosampler	19251-60540	1 5 25	2048601 2048605 2048625	
	 78.5mm x 6.3mm OD					
Splitless	2mm ID	Trace analytes Samples <2µL	18740-80220 ² 5181-8818	1 5 25	2051301 2051305 2051325	
	 78.5mm x 6.5mm OD					
	78.5mm x 6.5mm OD					
















¹ Supelco version has been modified to enhance performance.

² Instrument manufacturer's nondeactivated liner

³ Solid Phase Microextraction

GC Accessories Inlet Liners

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INSTRUMENT MANUFACTURER & MODEL		APPLICATION	MFR. PARTNO.	QTY.	CAT. NO.	PRICE
FINNIGAN MODELS 9001, GCQ (CONT'D)						
Splitless	Dual-tapered 	Active analytes in trace quantities	5181-3315	1	2048501	
				5	2048505	
				25	2048525	
	78.5mm x 6.5mm OD Tapered (unpacked) 	Active analytes in trace quantities	5181-3316	1	2046601	
				5	2046605	
				25	2046625	
78.5mm x 6.5mm OD Tapered (wool packed) 	General For 7673 autosampler	5062-3587	1	2047801		
			5	2047805		
			25	2047825		
PERKIN-ELMER MODELS 2000, 8000						
Direct	0.75mm ID 	SPME ³ Small volume	no equivalent	1	2637501	
				5	2637505	
				25	2637525	
	78.5mm x 6.3mm OD 1.5mm ID 	Headspace & purge/trap devices	18740-80200	1	2051701	
				5	2051705	
				25	2051725	
	78.5mm x 6.5mm OD					
PERKIN-ELMER MODELS 2000, 8000						
Split	Wide bore, 4mm ID 	General purpose Dirty samples	0330-5181	1	2630301	
				5	2630305	
				25	2630325	
	100mm x 5mm OD narrow bore, 2mm ID 	Trace analytes	0330-5180	1	2630401	
				5	2630405	
				25	2630425	
Splitless	100mm x 5mm OD Glass (unpacked) 	For high linearity	N600-2017	1	2630601	
				25	2630625	
	88mm x 2mm					
PERKIN-ELMER AUTO SYSTEM, MODEL 9000 SPLIT/SPLITLESS CAPILLARY INJECTOR						
Split		General purpose	N610-1052 N612-1001 ⁴	1	2630901	
				5	2630905	
				25	2630925	
	92mm x 0.25" OD x 4mm ID Packed (deactivated glass wool) 	General purpose Dirty samples		5	2631005	
				25	2631025	
Splitless	92mm x 0.25" OD x 4mm ID 	Trace analytes	N612-1002 ⁴	5	2631105	
				25	2631125	
		92mm x 0.25" OD x 2mm ID 	SPME		5	2631205
	92mm x 0.25" OD x 0.75mm ID					
PERKIN-ELMER PROGRAMMED SPLIT/SPLITLESS INJECTION (PSS)						
Split			N612-1004 ⁴	1	2631301	
				5	2631305	
				25	2631325	
	86mm x 4mm OD x 2mm ID 	Trace analytes	N612-1006 ⁴	5	2631405	
On-Column	86mm x 4mm OD x 1mm ID 	Thermolabile Trace analytes	N610-1539	5	2631505	
	86mm x 4mm OD					

³ Solid Phase Microextraction.

⁴ Instrument manufacturer's quartz liner.

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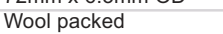
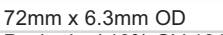

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GC Accessories

Inlet Liners

	INSTRUMENT MANUFACTURER & MODEL	APPLICATION	MFR. PARTNO.	QTY.	CAT. NO.	PRICE
SHIMADZU MODELS 9A/AM/15A/16 WITH SPL-G9/15 INJECTORS						
Split	 127mm x 5mm OD	High & low MW analytes	221-25822-01	1	2633001	
				5	2633005	
				25	2633025	
Splitless	 127mm x 5mm OD	Trace analytes	221-25440-03	1	2633101	
				5	2633105	
				25	2632901	
Splitless/SPME	 127mm x 0.75mm ID x 5mm OD	SPME		1	2632901	
				5	2632905	
				25	2632925	
SHIMADZU MODELS 14/15A/16 WITH SPL-14 INJECTORS						
Split	 99mm x 5mm OD	General purpose	221-32544-01	1	2633301	
				5	2633305	
				25	2633325	
Splitless/SPME	 99mm x 5mm OD	Trace analytes	221-32544-00	1	2633401	
				5	2633405	
				25	2633425	
Splitless/SPME	 99mm x 5mm OD x 0.75mm ID	SPME		1	2633501	
				5	2633505	
				25	2633525	
SHIMADZU MODEL 17A WITH SPL-17 INJECTORS						
Split	 95mm x 5mm OD	General purpose	221-41444-00	1	2633601	
				5	2633605	
				25	2633625	
Splitless/SPME	 Packed (deactivated glass wool)	Dirty samples		5	2632705	
				25	2632725	
				25	2633705	
Splitless/SPME	 95mm x 5mm OD	Trace analytes	221-41544-00	5	2633705	
				25	2633725	
				25	2633901	
Splitless/SPME	 95mm x 5mm OD x 0.75mm ID	SPME		1	2633901	
				5	2633905	
				25	2633925	
Wide Bore	 Internal taper	Wide bore capillary columns	221-41599	1	2633801	
				5	2633805	
				25	2633825	
Wide Bore	 95mm x 5mm OD			1	2633801	
				5	2633805	
				25	2633825	
VARIAN 1075/1077 INJECTORS						
Split	 72mm x 6.3mm OD	High & low MW analytes	16-000830-00 ²	1	2636101	
				5	2636105	
				25	2636125	
Split	 72mm x 6.3mm OD with frit	Dirty samples	16-000830-01 ² 01-900109-03	1	2050501	
				5	2050505	
				25	2050525	
Split	 72mm x 6.3mm OD Wool packed	Dirty samples	01-900109-01	1	2636001	
				5	2636005	
				25	2636025	
Split	 72mm x 6.3mm OD Packed w/ 10% OV-101 on Chromosorb W HP 80/100	Complete vaporization Aids thermal transfer	03-949809-00 ²	1	2055501	
				5	2055505	
				25	2055525	
Split	 72mm x 6.3mm OD			1	2055501	
				5	2055505	
				25	2055525	

² Instrument manufacturer's nondeactivated liner.

³ Solid Phase Microextraction.















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Gas
Chromatography

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GC Accessories Inlet Liners

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	INSTRUMENT MANUFACTURER & MODEL	APPLICATION	MFR. PARTNO.	QTY.	CAT. NO.	PRICE		
VARIAN 1075/1077 INJECTORS (CONT'D)								
Split	with baffle 	Analytes with close boiling points	16-000829-00 ² 01-900109-04	1	2050101			
				5	2050105			
	72mm x 6.3mm OD Cup (unpacked)			25	2050125			
Split		High & low MW analytes	01-900109-02	1	2049801			
				5	2049805			
	72mm x 6.3mm OD Straight			25	2049825			
Splitless/SPME		Trace analytes	03-949437-90 ² 01-900109-05	1	2050201			
				5	2050205			
	74mm x 6.3mm OD 0.75mm ID			25	2050225			
Splitless/SPME		SPME Small volume	no equivalent	1	2635801			
				5	2635805			
	74mm x 6.35mm OD			25	2635825			
Direct	Fused silica 	High linearity (0.25/0.32mm ID columns)	03-908725-00	1	2636201			
				5	2636205			
	72mm x 6.3mm OD							
Universal Flash	Glass flash inserts (0.53mm ID columns) 		03-918339-00	1	2636801			
				5	2636805			
	73mm x 0.25" OD			25	2636825			
VARIAN 1093-94 SPI INJECTOR								
Direct/SPME	Glass insert (high performance) 	High linearity (0.25 & 0.32mm ID columns)	03-918332-01 ² 01-900109-06 01-900066-18	1	2636301			
				5	2636305			
	54mm x 4.6mm OD Flash & on-column insert (0.53mm ID column)			25	2636325			
Direct/SPME		High linearity (0.53mm ID columns) SPME	03-918332-02 ² 01-900109-07 01-900066-19	1	2636401			
				5	2636405			
	54mm x 4.6mm OD Glass insert (wool packed)			25	2636425			
Direct/SPME		Dirty samples	01-900109-08	5	2636505			
				25	2636525			
	54mm x 4.6mm OD							
VARIAN 1078/1079 INJECTOR								
Split	Frit 	Instantaneous sample vaporization	03-918464-01	1	2637201			
				5	2637205			
				25	2637225			
	54mm x 5mm OD x 3.4mm ID Unpacked							
					03-918464-00	1	2637101	
						5	2637105	
Split				25	2637125			
	54mm x 5mm OD x 3.4mm ID Packed							
			03-918956-00	1	2637301			
				5	2637305			
				25	2637325			
	Splitless/SPME	54mm x 5mm OD x 3.4mm ID Unpacked	Minimizes dead volume	03-918466-00	1	2637401		
						5	2637405	
						25	2637425	
54mm x 5mm OD x 2mm ID		SPME	03-925330-00	1	2637801			
						5	2637805	
54mm x 5mm OD x 0.8mm ID								

² Instrument manufacturer's nondeactivated liner.

³ Solid Phase Microextraction.

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G000454-486

Gas Chromatography

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GC Accessories

Inlet Liners

	INSTRUMENT MANUFACTURER & MODEL	APPLICATION	MFR. PARTNO.	QTY.	CAT. NO.	PRICE
VARIAN 1078/1079 INJECTOR (CONT'D)						
Splitless		Trace analytes	03-925331-00	1	2637601	
		Thermolabile and		5	2637605	
		polar compounds		25	2637625	
Split/Splitless	54mm x 5mm OD x 0.5mm ID	Nonpolar compounds	03-925350-00	1	2637701	
	Packed (deactivated glass wool)			5	2637705	
				25	2637725	
VARIAN MODEL CP-1177 INJECTOR						
Direct	Cup (unpacked)	High & low	18740-80190	5	2051005	
		MW analytes		25	2051025	
	78.5mm x 6.3mm OD					
Direct	Cup (wool packed)	Dirty samples	18740-80190 ¹	1	2048201	
				5	2048205	
	78.5mm x 6.3mm OD			25	2048225	
Direct	Cup (packed w/ 10% OV-1 on Chromosorb-W HP)	Dirty samples		1	2055101	
		Traps non-volatiles	18740-60840	5	2055105	
	78.5mm x 6.3mm OD	Reduces discrimination		25	2055125	
Split/splitless	Split/splitless (4mm ID, wool packed)	General		1	2048601	
		For 7673 autosampler	19251-60540	5	2048605	
	78.5mm x 6.3mm OD			25	2048625	
Splitless	2mm ID	Trace analytes	18740-80220 ²	1	2051301	
		Samples <2µL	5181-8818	5	2051305	
	78.5mm x 6.5mm OD			25	2051325	
Splitless	Dual-tapered	Active analytes in trace quantities	5181-3315	1	2048501	
				5	2048505	
	78.5mm x 6.5mm OD			25	2048525	
Splitless	Tapered (unpacked)	Active analytes in trace quantities	5181-3316	1	2046601	
				5	2046605	
	78.5mm x 6.5mm OD			25	2046625	
SPME	Tapered (wool packed)	General	5062-3587	1	2047801	
		For 7673 autosampler		5	2047805	
	78.5mm x 6.5mm OD			25	2047825	
SPME	0.75mm ID	SPME ³	no	1	2637501	
		Small volume	equivalent	5	2637505	
	78.5mm x 6.3mm OD			25	2637525	
SPME	1.5mm ID	Headspace &	18740-80200	1	2051701	
		purge/trap devices		5	2051705	
	78.5mm x 6.5mm OD			25	2051725	
	54mm x 5mm OD x 2mm ID					

¹ Supelco version has been modified to enhance performance

² Instrument manufacturer's nondeactivated liner.

³ Solid Phase Microextraction.

Ferrules/Metal Spacers for 5mm
Shimadzu Inlet Liners and Columns
Replace Shimadzu part number 221-15563-91.

DESCRIPTION	CAT. NO.	PRICE
Ferrules for Shimadzu Liners (pk. of 4)	23311	

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Gas
Chromatography

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GC Accessories Injection Sleeves

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A syringe with a 6"/15.24cm needle is required to deposit samples properly within the sleeve.

Cool On-Column Injection Sleeve Kit

Minimize splitter discrimination - Splitter discrimination among sample components that have different boiling points causes inaccurate quantification among components. Using our 6.25"/16cm x 1/4" Cool On-Column Injection Sleeve (Cat. No. 20476) in conjunction with a 0.53mm ID SPB-1 Thin Film capillary column, we found splitter discrimination was negligible for paraffins up to C44.

The sleeve was designed for use with a 0.53mm ID fused silica column. Use the hardware supplied in the injection sleeve kit (Cat. No. 23630) to install the sleeve in a 1/4" packed column injection system (on-column injection only).

DESCRIPTION	CAT. NO.	PRICE
Cool On-Column Injection Sleeve Kit (Injection sleeve plus 1/4" connecting hardware)	23630	
Cool On-Column Injection Sleeve	20476	
Reducing Union	23633	
Male Nuts, 1/16" (pk. of 4)	23805	
Knurled Male Nuts, 1/16" (pk. of 2)	23812	
Hamilton 701N Syringe (10µL), 6"/15.24cm fixed needle	21574	



Injection Tee Kit

Simultaneous analyses on two wide bore columns. This kit enables you to characterize samples on two wide bore columns of different polarity. The tee is deactivated and the inlet chamfered for use with automatic samplers. Use in 1/4" injection ports.

Kit includes deactivated glass tee, two 1/4" x 1/16" stainless steel reducing unions, ferrules for 0.53mm and 0.75mm ID columns, and instructions.

DESCRIPTION	CAT. NO.	PRICE
Injection Tee Kit #1 (6"/15cm tee)	23664	
Injection Tee Kit #2 (8"/20cm tee)	23665	
Tee, 6"/15cm	23666	
Tee, 8"/20cm	23667	
Reducing Union	23633	
Male Nuts, 1/16" (pk. of 4)	23805	
Knurled Male Nuts, 1/16" (pk. of 2)	23812	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.supelco.com

Gas Chromatography

SUPELCO

GC Accessories Capillary GC

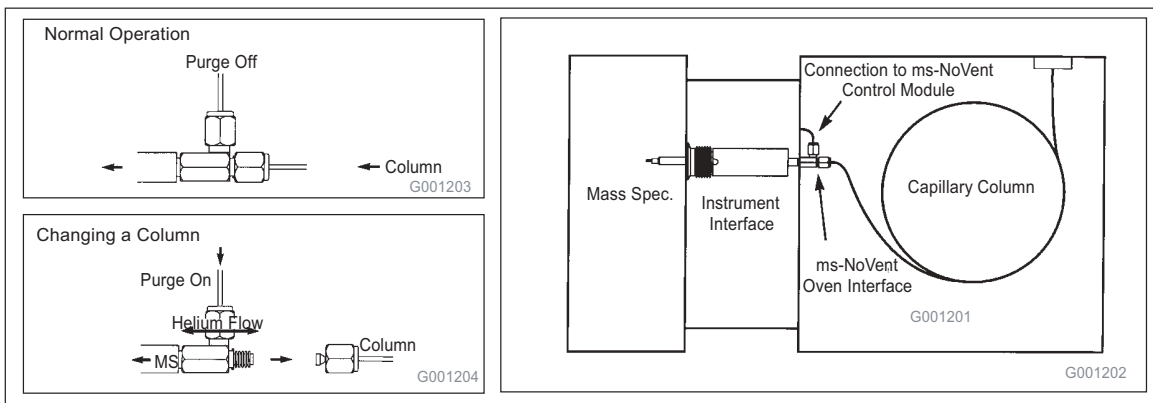
SGE ms-NoVent System

A new, time-saving accessory for GC/MS systems. Typically, much GC/MS operating time is wasted when the capillary GC column must be disconnected at the detector end. Disconnecting a column means shutting down the ion source, cooling the mass spectrometer, and venting the MS to air. After the column is replaced or reconnected, the system must be evacuated and allowed to stabilize for hours before useful data can be obtained. The time involved can vary from 3-4 hours, at best, to several days, but these precautions are necessary to avoid damaging the ion source by exposure to oxygen or diffusion oil.

In contrast, the ms-NoVent* system allows you to use the MS almost immediately after replacing a column, producing results in minutes, rather than after many hours. Installing a new column simply involves turning on a helium purge gas, then replacing the column. There is no time limit to how long the MS system can be left open. If you wish to condition the new column before connecting it to the MS, simply leave the helium purge on until the column has been conditioned, cool the system down, and connect the column.

The system consists of an external control module (80mm x 50mm x 150mm) and an interface that connects to the inlet in the mass spectrometer. A fused silica transfer line (restrictor), specific in length for each MS instrument, fits inside the inlet transfer line restricts the gas flow that can be pulled into the ion source, allowing a low pressure to be maintained in the MS. On the control module, the helium purge, on the MS side of the fused silica restrictor, ensures that there is flow in only one direction, preventing air from being drawn into the mass spectrometer. As a result, only pure helium can enter the MS while the system is open.

The ms-NoVent system can be installed in approximately 30 minutes. The system is compatible with Hewlett-Packard (5970, 5971/5972, 5973), Varian (Saturn), and Shimadzu (5000/5050) GC/MS instruments. Order the fused silica restrictor appropriate for your instrument.



DESCRIPTION	CAT. NO.	PRICE
ms-NoVent System	26191-U	
RESTRICTORS FOR MS-NOVENT SYSTEM		
Restrictor for HP5970	26192-U	
Restrictor for HP 5971/5972	26193-U	
Restrictor for HP 5973	26194-U	
Restrictor for Varian Saturn	26195-U	
Restrictor for Shimadzu 5000/5050	26196-U	

¹ Restrictor not included with ms-NoVent system. Order separately according to the model of your GC/MS system.

* Patent pending.

GC Accessories

Capillary GC



Capillary Starter Kit

If you're a new capillary chromatographer or an experienced chromatographer tired of improvising with packed column tools, you can have everything you need right at hand. As a bonus, we gave the kit a special price.

Here's what you get:

- Tweezers
- Pin vise drill kit
- Pocket mirror
- Dispoz-a-lamp
- Capillary Cleaving Tool
- Screw-type septum puller
- 1/4" x 5/16" open end wrench
- 6" (15cm) stainless steel ruler
- 6"/15cm pipe cleaners (6)

DESCRIPTION	CAT. NO.	PRICE
Capillary Starter Kit	23639	

Pin Vise Drill Kit

Drill the exact bore you need in hard or soft ferrules. Includes pin vise and 14 drill bits:

0.33mm/0.0135"	0.77mm/0.031"	1.06mm/0.042"
0.40mm/0.016"	0.83mm/0.033"	1.17mm/0.046"
0.56mm/0.022"	0.91mm/0.036"	1.40mm/0.055"
0.63mm/0.025"	0.97mm/0.038"	1.61mm/0.061"
0.72mm/0.028"	1.02mm/0.040"	

The vise handle holds all bits to keep them at your fingertips. The vise also is handy for gripping fine wire when cleaning FID jets, syringe needles, or any other small orifice.

DESCRIPTION	CAT. NO.	PRICE
Pin Vise Drill Kit	23820-U	
DRILL BITS (PKS. OF 6)		
0.35mm	23811-U	
0.40mm	23810	
0.51mm	23809	



Needle Files

Four-inch slim taper files to enlarge ferrule ID. Also handy for removing ferrules stuck in fittings.

DESCRIPTION	CAT. NO.	PRICE
Needle Files (pk. of 2)	23783	



Capillary Cleaving Tool

Makes scalpel-like cuts in both polyimide and fused silica, leaving no jagged edges to create problems. Industrial sapphire cutting edges remain sharp indefinitely. The spring-loaded retractable blade version reduces the chance of breakage if the tool is dropped.

DESCRIPTION	CAT. NO.	PRICE
Cleaving Tool with Retractable Blade	23814	
with Fixed Blade	23740-U	

REPLACEMENT PARTS

Replacement Blade for 23814	23815	
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Shortix Fused Silica Tubing Cutter

A rotating diamond cutting blade ensures precision cuts in fused silica capillary tubing. Even an inexperienced user can make the clean, 90° cuts required for high quality capillary gas chromatography. Cuts any diameter of fused silica tubing from 0.10mm ID through 0.53mm ID.

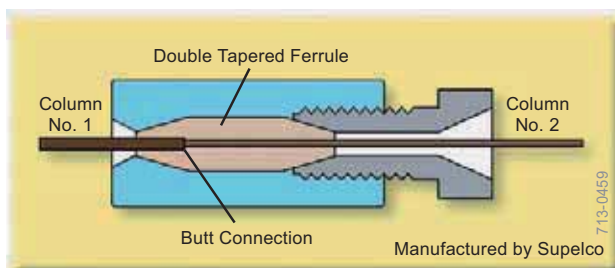
DESCRIPTION	CAT. NO.	PRICE
Shortix Fused Silica Tubing Cutter	21386-U	

GC Accessories

Capillary GC

Capillary Column Butt Connector

This patented device consists of a double-tapered ferrule and a stainless steel compression housing with a threaded cap. Small and light (2.3cm x 0.6cm, 4.4g with ferrule), it provides a gastight seal. You will find no change in column efficiency or inertness.



DESCRIPTION	CAT. NO.	PRICE
Butt Connector		
with 0.4mm ID Supeltext M-2 ferrule	23796	
body only (Select ferrules from table)	23804	
Replacement Nuts (pk. of 4)	23805	
Knurled Nuts (pk. of 2)	23812	

Supeltext Ferrules for Capillary Column Butt Connectors

FERRULE ID (mm)	CONNECTION (FUSED SILICA COLUMNS)	CAT. NO.	PRICE (PK. 2)
SUPELTEXT M-2 FERRULES			
0.25	0.1mm ID to like diameter	22585	
0.4	0.20-0.25mm ID to like diameter	23797	
0.5	0.32mm ID to like diameter	22464	
0.8	0.53mm ID to like diameter	22590-U	
0.4/0.8	0.20-0.25mm ID to 0.53mm ID	22465	
0.5/0.8	0.32mm ID to 0.53mm ID	22596	
0.5/1.2	0.32mm ID silica to 0.75mm ID glass	22466	

SUPELTEXT M-2B FERRULES

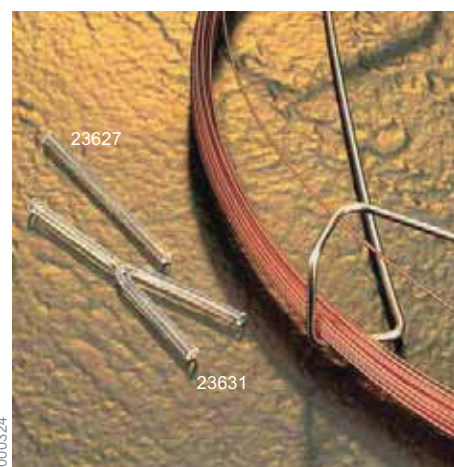
0.4	0.20-0.25mm ID to like diameter	22453	
0.5	0.32mm ID to like diameter	22454	
0.8	0.53mm ID to like diameter	22591	
0.4/0.8	0.20-0.25mm ID to 0.53mm ID	22455-U	
0.5/0.8	0.32mm ID to 0.53mm ID	22586	
0.5/1.2	0.32mm ID silica to 0.75mm ID glass	22456	

TFE Teflon Heat Shrink Tubing

Quickly repair or connect glass columns. Teflon heat shrink tubing fits over glass tubing up to 1.4mm OD, shrinks to 0.81mm.

DESCRIPTION	CAT. NO.	PRICE
TFE Teflon Heat Shrink Tubing (three 8"/20cm pieces)	23785	

¹Supelco, US Patent No. 4,529,230



GlasSeal Capillary Column Connectors

GlasSeal connectors quickly connect fused silica tubing of the same or different diameter – no tools, no leaks. Use them to connect a guard column or transfer line, repair a broken column, or connect two columns (same or different phases). A "Y" connector splits a sample to two columns or a column effluent to two detectors. Silanized for an inert inside surface. Choose borosilicate glass or fused silica. Use with our 0.25mm-0.53mm ID tubing.

DESCRIPTION	CAT. NO.	PRICE
GLASSEAL CAPILLARY COLUMN CONNECTORS		
Borosilicate Glass (pk. of 12)	20479	
Fused Silica (pk. of 5)	23627	
Fused Silica (pk. of 25)	23628	
"Y" GLASSEAL CONNECTORS		
Borosilicate Glass (each)	20480	
Fused Silica (each)	23631	
Fused Silica (pk. of 3)	23632	

Polyimide Sealing Resin

A GlasSeal connector will form a perfect seal between two glass or fused silica columns; a small drop of this resin makes the connection extremely durable. Also an excellent high temperature glue. Cure at 200°C; maximum temperature 350°C. 5g bottle with handy applicator cap.

DESCRIPTION	CAT. NO.	PRICE
Polyimide Sealing Resin (5g)	23817	



GC Accessories Capillary GC



Supelcarb Split Vent Trap

Adsorb toxic compounds longer than with conventional traps.

Typical split vent flow rates of 10-100mL/min carry most of the injected sample into the laboratory atmosphere. Many GC manufacturers recommend venting the split injection systems into a fume hood, but this is often impossible due to space constrictions. Another approach is to connect an adsorbent trap to the split vent outlet.

A Supelcarb Split Vent Trap traps a broad range of organic compounds. The high-capacity carbonaceous adsorbent has been specifically prepared for split vent applications – a narrow particle size distribution and spherical shape allow tight packing and less gas channeling than the irregular shape of activated charcoal particles.

Data show that breakthrough on the Supelcarb trap occurs after approximately 2 weeks at 65mL/min. Breakthrough on other traps often occurs before the manufacturer's recommended replacement time. We recommend using Supelcarb traps for longer effective trapping, and replacing the trap every two weeks.

BREAKTHROUGH ON SPLIT VENT TRAPS

	TYPE A	TYPE B	TYPE C	SUPELCARB
Breakthrough Time (Hours)	22.5	49.5	249.0	374.0
Breakthrough Volume (Liters)	88	193	971	1458
No. of Injections Before Breakthrough	45	99	498	748
Manufacturer's Recommended Replacement Time	168 hr	300 inj.	720 hr	336 hr

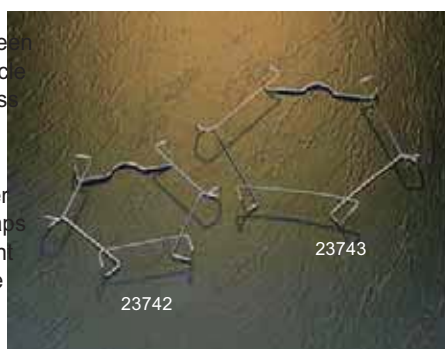
DESCRIPTION	CAT. NO.	PRICE
SUPELCARB SPLIT VENT TRAP STARTER KIT (one trap and an attachment kit)	22536	
REPLACEMENT SUPELCARB TRAPS		
Two Traps	2253502	
Five Traps	2253505	

Solvent Rinse Kit

Ideal for coating or washing capillary columns. Insert one end of the capillary column into the reservoir fitting and seal with a graphite ferrule. Gas pressure applied through a side arm forces the solution from the reservoir through the column.



DESCRIPTION	CAT. NO.	PRICE
Solvent Rinse Kit	23626	
Supeltex M-4 Ferrules, 0.8mm ID (pk. of 10) ¹	20628	



Cages for Fused Silica Columns

Unique design with minimal metal-to-column contact reduces the possibility of damaging your column's protective coating. Makes column hanging easier.

DESCRIPTION	CAT. NO.	PRICE
For 0.25mm ID Columns, 6"/15cm (pk. of 3)	23742	
For 0.32mm and 0.53mm ID Columns, 8"/20cm (pk. of 3)	23743	

Capillary Column Tags

Permanently label your capillary column. Keep loops secure during storage.

- Soft enough to imprint with a ball-point pen
- Big enough for all necessary information
- Lightweight — won't damage your column

DESCRIPTION	CAT. NO.	PRICE
Capillary GC Column Tags (pk. of 100)	23779	



GC Accessories

Packed Column GC



Glasrench Wrench

Joint slips when fitting is tight. Can pay for itself by saving just one column.

Connecting glass columns to a chromatograph often results in leaks because fittings are not tight enough, or in a broken column because the fittings are tightened too much. Our Glasrench lets you consistently apply just the correct force needed to tighten the ferrule – the wrench slips when too much force is applied. You know when to stop tightening and you don't damage your column. Because different ferrules require different amounts of tightening force, we offer two color-coded models.

DESCRIPTION	CAT. NO.	PRICE
Model A, Red (for Supeltex M-1, Supeltex M-2 ferrules)	22901	
Model C, Black (for Supeltex M-2A, Supeltex M-4 ferrules)	22903	



Torque Wrench

Take the guesswork out of tightening a septum nut.

The handle of the Supelco septum nut torque wrench slips when preset torque (8 inch-lbs.) is reached. Helps prevent leaking septa, excess bleed, and difficult septum penetration. Deepwell socket (9/16") fits over the Supelco septum nut even with a needle guide attached.

DESCRIPTION	CAT. NO.	PRICE
Torque Wrench	22661	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco



Ratchet Wrench

Jaws open to slip around the nut, then close. Convenient to use in a small chromatograph oven or other confined places.

DESCRIPTION	CAT. NO.	PRICE
7/16" (for 1/8" fittings)	20447	
9/16" (for 1/4" fittings)	20448	

Sylon-CT

To be sure the glass tubing you use for columns is inert, treat it with Sylon-CT solution (5% dimethyldichlorosilane in toluene). It deactivates the tubing for use up to 350°C to 400°C, far exceeding the capabilities of other deactivating agents used at room temperature. Sylon-CT also deactivates transfer lines and glass or glass-lined injection port liners. Instructions included.

DESCRIPTION	CAT. NO.	PRICE
Sylon-CT, pint	33065-U	

Rejuv-8

For packed columns only.

How can you improve deteriorating chromatographic results, salvage a tired column, or minimize peak tailing and sample loss when working with submicrogram samples? Simply inject 10-50µL of Rejuv-8 silylating agent directly onto your column. Contains no chlorosilanes.

DESCRIPTION	CAT. NO.	PRICE
Rejuv-8, 25mL	33059-U	

GC Accessories Packed Column GC



Column Tags

For a permanent record of important chromatographic data. Easily marked with a Burgess Vibrograver or other scribing tool. Choose engraved (just fill in the blank) or plain (engrave with any information you want to record).

DESCRIPTION	CAT. NO.	PRICE
Engraved, 2 straps (pk. of 50)	20396	
Plain, 1 strap (pk. of 100)	20401	



Plastic Column Caps

Easily slip over the end of the tubing, to protect your columns during storage. Pack of 100.

DESCRIPTION	CAT. NO.	PRICE
For 1/16" OD columns	20436	
For 1/8" OD columns	20437-U	
For 3/16" OD columns	20438-U	
For 1/4" OD columns	20439	



Restrictor

Prevents back diffusion of oxygen into the column during conditioning. Stainless steel Swagelok union with 1/2.5cm capillary tube.

DESCRIPTION	CAT. NO.	PRICE
Restrictor For 1/8" columns	20669	

Leak Tester Kit

Detect septum leaks without contaminating your column.

Eliminates placing leak detection fluid, a potential contaminant, directly onto the septum. Dip one end of the leak tester tube into Snoop and place the other end into the septum nut or needle guide. Bubbles indicate a leak. Kit includes 10 leak tester tubes and 8 ounces of Snoop.

DESCRIPTION	CAT. NO.	PRICE
Leak Tester Kit	22660-U	
Snoop, 8oz. bottle	20434	



Leak-Tec Leak Detector

Use at temperatures up to 210°C – Leak-Tec leak detector will not bubble on a heated part unless there is a leak. 283g pressurized can.

DESCRIPTION	CAT. NO.	PRICE
Leak-Tec Leak Detector, 283g	20566	

RELATED INFORMATION

Bulletin 890 is a detailed guide to nearly 200 packed column applications. Request a free copy by phone or fax, or see our website.

No.	Subject
T195890	packed column applications

Order: 1.800.325.3010 Technical Service: 1.800.355.3041 Web: www.sigma-aldrich.com/supelco

Chromatografia
de Gas

SUPELCO

GC Accessories

Packed Column GC



20402

Burgess Vibrograver

Eliminate gaps when packing your columns. The Burgess Vibrograver is ideal for vibrating columns or marking tags. 110VAC models: 9 watts, 0.08 amp, 60Hz; 220VAC model: 12 watts, 0.05 amp, 50Hz.

DESCRIPTION	CAT. NO.	PRICE
110VAC	20402	
110VAC self-grounding (three wires)	20391	
220VAC ¹	20398-U	

¹ Does not have a CE mark.

Stainless Steel Screening

Keep packing debris out of your detector. Use this 2" x 2" (5 x 5cm) stainless steel screening with 10µm openings to make your own end screens. Note: End screens cannot be used in aluminum columns.

DESCRIPTION	CAT. NO.	PRICE
Stainless Steel Screening	22327	



22406

E000812

Puller/Inserter Tool

Insert or remove wool plugs the easy way. The fork on one end feeds the plug into the column, then leaves it cleanly. The hook on the other end won't disrupt the packing when you remove the plug. Reduces contamination caused by handling glass wool with your fingers. Use with 1mm-4mm ID glass or 1/8", 1/4", 5mm OD metal columns.

Also removes injector liners from columns, or wool or foam plugs from adsorption tubes. Pays for itself the first time you use it!

DESCRIPTION	CAT. NO.	PRICE
Puller/Inserter Tool (pk. of 2)	22406	

Funnel and Tubing

Fill your packed columns with this convenient plastic funnel. Tygon tubing connects funnel to column. Simple, yet does the job.

DESCRIPTION	CAT. NO.	PRICE
Funnel and Tubing	20390-U	



22447

P000316

Column Filling Kits

All you need to quickly and efficiently pack your columns. Includes two puller/insertion tools (Cat. No. 22406), plastic funnel, rubber column connector, and 50g glass wool for plugs. Saves you money when compared to individually priced items.

DESCRIPTION	CAT. NO.	PRICE
Kit A (silane-treated glass wool)	22447	

Glass Wool

Choose silane treated (for general use), phosphoric acid treated (for acidic compounds such as barbiturates, free fatty acids, etc.), pesticide grade, or untreated (for special applications and do-it-yourself).

DESCRIPTION	CAT. NO.	PRICE
Silane Treated, 50g	20411	
Silane Treated, 250g	20410	
Phosphoric Acid Treated, 50g	20383	
Pesticide Grade, 10g	20409	
Untreated, 50g	20384	

GC Accessories Packed Column GC

Ultrasonic Cleaner

SPECIFICATIONS

Tank Size: 5½ x 6 x 4 in. (14 x 15 x 10cm)
Overall Size: 7½ x 8 ½ x 9 in. (19 x 22 x 23cm)
Weight: 7 lbs. (3.2kg)

Ultrasonic cleaning is fast, effective and safe. The Branson ultrasonic cleaner has more power than most comparable models. It ensures faster, more thorough cleaning of dirt, protein residue, and other debris from your glassware, fittings, syringes, needles, and other apparatus. It also is useful for ultrasonic digestion of environmental samples.



Branson cleaners are used routinely to clean electronics components, contact lenses, and gemstones – you can be sure they'll safely clean your glassware and system components. Recessed cleaning tank is enclosed in durable, solvent and impact resistant plastic. ½ gallon (1.8 liter) capacity.

DESCRIPTION	CAT. NO.	PRICE
BRANSONIC ULTRASONIC CLEANER		
110VAC	22326	
220VAC ¹	22336	
CLEANING SOLUTION		
900mL	22335	

¹ CE approved.

Immersion Cleaner

An aqueous and nontoxic surfactant solution that removes heavy deposits of silica from a detector. Recommended for dirty detectors not effectively cleaned by our in-place detector cleaner (Cat. No. 33000-U). Mix concentrate 1:10 with water.

DESCRIPTION	CAT. NO.	PRICE
Immersion Cleaner, 100mL	22662	

In-Place Detector Cleaner

A halocarbon liquid that cleans the detector in place. Just inject microliter quantities into an empty glass column while it is connected to a lighted flame detector. HF, produced by combustion of the cleaner, removes silica deposits from detector electrodes. Also useful for removing greases and oils from glassware, syringes, etc.

DESCRIPTION	CAT. NO.	PRICE
In-Place Detector Cleaner	33000-U	



Jet and Needle Cleaning Kit

Ten wires in each of five sizes (0.00350, 0.00497, 0.00659, 0.00815, and 0.01207" OD), plus a bottle of syringe cleaning solution. Perfect for cleaning small orifices such as FID jets and syringe needles.

Packaged in a reusable box that prevents wires from being damaged during storage.

DESCRIPTION	CAT. NO.	PRICE
Jet and Needle Cleaning Kit	21578	



Wire Brush Detector Cleaning Kit

A collection of wire brushes specially tailored to clean FIDs and injection ports that accept 1/4" columns. Brass brushes prevent scratching and marring of expensive FID components and save downtime by allowing the detector to be cleaned while hot.

Each kit includes two detector brushes, one injection port tube brush, a brass toothbrush (for cleaning jets and other odd surfaces), and a piece of fine emery cloth to clean electrical contacts.

Just measure your collector assembly ID and choose the closest kit. Instructions are included.

DESCRIPTION	CAT. NO.	PRICE
Collector Assembly ID		
0.145" (e.g., HP 5700, 5830)	22403	
0.235" (e.g., Varian 3700, 1400, 2700)	22404	

Order: 1.800.325.3010 Technical Service: 1.800.533.59.3041 Web: www.sigma-aldrich.com/supelco

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GC Accessories

Packed Column GC

PID Lamps

These lamps are manufactured by Scientific Services Co., internationally known as the pioneers of the PID lamp. Both lamps have an Mg window and are filled with krypton.

Model 103Qs the original PID lamp manufactured by Scientific Services Co. It is used for applications requiring the 10.0, 10.2, and 10.6eV lines. The 1.375" (3.49 cm) base diameter is compatible with HNU and SRI detectors.

Model 108-10.0/10.6 replaces Model 108-10.6. The designation denotes the 10.0-10.6eV potential of the lamp. Model 108-10.0/10.6 is the most commonly used PID lamp. The 0.781" (1.98 cm) base diameter is compatible with Tracor, OIC Model 4430, and Baseline photoionization detectors.

The lamp cleaning kit includes aluminum oxide cleaning compound, swabs, and instructions.



Merlin Microseal Septum and Nut for Agilent/HP GCs

Unique design features two sequential seals for longer life.

Patented long-life replacements for the standard septum and septum nut on the capillary inlet system or purged packed column inlet system of a Agilent/HP GC. The Microseal system incorporates two sequential seals to provide a much longer septum life.

- Sustains many injections without leaks or septum fragments
- For Agilent/HP Models 5700, 5800, 5900 series, 6890
- Ideal for Agilent/HP 7673 autosampler or other systems accepting a blunt-tipped 0.63mm OD (0.026"/23 gauge) needle

DESCRIPTION	CAT. NO.	PRICE
PID Lamp, Model 103C	22631	
PID Lamp, Model 108-10.0/10.6	22626	
PID Lamp Cleaning Kit	22627	

DESCRIPTION	CAT. NO.	PRICE
Nut	22582	
Septum ²	22583	
Nut and 1 Septum ²	22584	
Nut and 2 Septa ²	22581-U	



GC/MS Inlet Jet Separator

Allows accurate, reproducible control of jet sizes, alignment, and spacing. All-glass, single-stage construction eliminates the peak broadening or tailing effects encountered with other separators that use glass frits or membranes. Can be cycled to 450°C, depending on the type of connections used. Manufactured by SGE for use with HP 5985 GC/MS.

DESCRIPTION	CAT. NO.	PRICE
GC/MS Inlet Jet Separator	22600-U	

High Pressure Merlin Microseal Septum for HP and Varian GCs

Higher pressure rating: 100psi vs. 30psi

In addition to offering a system with a higher pressure rating, Merlin now offers a Microseal Septum in a configuration for Varian GCs.

DESCRIPTION	CAT. NO.	PRICE
FOR HP MODELS 5800, 5900 SERIES, 6890		
1 Nut and 2 Septa ²	24814-U	
1 Nut and 1 Septum ²	24815-U	
1 Septum ²	24816-U	
FOR VARIAN MODELS 3400, 3800 ³		
1 Nut for Varian Inlet, 1 Septum, 1 Inlet Adapter and O-Ring ²	24817-U	
1 Septum ²	24818-U	

¹ Merlin Instrument Co., US Pat. No. 4,954,149.

² The Microseal septum can be used only with a syringe that has a 23 gauge "blunt tipped" needle or with an SPME device with a 23 gauge needle.

³ The Microseal nut supplied by Merlin for the Varian GC is almost identical to the OEM Varian nut. However, the Merlin nut does not have the septum-cutting ridge incorporated in the Varian-manufactured nut. Use of the Varian-manufactured nut will damage the Merlin septum, and the manufacturer will not replace the septum.

GC Accessories

Packed Column / Capillary Conversion Kits

Have your packed column system ready for capillary analyses in half an hour or less. Reconvert for packed column use in minutes.

Use our Direct Injection Conversion Kit to connect a 0.53mm or 0.75mm ID capillary column to the injection port in your packed column GC (on-column injection system). You can use the capillary column with standard size syringes and septum systems. Dead volume is minimal.

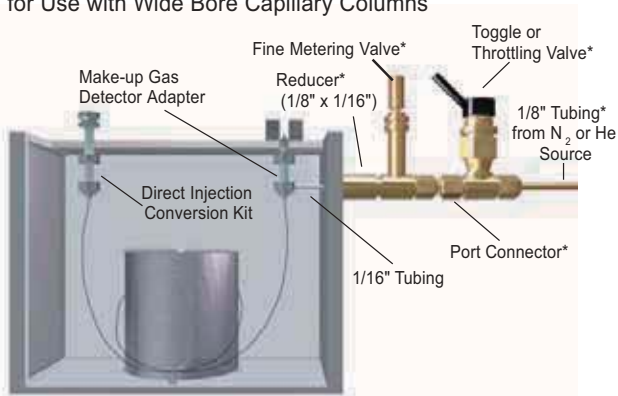
With our Make-up Gas Detector Adapter you can use the capillary column at optimum flow rates (2-10mL/minute), even if your detector is designed for higher flows. You can connect the column and a make-up gas line (to prevent column effluent from spreading in the detector) to the detector without modifying your detector gas line. Regulate the make-up gas through external control (see diagram) or, in a two-column instrument, connect the make-up gas line to the second injection port and regulate flow with the flow controller (requires a Swagelok reducer – Cat. No. 22017-U for a 1/8" fitting, Cat. No. 22701 for a 1/4" fitting – and nut; order separately).

How to Determine Which Conversion Kits Fit Your Instrument

Use these kits with an on-column injection system. Remove all fittings and liners, then insert a piece of tubing as far as possible into the injector. Add 1" (2.5cm) to this measurement to obtain the minimum sleeve length for the Injection Conversion Kit. Repeat at the detector port to obtain the minimum sleeve length for the Make-up Gas Detector Adapter Kit.

Each kit consists of a sleeve, a special union, ferrules for 0.53mm ID and 0.75mm ID columns, and complete instructions.

Packed Column Chromatograph Converted for Use with Wide Bore Capillary Columns



Direct Injection Conversion Kits

DESCRIPTION	CAT. NO.	PRICE
1/4" PORT		
Kit #1 (5"/13cm sleeve)	23799	
Replacement Parts		
5"/13cm Sleeve	23794	
7"/18cm Sleeve	23795	
Reducing Union	23633	
1/8" PORT		
Kit #2 (7"/18cm sleeve)	23643	
Replacement Parts		
5"/13cm Sleeve	23645	
10"/25cm Sleeve	23647	
5mm PORT		
Kit #4 (13cm sleeve)	23640-U	
Replacement Parts		
13cm Sleeve	23635	
13cm Sleeve with expansion chamber	20483	
Reducing Union	23633	

Make-up Gas Detector Adapter Kits

DESCRIPTION	CAT. NO.	PRICE
1/8" PORT		
Kit #1 (2"/5cm sleeve)	23654	
Kit #3 (6"/15cm sleeve)	23656	
Replacement Parts		
2"/5cm Sleeve	23657	
6"/15cm Sleeve	23659	
REPLACEMENT NUTS FOR ALL ADAPTER KITS		
Male Nut, 1/16" (pk. of 4)	23805	
Knurled Male Nuts, 1/16" (pk. of 2)	23812	

Swagelok Accessories for Make-up Gas System

DESCRIPTION	CAT. NO.	PRICE
Reducers, 1/8" to 1/16", brass (pk. of 2)	22017-U	
Reducers, 1/4" to 1/16", brass (pk. of 2)	22701	
Fine Metering Valve, 1/8" straight, brass	22116	
Port Connectors, 1/8" stainless steel (pk. of 2)	22689	
Toggle Valve, 1/8" straight, brass	22699	
On/Off Throttling Valve, 1/8"	22138-U	
Replacement Male Nuts, 1/16" (pk. of 4)	23805	
Knurled Male Nuts, 1/16" (pk. of 2)	23812	

Compact Adapter

Use as a 1/4" to 1/16" Swagelok reducer, or as a 1/4" to 1/16" capillary ID reducing ferrule. Also fits Varian capillary injection ports. Stainless steel body and 1/4" M-2A ferrule. Purchase appropriate capillary ferrules separately.



DESCRIPTION	CAT. NO.	PRICE
Compact Adapter	22063	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

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