# GC Accessories Solutions Guide





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### Inlet Base Seals

### Easy Seals<sup>™</sup> for Agilent<sup>®</sup> GCs

- · Soft surface eliminates need for washer
- Minimal torque required to form tight seal
- · Increase column lifetime with tight seal

Phenomenex's Easy Seals make a tight seal without the need to apply high torque. These seals eliminate the need to use a washer and reduce breakdown and adsorption of active compounds, such as acids, bases, and pesticides.



### **Gold Inlet Base Seals for Agilent GCs**

- . Traps non-volatile residues, septum fragments, and other contaminants
- Exceptional inertness

	Ord	ering	Info	rmat	ion
--	-----	-------	------	------	-----

Gold Inlet Ba	ise Seals			
Part No.	Description	Similar to Mfr. No.*	Unit	Price
Standard, si	ngle groove for splitless applications, 0.8 mm dia. inlet hole			
AG0-7518	Gold Inlet Base Seal, splitless (single groove), 0.8 mm	18740-20885	2/pk	
AG0-7519	Gold Inlet Base Seal, splitless (single groove), 0.8 mm	18740-20885	10/pk	
High Split Fl	ow, cross groove for split applications, 0.8 mm dia. inlet hole			
AG0-7520	Gold Inlet Base Seal, split (double groove/cross), 0.8 mm	5182-9652	2/pk	
AG0-7521	Gold Inlet Base Seal, split (double groove/cross), 0.8 mm	5182-9652	10/pk	
Standard, si	ngle groove for splitless applications, 1.2 mm dia. inlet hole			
AG0-8581	Gold Inlet Base Seal, splitless (single groove), 1.2 mm	21305	2/pk	
AG0-8582	Gold Inlet Base Seal, splitless (single groove), 1.2 mm	21306	10/pk	
High Split Fl	ow, cross groove for split applications, 1.2 mm dia. inlet hole			
AG0-8583	Gold Inlet Base Seal, split (double groove/cross), 1.2 mm	21009	2/pk	
AG0-8584	Gold Inlet Base Seal, split (double groove/cross), 1.2 mm	21010	10/pk	
Replacemen	t Inlet Seal Washers			
AG0-8397	Inlet Seal Washers Gold Plated, for Agilent GC injection port	-	12/pk	









Due to different replacement frequencies, inlet seal washers are sold separately from inlet base seals.

### **Stainless Steel Inlet Base Seals for Agilent GCs**

- Lower cost alternative
- · Ideal for hydrocarbon analysis

### **Ordering Information**

Oracinig	mormation			
Stainless St	teel Inlet Base Seals			
Part No.	Description	Similar to Mfr. No.*	Unit	Price
Standard, s	ingle groove for splitless applications, 0.8 mm dia. inlet hole			
AG0-8393	Stainless Steel Inlet Base Seal, splitless (single groove), 0.8 mm	18740-20880	2/pk	
AG0-8394	Stainless Steel Inlet Base Seal, splitless (single groove), 0.8 mm	18740-20880	10/pk	
High Split F	low, cross groove for split applications, 0.8 mm dia. inlet hole			
AG0-8395	Stainless Steel Inlet Base Seal, split (double groove/cross), 0.8 mm	_	2/pk	
AG0-8396	Stainless Steel Inlet Base Seal, split (double groove/cross), 0.8 mm	_	10/pk	
Replacemen	nt Inlet Seal Washers			
AG0-7522	Inlet Seal Washers, Stainless Steel, for Agilent GC injection port	5061-5869	12/pk	







\*Similar to but not always an exact equivalent to the original manufacturer's product.

### Installation Nuts

### Cool-Lock™ Nut U.S. Patent No. 8, 062, 516

### Fast GC Column Installation without the Burn

- · Avoid burning your fingers again cools with the oven
- · Increased reproducibility-locks insertion depth before installation
- · No need for wrench with hand-tightened connections
- No more Wite-Out®, Tipp-Ex®, or septa pieces!



Part No. AGO-8319

### **Parts for Agilent GC Systems**

### How to Select a Cool-Lock Nut for your Agilent GC System



### Decide on The Style of Cool-Lock Nut Needed

Short Style (AGO-8319)	Long Style (AG0-8320)
Recommended for use with standard short style ferrules.	Recommend for use with standard long style ferrules.
Also, use for both the inlet and detector con-	

figurations on Agilent 6890, 5890, and 7890 GC systems (Short ferrules provide a robust seal and typically remain tight over time).



#### **Ordering Information**

Cool-Lock G	Cool-Lock GC Capillary Nut For Agilent GC Systems*						
Part No.	Description	Unit	Price				
AG0-8319	Cool-Lock GC Capillary Nut For Use With Short-Style Ferrules	ea					
AG0-8320	Cool-Lock GC Capillary Nut For Use With Long-Style Ferrules	ea					

<sup>\*</sup> Guaranteed fit for Aglilent 5850, 5890, 6850, 6890, 7890 GC systems



Cool-Lock N	ut Installation Gauge for Agilent GC System		
Part No.	Description	Unit	Price
AG0-8349	Cool-Lock Nut Installation Gauge	ea	



### Parts for Shimadzu GC Systems





Cool-Lock G	C Capillary Nut For Shimadzu GC Systems**		
Part No.	Description	Unit	Price
AG0-8419	Cool-Lock GC Capillary Nut For Use With Shimadzu GC Systems	ea	



Cool-Lock Nut Installation Gauge For Shimadzu GC Systems					
Part No.	Description	Unit	Price		
AG0-8420	Cool-Lock Nut Installation Gauge	ea			

<sup>\*\*</sup> Guaranteed fit for Shimadzu 2010 and 2014 GC systems



Caution: For safety, please use common sense when handling metal surfaces within the GC oven, including the Cool-Lock Nut. The Cool-Lock Nut is designed to track the GC oven temperature as close as possible, therefore, when you cool down your GC oven, the Cool-Lock Nut will follow suit because it is related to oven temperature with the fan on. So if the oven is hot enough to cause severe burns, the Cool-Lock Nut will also be hot enough to cause severe burns, the Cool-Lock Nut will also be not enough to cause severe burns, the Cool-Lock Nut will also be too hot to touch with the bare hand. For any questions regarding use of the Cool-Lock Nut, please contact your local Phenomenex representative.



Contact Phenomenex or your local Phenomenex distributor for additional GC products and applications.

### Installation Nuts

### **Standard Nut**

- For capillary column connections to both Agilent injectors and GC detectors (not MS)
- . Interchangeable with original Agilent nuts
- . Standard length nut uses short Agilent ferrules (1.65 mm)
- Extended length (deep well) nut uses standard ferrules (2.4 mm)



### **Ordering Information**

<b>GC Fittings</b>				
Part No.	Description	Similar to Mfr. No.*	Unit	Price
AG0-5152	Agilent GC Standard Capillary Nut, 1/16 in. hex stainless steel, uses short Agilent ferrules (1.65 mm length)	5181-8830	2/pk	
AG0-5153	Agilent GC Deep Well Capillary Nut, 1/16 in. hex stainless steel, uses standard Agilent ferrules (2.4 mm length)	5020-8292	2/pk	

<sup>\*</sup> Similiar to but not always an exact equivalent to the original manufacturer's product



For quick and accurate GC installation without burning your fingers, use the Cool-Lock™ Nut, see p.4

### Capillary Column Mini-Unions

### **Capillary Column Mini-Unions**

- . High-precision unions for capillary GC columns
- · Connect capillary columns of same or dissimilar sizes
- · Inert and precise glass-lined bore
- Low dead volume

### **Selection Guide**

- Connecting similar sized columns or tubing:
   Select the union with inside diameter large enough to accommodate the tubing in question.
- Connecting dissimilar sized columns or tubing:
   Select the union with inside diameter large enough to accommodate the smaller of the two sizes.

### Graphite/Vespel® Ferrule Mini-Unions

- 15 % Graphite / 85 % Vespel ferrules, Rated to 350  $^{\circ}\mathrm{C}$
- · Comes with 1 mini-union, 2 nuts, and 5 ferrules

### SilTite<sup>™</sup> Mini-Unions

- Supplied with SilTite ferrules no more leaks and no need to re-tighten after installation
- Recommended for high temperature analysis. Stable above 450 °C.
- · Comes with 1 mini-union, 2 nuts, and 5 ferrules



### **Applications**

- · Connecting a guard column to an analytical column
- · Connecting columns of different selectivities
- · Connecting transfer lines to, e.g., mass spec
- · Repairing a broken column
- May be used to connect polyimide-coated and metal capillaries, unlike glass unions

#### **Ordering Information**

0.28-0.35

0.45-0.53

Graphite/Ve	espel Ferrule	: Mini-Unio	ns			
Column 1 ID (mm)	Column 2 ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Unit	Price
0.10-0.25	0.10-0.53	0.4	103431	AG0-5160	ea	
0.28-0.35	0.32-0.53	0.5	103432	AG0-5161	ea	
0.45-0.53	0.45-0.53	0.8	103433	AG0-5162	ea	
Replaceme	nt Ferrules					
Column ID	(mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Unit	Price
0.10-0.25		0.4	072696	AG0-7033	10/pk	
0.28-0.35		0.5	072697	AG0-7034	10/pk	
0.45-0.53		0.8	072698	AG0-7035	10/pk	
SilTite Mini	-Unions					
Column 1 ID (mm)	Column 2 ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Unit	Price
0.10-0.25	0.10-0.53	0.4	073550	AG0-8763	ea	
0.28-0.35	0.32-0.53	0.5	073551	AG0-8764	ea	
0.45-0.53	0.45-0.53	0.8	073554	AG0-8825	ea	
Replacement Ferrules						
Column ID	(mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Unit	Price
0.10-0.25		0.4	073470	AG0-8759	10/pk	

<sup>\*</sup> Similiar to but not always an exact equivalent to the original manufacturer's product.

073471

073473

0.5

0.8

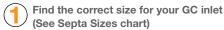
AG0-8760 10/pk

AG0-8824 10/pk

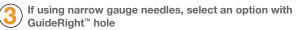
### Silicone Rubber Inlet Septa

- Advanced silicone formulations reduce coring and increase septum lifetime
- Enhanced durability and re-sealing capabilities

### How to choose the correct Septa









### **Septa Sizes by GC Instrument**

Instrument Model	Septa Diameter
5850, 5880, 5890, 6850, 6890, 7890	7/ <sub>16</sub> in. (11 mm)
5700 series, 5880A	3/8 in. (9.5 mm)
All	3/8 in. (9.5 mm)
9600	3/8 in. (9.5 mm)
9000, 9500	1/2 in. (12.7 mm)
8000 Series	<sup>21</sup> / <sub>32</sub> in. (17 mm)
All	3/8 in. (9.5 mm)
Portable GC	3/8 in. (9.5 mm)
Sigma series, 900, 9900, 8000, Autosampler	7/16 in. (11 mm)
All	plug
220, 222 540 550, 560	½ in. (12.7 mm) ½4 in. (11.5 mm) ¾ in. (9.5 mm)
Packed column injectors SPI 3700 / Vista capillary injectors Saturn GC/MS	3/8 in. (9.5 mm) 7/16 in. (11 mm) 7/16 in. (11 mm) or 11/24 in. (11.5 mm)
	5850, 5880, 5890, 6850, 6890, 7890 5700 series, 5880A All  9600 9000, 9500 8000 Series All Portable GC Sigma series, 900, 9900, 8000, Autosampler All 220, 222 540 550, 560 Packed column injectors SPI 3700 / Vista capillary injectors

Туре	Temperature Stability	Durability	Available with GuideRight™ hole
PhenoGrey <sup>™</sup> -250	250 °C	Best	
PhenoBlue <sup>™</sup> -300	350 °C	Better	
PhenoRed™-400	400 °C	Good	<b>~</b>
PhenoGreen™-400	400 °C	Good	<b>✓</b>

### **Ordering Information**

GuideRight I	njection Hole Septa		
Part No.	Description	Unit	Price
PhenoGreen	3/8 in. (9.5 mm) Diameter 400 °C		
AG0-7874	PhenoGreen™ 400 Injector Septa	50/pk	
PhenoRed 3/	s in. (9.5 mm) Diameter 400 °C		
AG0-7916	PhenoRed <sup>™</sup> 400 Injector Septa	50/pk	
PhenoGreen	<sup>7</sup> / <sub>16</sub> in. (11 mm) Diameter 400 °C		
AG0-7875	PhenoGreen™ 400 Injector Septa	50/pk	
PhenoRed 7/	716 in. (11 mm) Diameter 400 °C		
AG0-7917	PhenoRed <sup>™</sup> 400 Injector Septa	50/pk	

### **Ordering Information**

Silicone Rubber S	Septa Septa		
Part No.	Description	Unit	Price
PhenoGrey ¾ in.	(9.5 mm) Diameter		
AG0-4686	PhenoGrey-250 Injector Septa	50/pk	
AG0-4687	PhenoGrey-250 Injector Septa	100/pk	
PhenoBlue % in.	(9.5 mm) Diameter		
AG0-4688	PhenoBlue-300 Injector Septa	50/pk	
AG0-4689	PhenoBlue-300 Injector Septa	100/pk	
PhenoRed ¾ in. (	9.5 mm) Diameter		
AG0-4690	PhenoRed-400 Injector Septa	50/pk	
AG0-4691	PhenoRed-400 Injector Septa	100/pk	
PhenoGreen ¾ in	. (9.5 mm) Diameter		
AG0-8572	PhenoGreen-400 Injector Septa	50/pk	

Part No.	Description	Unit	Price
PhenoGrey 7/16	in. (11 mm) Diameter		
AG0-4692	PhenoGrey-250 Injector Septa	50/pk	
AG0-4693	PhenoGrey-250 Injector Septa	100/pk	
PhenoBlue 7/16	in. (11 mm) Diameter		
AG0-4694	PhenoBlue-300 Injector Septa	50/pk	
AG0-4695	PhenoBlue-300 Injector Septa	100/pk	
PhenoRed 7/16 i	n. (11 mm) Diameter		
AG0-4696	PhenoRed-400 Injector Septa	50/pk	
AG0-4697	PhenoRed-400 Injector Septa	100/pk	
PhenoGreen 7/1	s in. (11 mm) Diameter		
AG0-8573	PhenoGreen-400 Injector Septa	50/pk	

### **Injector Septa Plugs**

• High temperature silicone



### **Ordering Information**

Shimadzu Inj	ector Septa Plug		
Part No.	Description	Unit	Price
AG0-7517	Septa Plug for Shimadzu Injectors (9A, 14, 15A, 16, 17A, 2010) Rated to 350 °C	50/pk	
AG0-8802	Septa BTO® Plugs, Rated to 400 °C	50/pk	

### Septa

### Merlin Microseal™ Septum

- · Improves chromatographic performance and quantitative results by reducing bleed and ghost peaks
- · Improves reliability and performance during extended automated runs
- · Thousands of injections before seal replacement
- Save time changing septa, instrument downtime and troubleshooting

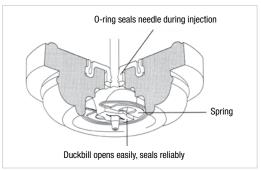
The Merlin Microseal Septum is a long-life replacement for the standard septum on the capillary inlet or the purged-packed inlet of Agilent GC systems.

The Microseal is a patented inlet assembly that provides two distinct sealing mechanisms. The first is a double O-ring seal around the syringe that ensures gas leak integrity during time of injection. There is no traditional septum to core or flake, which can cause bleeding and ghost peaks, and less force is required for the user to make a manual injection. The second seal is a spring-assisted duckbill that reliably maintains a high-pressure seal within the injection port at all times.

Since the syringe does not pierce any septum material, seal lifetime is significantly extended - Microseals are typically used for up to one year or more under normal conditions before septum replacement. Many laboratories experience lifetimes of 5,000 to 10,000 injections or more. This means you save tremendously in time changing septa, instrument downtime and troubleshooting. Chromatographic performance will also improve due to less bleed and fewer ghost peaks, improving quantitation and data reliability.

Instrument Compatibility: The Merlin Microseal systems can be used manually with all Agilent 5800, 6800, and 7890 series GCs. However, for autosampler use it is compatible with only the 7673A and 7673B units. Other inlets or autosampler systems from Agilent or other manufacturers are not compatible.







(1) Complete High Pressure Kits include the nut and one or two Microseal septa. All High Pressure Kits are rated for inlet pressures up to 100 psi. For long-term operation (>6 months) with the Microseal septum use the following injection port limits: (a) Agilent 6890, 5890 Series II - 325 °C; (b) Agilent 5890A - 300 °C. Higher temperatures will result in shorter lifetimes. (2) The Merlin Microseal Septum should only be used with a blunt-tipped, 0.63 mm diameter (0.025 in., 23 gauge) syringe needle (typically used with the Agilent 7673 autosampler). Sharp-pointed or sharp-edged needles should not be used as they may slice or pierce the seals.

#### **Ordering Information**

Merlin Microseal Septum								
Part No.	Description	Unit	Price					
AG0-5985	Merlin Microseal High Pressure Septum Standard Kit, includes nut and 2 septa	ea						
AG0-5986	Merlin Microseal High Pressure Septum Starter Kit, includes nut and 1 septum	ea						
Replacemen	t Parts							
AG0-5987	Merlin Microseal High Pressure Septum	ea						
AG0-5988	Merlin Microseal High Pressure Nut	ea						

### Syringes for Use With the Merlin Microseal

Oraering II	ntormation							
Part No.	Mfr. No.	Agilent P/N	Description*	Capacity (µL)	Unit	Price		
For Agilent 7673 Autosamplers								
AS0-4386	87987	9301-0892	75ASN (23s/1.71in./HP)	5	ea			
AS0-4387	80387	9301-0713	701ASN (23s/1.71in./HP)	10	ea			
AS0-4388	80390	9301-0725	701ASN (23s/1.71in./HP)	10	6/pk			
Removable Needles								
AS0-4401	7786-01	9301-0892	RN (23s/1.71in./HP)	2.5-100 μL	6/pk			

NOTE: Replacement needles are available in packs of three. Values in parentheses denote the following: (qauge/length/point style). "s" after gauge denotes smaller/reduced internal needle diameter.



Contact Phenomenex or your local Phenomenex distributor for additional GC products and applications.

HILL TON CO. MENS MEADS.

### **Ferrules**

### **Ferrule Selection Guide by Material**

Material	Advantage	Disadvantage	Recommended for
100 % Graphite	<ul><li>Easy to use</li><li>Tight, stable seal</li><li>Rated to 450 °C</li></ul>	<ul> <li>Porous to oxygen</li> <li>Not for MS or other oxygen sensitive detectors</li> <li>Easily deformed</li> <li>Potential to contaminate system</li> </ul>	<ul> <li>General use</li> <li>FID and ND</li> <li>High temperature analysis</li> <li>Cool on-column</li> </ul>
85/15 % Vespel®/Graphite	<ul> <li>Durable for long lifetime</li> <li>Not porous to oxygen</li> <li>Rated to 350 °C</li> </ul>	Non-reusable Need to re-tighten frequently Flows at high temperatures	Good for MS or other oxygen sensitive detectors     Most leak free
60/40 % Vespel/Graphite	<ul> <li>Easier to use than 85/15</li> <li>Not porous to oxygen</li> <li>Rated to 400 °C</li> </ul>	<ul><li>Non-reusable</li><li>Easier to deform than 85/15</li></ul>	Good for MS or other oxygen sensitive detectors     Best balance between tight seal and ease of use
SilTite <sup>™</sup>	<ul> <li>No need to re-tighten</li> <li>Reliable seal</li> <li>No contamination</li> <li>Rated to &gt; 450 °C</li> </ul>	Easily deforms	High temperature MS analysis

### **Ferrule Selection Guide by Length**

Length	Advantage	Disadvantage	Recommended for
Short	Robust seal	Not recommended for MS detector connection	Standard detectors and inlet
Long	Good nut and interface design	Not recommended for inlet connection	MS detector connection

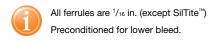
### **Ferrule Selection Guide for Cool-Lock Nuts**

			Agilent Systems				zu Systems
		Long S	Long Style Nut		Style Nut		
Column ID (mm)	Ferrule ID (mm)	Top Ferrule	<b>Bottom Ferrule</b>	Top Ferrule	Bottom Ferrule	Top Ferrule	Bottom Ferrule
0.10-0.25	0.4	AG0-4698	AG0-4698	AG0-7513	AG0-4698	AG0-8881	AG0-4698
0.25-0.35	0.5	AG0-4701	AG0-4701	AG0-7513	AG0-4701	AG0-8881	AG0-4701
0.45-0.53	8.0	AG0-4704	AG0-4704	AG0-8676	AG0-4704	AG0-8882	AG0-4704

### **Ordering Information**

Short Ferrules							
Composition	GC Column ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Preconditioned	Unit	Price
	0.10-0.35	0.5	072635	AG0-7513	V	10/pk	
100 %	0.10-0.33	0.5	5080-8853	Ad0-7515	ı .	10/μκ	
Graphite	0.45-0.53	0.8	072636	AG0-8676	V	10/pk	
	0.40-0.55	0.0	500-2118	Ad0-0070	<u>'</u>	10/μκ	
	0.10-0.25	0.10-0.25 0.4	5181-3323	AG0-7318	N	10/pk	
			5181-3322	AG0-7321	Υ	10/pk	
85 % Vespel /	0.28-0.35	0.5	5062-3514	AG0-7319	N	10/pk	
15 % Graphite	0.20-0.33	0.5	5062-3513	AG0-7322	Υ	10/pk	
	0.40-0.53	0.8	5062-3512	AG0-7320	N	10/pk	
	0.40-0.33	0.0	5062-3511	AG0-7323	Υ	10/pk	

 $<sup>^{\</sup>ast}$  Similiar to but not always an exact equivalent to the original manufacturer's product.





All Vespel containing ferrules should be pre-shrunk in an oven at 250  $^{\circ}\text{C}$  for at least 4 hours prior to use.

### **Ferrules**



### **Ordering Information**

Long Ferrules							
Composition	GC Column ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Preconditioned	Unit	Price
	0.10-0.25	0.4	20200	AG0-4698	N	10/pk	
	0.10-0.25	0.4	20227	AG0-4699	Ņ	50/pk	
100 % Crowbito	0.28-0.35	0.5	72635	AG0-4701	N	10/pk	
100 % Graphite	0.26-0.35	0.5	_	AG0-4702	Ņ	50/pk	
	0.45.0.50	0.0	82636	AG0-4704	M	10/pk	
	0.45-0.53	0.8	_	AG0-4705	N	50/pk	
	0.40.005	0.4	07663	100 0077	Υ	10/-1-	,
	0.10-0.25	0.4	5062-3508	AG0-8677	Ĭ	10/pk	
85 % Vespel®/	0.00.005	0.35 0.5	072654	400,0070	Υ	10/-1-	
15 % Graphite	0.28-0.35		5062-3506	AG0-8678	Ţ	10/pk	
	0.45.0.50	0.45-0.53 0.8	072655	100,0070	Υ	10/-1-	
	0.45-0.53		5062-3538	AG0-8679		10/pk	
	0.10.005	0.4	20211	AG0-4707	Υ	10/pk	
	0.10-0.25	0.4	20229	AG0-4708	Y	50/pk	
60 % Vespel / 40 % Graphite	0.00.005	0.5	20212	AG0-4710		10/pk	
	0.28-0.35	0.5	20231	AG0-4711	Υ	50/pk	
	0.45.0.50	0.0	20213	AG0-4713		10/pk	
	0.45-0.53	0.8	20230	AG0-4714	Υ	50/pk	

 $<sup>^{\</sup>star}$  Similiar to but not always an exact equivalent to the original manufacturer's product.



Ordering Information							
Two Hole Ferrules							
Composition	GC Column ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Preconditioned	Unit	Price
	0.40.005	0.4	072662	100 0000		40/-1	
	0.10-0.25	0.4	5062-3580	AG0-8680	Y	10/pk	
85 % Vespel /	0.00.0.05	0.5	212222	100,0004		40/-1	
15 % Graphite	0.28-0.35	0.5	5062-3581	AG0-8681	N	10/pk	
	0.45-0.53	0.8	072674	AG0-8682	Υ	10/pk	

### **Ordering Information**

SilTite Ferrules							
Composition	GC Column ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Preconditioned	Unit	Price
	0.10-0.25	0.4	073220	AG0-8762	Υ	10/pk	
SilTite™	0.28-0.35	0.5	073221	AG0-8757	Υ	10/pk	
	0.45-0.53	0.8	073222	AG0-8758	Υ	10/pk	

Note: SilTite® ferrules are to be used with SilTite® nuts. Please contact your Phenomenex technical consultant or distributor for the appropriate nut and ferrule part numbers for your GC system.



Ordering inform	Ordering information								
100 % Graphite Fe	100 % Graphite Ferrules (Metal Encapsulated) for Shimadzu GCs								
Composition	GC Column ID (mm)	Ferrule ID (mm)	Similar to Mfr. No.*	Part No.	Preconditioned	Unit	Price		
	0.10-0.25	0.4	221-32126-05	AG0-8881	Υ	10/pk			
100 % Graphite (Metal Encapsulated)	0.25-0.35	0.5	221-32126-05	AG0-8881	Υ	10/pk			
(ou. zoupoulutou)	0.45-0.53	0.8	221-32126-08	AG0-8882	Υ	10/pk			



For Replacement Ferrules for Mini-unions, see p. 5



All ferrules are ¹/₁6 in. (except SilTite™) Preconditioned for lower bleed.



All Vespel containing ferrules should be pre-shrunk in an oven at 250 °C for at least 4 hours prior to use.

## Injection Port Inlet Liners

### Liners for Agilent Technologies® (HP) GC Systems

iners			D'				Agilent To	echnolog	gies (
			Dimensions ID x L x OD						
escription escription	Benefits / Uses	GC Model No.	(mm)	Units	Similar to Mfr	. No.**	Part No.	Unit	Pric
plit / Splitless Liner with wool	Large injection, trace	5880/5890/	4 x 78.5 x 6.3	ea	19251-60540	-	_	E /1-	
	analysis	6890/7890		5/pk 25/pk	5183-4691 5183-4692	20782 20783	AG0-4655 AG0-4656	5/pk 25/pk	
plitless Single Taper Liner with wool	Large injection, trace	5880/5890/	4 x 78.5 x 6.45	ea	5062-3587	22405	_		
	analysis	6890/7890		5/pk	5183-4693 5183-4694	22406 22407	AG0-4657	5/pk	
tup Splitter / Split Liner*	High and low MW	5880/5890/	4 x 78.5 x 6.3	25/pk ea	HP 18740-80190	20709	AG0-4658	25/pk	
	compounds and large	6890/7890	. x . o.o x o.o	5/pk	5183-4699	20710	AG0-4647	5/pk	
	volume injections	F000/F000/	4 70 5 0 0	25/pk	5183-4700		AG0-4648	25/pk	
tup Splitter / Split Liner with wool*	Large volume injection of dirty samples	5880/5890/ 6890/7890	4 x 78.5 x 6.3	ea 5/pk	18740-60840 5183-4697		AG0-7853	5/pk	
				25/pk	5183-4698 2048205			•	
plitless Liner Straight Liner	Small injection, trace	5880/5890/	2 x 78.5 x 6.45	Supelco not deactivated	HP 18740-80220				
pilitess Liner Straight Liner	analysis	6890/7890	2 X 76.5 X 0.45	ea	5181-8818	20712	_		
				5/pk	5183-4703 5183-4704	20713	AG0-4649	5/pk	
plitless Straight Liner*	Large injection, trace	5880/5890/	4 x 78.5 x 6.3	25/pk ea	210-3003	20714	AG0-4650	25/pk	
	analysis	6890/7890		5/pk	210-3003-5	20773	AG0-4651	5/pk	
ralit / Caliblaca Cingle Tanga Linea	Laura intagitar tora	E000/E000/	4 70 F 0 45	25/pk	E404 0040	20774	AG0-4652	25/pk	
plit / Splitless, Single Taper Liner	Large injection, trace analysis	5880/5890/ 6890/7890	4 x 78.5 x 6.45	ea 5/pk	5181-3316 5183-4695	20798 20799	AG0-7516	5/pk	
				25/pk	5183-4696	20800	AG0-7640	25/pk	
plit / Splitless, Single Taper Liner*	Small injection, trace	5880/5890/	2 x 78.5 x 6.45	ea	-	20795	_ 	F/1-	
	analysis	6890/7890		5/pk 25/pk	_	20796 20797	AG0-4653 AG0-4654	5/pk 25/pk	
irect Liner	Injection < 1 μL	5880/5890/	1.5 x 78.5 x 6.45	ea	18740-80200	20972	-		
	or Purge & Trap/ Headspace	6890/7890		5/pk	5183-4709 5183-4710	20973	AG0-4659	5/pk	
plit / Splitless, Recessed Gooseneck Liner with wool		5880/5890/	4 x 78.5 x 6.45	25/pk ea	19251-60540		AG0-4660	25/pk	
pit / Opiticos, riceessed dodserieck Einer With Woo	samples	6890/7890	4 X 70.5 X 0.45	ea	5183-4647	22408	_		
-				5/pk 25/pk	5183-4691	22409	AG0-4661	5/pk	
ingle Taper Direct Connect with Side Hole (top)	Great recovery and	5880/5890/	4 x 78.5 x 6.3	ea ea	5183-4692 G1544	22410 21054	AG0-4662	25/pk	
o	linearity for trace	6890/7890	4 x 70.5 x 0.5	5/pk	U1344	21055	AG0-7850	5/pk	
	analysis of active compounds			25/pk		20998	-		
ingle Taper Direct Connect with Side Hole (bottom)	Great recovery and	5880/5890/	4 x 78.5 x 6.3	ea		20756	_		
•	linearity for trace analysis of active	6890/7890		5/pk	G1544-80730	20771	AG0-7851	5/pk	
	compounds								
plit Liner with wool	General use or dirty	5880/5890/	4 x 78.5 x 6.3	ea	5183-4647	21032			
	samples	6890/7890		5/pk 25/pk	5183-4701 5183-4702	21033	AG0-8172 —	5/pk	
plit / Splitless, Double Taper/Gooseneck Liner	Large injection, trace	5880/5890/	4 x 78.5 x 6.3	ea	5181-3315	20784			
	analysis of active	6890/7890	2.0 % 0.0	5/pk	5183-4705	20785	AG0-8173	5/pk	
nlit / Splitlage Focus Liner with week	compounds Trace analysis of dirty	5880/5890/	4 x 78.5 x 6.3	25/pk	5183-4706 210-4004	20786 21022			
plit / Splitless Focus Liner with wool	Trace analysis of dirty samples	6890/7890	+ x / 0.0 X 0.3	ea 5/pk	Z1U-4UU4	21022	AG0-7515	5/pk	
				25/pk		20979	AG0-7582	25/pk	
plit / Splitless, Focus Liner Single Taper vith wool	General use or dirty samples	5880/5890/ 6890/7890	4 x 78.5 x 6.3	ea 5/pk	5183-4711 5183-4712	20994 20995	- AG0-4680	5/pk	
	p-00	0000/1000		25/pk	5183-4713	20996	AG0-7514	25/pk	
plit / Splitless, Focus Liner Single Taper with wool	General use or dirty	5880/5890/	4 x 78.5 x 6.3	5/pk	092003	22406	AG0-8175	5/pk	
	samples	6890/7890							
louble Gooseneck with Bottom Hole	Great recovery and	5880/5890/	4 x 78.5 x 6.3	ea	G1544-80700	20989	_		
	linearity for trace analysis of active	6890/7890		5/pk		20954	AG0-8430	5/pk	
_	compounds								
plitless, Single Taper Liner with wool	Large injection, trace	5880/5890/	4 x 78.5 x 6.45	5/pk	5183-4693		AG0-8499	5/pk	
	analysis	6890/7890							
	Large injection, trace	5880/5890/	4 x 78.5 x 6.3	5/pk	5183-4691		AG0-8653	5/pk	
plit / Splitless Liner with wool					5183-4692				
plit / Splitless Liner with wool	analysis	6890/7890		25/pk	3103-4092		AG0-8654	25/pk	
		6890/7890 5880/5890/	2.3 x 78.5 x 6.3	25/pk  5/pk	210-4022		AG0-8379	25/pk 5/pk	

Note: Large injection ≥ 2 µL. Small injection ≤ 2 µL \*Liner is not deactivated \*\* Similar to but not always an exact equivalent to the original manufacturer's product.

### Injection Port Inlet Liners

### Liners for PerkinElmer® GC Systems

Liners								Pe	erkinElme
Description	Benefits / Uses	GC Model No.	Dimensions ID x L x OD (mm)	Units	Similar to N	lfr. No.**	Part No.	Unit	Price
Split / Splitless Single Taper / Gooseneck Tapered FocusLiner™ with wool	General use or dirty samples	AutoSystem <sup>™</sup> & Clarus <sup>®</sup> 500	4 x 92 x 6.2	-	092095 09209525	-	AG0-4681 AG0-7864	5/pk 25/pk	
Split / Splitless Tapered FocusLiner™ with wool	Dirty samples, trace samples	AutoSystem & Clarus 500	4 x 92 x 6.2	-	092092 09209225	-	AG0-7639 AG0-7865	5/pk 25/pk	
Cup Splitter / Split Liner*	Low activity, great for large volume injections	8000/Sigma	3.5 x 100 x 5	5/pk	0330-5181	20740	AG0-4663	5/pk	
Split / Splitless Liner*	General use and trace samples	AutoSystem	4 x 92 x 6.2	5/pk	N610-1052	20836- 214.5	AG0-4665	5/pk	
3 mm ID Split / Splitless	Large injection, trace analysis	8000/Sigma	3 x 100 x 5	5/pk	092091	-	AG0-8655	5/pk	
Split / Splitless Single Taper FocusLiner	Large injection, trace analysis	AutoSystem & Clarus 500	4 x 92 x 6.2	5/pk	092095	-	AG0-8656	5/pk	
Split / Splitless FocusLiner with wool	General use or dirty samples	AutoSystem & Clarus 500 (PSS Injector)	2 x 86.2 x 4	5/pk	092101	-	AG0-8657	5/pk	
Large Volume Injection (LVI) liner for AutoSystem XL (PSS injector), sintered glass	Large injection, trace analysis	AutoSystem & Clarus 500 (PSS Injector)	2 x 86.2 x 4	5/pk	092244	-	AG0-8658	5/pk	
Split, Straight Liner	Large injection, trace analysis	AutoSystem / Clarus 500	4 x 92 x 6.2	5/pk	092100	-	AG0-8659	5/pk	
Split, Straight Liner	Small injection, trace analysis	AutoSystem / Clarus 500	2 x 92 x 6.2	5/pk	092103	_	AG0-8660	5/pk	

Note: Large injection  $\geq 2~\mu$ L. Small injection  $\leq 2~\mu$ L. "Liner is not deactivated. "Similar to but not always an exact equivalent to the original manufacturer's product.

### Liners for Shimadzu® GC Systems

	Ordering Information								
	Liners								Shimadzu
	Description	Benefits / Uses	GC Model No.	Dimensions ID x L x OD (mm)	Units	Similar to Mfr. No.**	Part No.	Unit	Price
	Split/Splitless Single Taper / Gooseneck Tapered FocusLiner" with wool	Great recovery and linearity for trace analysis of active compounds	17A, 17B, 2010, 2014	3.4 x 95 x 5	-	092068	AG0-4683	5/pk	
   	Splitless Straight Liner	Small injection, trace analysis	17A, 17B, 2010, 2014	2.6 x 95 x 5	-	-	AG0-4667	5/pk	
This End	Splitless Liner	Trace analysis	9A/15A/16A	3.4 x 139 x 5	5/pk 25/pk	20749 20750	AG0-4669 –	5/pk	
Installs	Split / Splitless, Single Focus Taper Liner	General use or dirty samples	14/15A/16	3.4 x 99 x 5	5/pk	092066	AG0-4682	5/pk	
Column Installs	Split / Splitless, Liner with Middle Gooseneck	General use or dirty samples	17A/2014	3.4 x 95 x 5	5/pk	092085	AG0-8661	5/pk	
) 	Split / Splitless, FocusLiner with wool	Large injection, trace analysis	17A/2014	3.4 x 95 x 5	5/pk	092062	AG0-8662	5/pk	
	Split / Splitless, Recessed Gooseneck Liner with quartz wool	General use or dirty samples	17A/2014	3.4 x 95 x 5	5/pk	092061	AG0-8663	5/pk	
	Split / Splitless, Single Taper FocusLiner	General use or dirty samples	2010	3.4 x 95 x 5	5/pk	092058	AG0-8664	5/pk	

Note: Large injection ≥ 2 µL. Small injection ≤ 2 µL \*\* Similar to but not always an exact equivalent to the original manufacturer's product.



### Injection Port Inlet Liners

### Liners for Thermo Scientific® GC Systems

erina		

	Ordering Information									
	Liners							Thermo	Scientifi	c System
	Description	Benefits / Uses	GC Model No.	Dimensions ID x L x OD (mm)	Units	Similar to M	fr. No.**	Part No.	Unit	Price
_	Split / Splitless Double Taper FocusLiner™ with wool	Trace analysis of dirty samples	TRACE™ / FOCUS™	5 x 105 x 8.0	-	092046 09204625		AG0-4679 AG0-7863	5/pk 25/pk	
	Splitless Liner	General use	Mega 4000 / 5000, & 6000	3 x 79.5 x 5.0	5/pk 25/pk	45300400		AG0-4643 -	5/pk	
2	Splitless Liner	General use	TRACE™ / FOCUS™	3 x 105 x 8.0	5/pk 25/pk	-		AG0-4645 -	5/pk	
	Split / Splitless / Single Taper Liner / Trace	Trace analysis	TRACE™ / FOCUS™	5 x 105 x 8.0	ea 5/pk 25/pk	45350033	20945 20946 20947	– AG0-7852	5/pk	
2	Split, Straight Liner	General use	TRACE™ / FOCUS™	5 x 105 x 8.0	5/pk	092150		AG0-8669	5/pk	
	Splitless, Single Taper Liner	Large injection, trace analysis	Mega 4000 / 5000, & 6000	3 x 79.5 x 5.0	5/pk	092041		AG0-8670	5/pk	
	Splitless, FocusLiner	General use or dirty samples	TRACE™ / FOCUS™	5 x 105 x 8.0	5/pk	092045		AG0-8671	5/pk	
	Splitless Single Taper Liner	Small injection, trace analysis	TRACE™ / FOCUS™	3 x 105 x 8.0	5/pk	092141		AG0-8672	5/pk	
	Split FocusLiner with wool	General use or dirty samples	TRACE™ / FOCUS™	5 x 105 x 8.0	5/pk	092048		AG0-8673	5/pk	

Note: Large injection ≥ 2 µL. Small injection ≤ 2 µL. \*\* Similar to but not always an exact equivalent to the original manufacturer's product.

### **Liners for Varian® GC Systems**

Ord	lering	Inf	ormat	tion
0.0		••••	oa	

	Ordering information									
	Liners									Varian
	Description	Benefits / Uses	GC Model No.	Dimensions ID x L x OD (mm)	Units	Similar to Mfr	No **	Part No.	Unit	Price
	Split / Splitless Single Taper / Gooseneck Tapered FocusLiner™ with wool	Great recovery and linearity for trace analysis of active compounds	1075/1077	4 x 72 x 6.3	-	092025	-	AG0-4684	5/pk	11100
	Split / Splitless Double Taper / Gooseneck Tapered FocusLiner™ with wool	General use and large injections	1078/1079	3.4 x 54 x 5	-	092036	-	AG0-4685	5/pk	
<u> </u>	Splitless Liner	Small injection, trace analysis	1075/1077	2 x 75 x 6.3	ea 5/pk 25/pk not deactivated	- 01-900109-05 - 03-949437-09	20721 20722 20723 -	AG0-4671 - -	5/pk	
s This En	Split / Splitless Liner	Large injection, trace analysis	1075/1077	4 x 75 x 6.3	ea 5/pk 25/pk	16-000830-00 01-900109-05 —	20904 20905 20906	AG0-4673	5/pk	
<b>Column Installs This End</b>	SPI (septum-equipped programmable injector) Liner (0.25 mm)	Great linearity for 0.25 & 0.32 mm IDs	1093/1094	0.5 x 54 x 4.6	ea 5/pk 25/pk not deactivated	- 01-900109-06 - 03-918332-01	20775 20776 20777	AG0-4675 - -	5/pk	
IIIOS	SPI (septum-equipped programmable injector) Liner (0.50 mm)	Great linearity for 0.53 mm ID	1093/1094	0.8 x 54 x 4.6	ea 5/pk 25/pk	- - 01-900109-07	20778 20779 20780	AG0-4677	5/pk	
	Straight Liner	Trace analysis	1078/1079	0.5 x 54 x 5.0	5/pk	092031		AG0-8665	5/pk	
	Split / Splitless FocusLiner	General use or dirty samples	1078/1079	3.4 x 54 x 5.0	5/pk	092037		AG0-8666	5/pk	
	Split / Splitless, Single Taper Liner	Large injection, trace analysis	1078/1079	3.4 x 54 x 5.0	5/pk	092038		AG0-8667	5/pk	
	Splitless, Single Taper Liner	Small injection, trace analysis	1078/1079	2 x 54 x 5.0	5/pk	092039		AG0-8668	5/pk	

Note: Large injection  $\geq$  2  $\mu$ L. Small injection  $\leq$  2  $\mu$ L \*\* Similar to but not always an exact equivalent to the original manufacturer's product.

### **Syringe Selection Guide**

### **Needle Gauge Dimensions**

Gauge	0	D	ID		
26	0.018 in.	0.46 mm	0.0102 in.	0.26 mm	
26s	0.019 in.	0.47 mm	0.0050 in.	0.13 mm	
25	0.021 in.	0.51 mm	0.0102 in.	0.26 mm	
23s	0.025 in.	0.64 mm	0.0060 in.	0.15 mm	
23	0.025 in.	0.64 mm	0.0132 in.	0.34 mm	
22s	0.028 in.	0.72 mm	0.0060 in.	0.15 mm	
22	0.028 in.	0.72 mm	0.0162 in.	0.41 mm	



### **Needle Point Styles**

Style	Description	Advantage
	AS/Cone	Exclusively for Agilent autosamplers
	2, BV (Beveled tip)	Optimal septum penetration for reduced septum coring
	3, LD (Blunt tip)	General sample pipetting and HPLC injectors
0	5 (Conical with side hole)	Side hole for sample filling and dispensing
0	H (Dome with side hole)	Side hole for sample filling and dispensing. Dome tip minimizes septum coring.

### **Needle / Needle Connection Styles**

Style	Description	Manufacturer	Advantage
ASN	Autosampler Needle	Hamilton®	For use with autosamplers
RN	Removable Needle	Hamilton	Allows freedom to change needle style or replace broken needles
N	Cemented Needle	Hamilton	Low dead volume
KH	Knurled Hub	Hamilton	Able to handle pressure up to 6000 psig
LTN	Luer Tip Cemented Needle	Hamilton	Fixed needle with Luer Tip
TLL	PTFE Luer Lock	Hamilton	Luer Lock with locking hub for use with syringe filters
F	Fixed Needle	SGE®	Economical and more reproducible
R	Removable Needle	SGE	Allows freedom to change needle style or replace broken needles
FLL	Fixed Luer Lock	SGE	Allows use with syringe filters
LL	Luer Lock	SGE	Allows use with syringe filters

### **Autosampler Syringes**

### Syringes for Agilent® GC 7673, 7683, and 6850 Autosampler Systems

### **Ordering Information**

Hamilton Syringes											
Volume (µL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*		Unit	Part No.	Price
Microliter Sy	ringes										
5	ASRN	23	1.71 in.	Agilent	75	87957	24793		ea	AS0-8834	
5	ASN	23s	1.71 in.	Agilent	75	87987	9301-0892	20168	ea	AS0-4386	
5	ASN	23s	1.71 in.	Agilent	75	87990	20170		6/pk	AS0-7641	
5	ASRN	26	1.71 in.	Agilent	75	87958	24792		ea	AS0-8833	
5	ASN	26s	1.71 in.	Agilent	75	87989	21230		6/pk	AS0-8683	
5	ASRN	23s-26s	1.71 in.	Agilent	75	87959	21211		ea	AS0-8831	
5	ASN	23s-26s	1.71 in.	Agilent	75	87993	24593		ea	AS0-8380	
10	ASRN	23	1.71 in.	Agilent	701	80357	24795		ea	AS0-8836	
10	ASN	23s	1.71 in.	Agilent	701	80387	9301-0713	20167	ea	AS0-4387	
10	ASN	23s	1.71 in.	Agilent	701	80390	9301-0725	20169	6/pk	AS0-4388	
10	ASRN	26	1.71 in.	Agilent	701	80358	24794		ea	AS0-8835	
10	ASN	26s	1.71 in.	Agilent	701	80389	24599		6/pk	AS0-4389	
10	ASRN	23s-26s	1.71 in.	Agilent	701	80359	21213		ea	AS0-8832	
10	ASN	23s-26s	1.71 in.	Agilent	701	80393	24596		ea	AS0-8684	
10	ASN	23s-26s	1.71 in.	Agilent	701	80391	24600		6/pk	AS0-8685	
Teflon Tip Ga	stight® Syringes										
5	ASN	23s	1.71 in.	Agilent	175	80074	24893		ea	AS0-8686	
10	ASN	23s-26s	1.71 in.	Agilent	1701	80079	n/a		ea	AS0-8837	

### **Autosampler Syringes (**cont'd)

### Syringes for Agilent® GC 7673, 7683, and 6850 Autosampler Systems

GE <sup>®</sup> Syring	es									
Volume (µL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*	Unit	Part No.	Price
Microliter S	/ringes									
5	F	23	42 mm	Cone	5F-HP-0.63C	001810	24781	ea	AS0-8839	
5	F	23	42 mm	Cone	SK-5F-HP-0.63	001814	24783	6/pk	AS0-8687	
5	R	23	42 mm	Cone	5R-HP-0.63C	001815	24793	ea	AS0-8843	
5	F	26	42 mm	Cone	5F-HP-0.47C	001800	24780	ea	AS0-8838	
5	F	26	42 mm	Cone	SK-5F-HP-0.47	001814	24782	6/pk	AS0-8608	
5	F	23s-26s	42 mm	Cone	SK-5F-HP-0.63/0.47	001822	21214	6/pk	AS0-8689	
5	R	26	42 mm	Cone	5R-HP-0.47C	001805	24792	ea	AS0-8842	
5	F	23-26	42 mm	Cone	5F-HP-0.63*0.47	001821	5181-1273 21210	ea	AS0-5208	
10	F	26	42 mm	Cone	SK-10F-HP-47	002804	24786	6/pk	AS0-7637	
10	R	23	42 mm	Cone	10RHP-0.63	002815	24795	ea	AS0-8690	
10	F	23	42 mm	Cone	10F-HP-0.63	002810	24785	ea	AS0-8691	
10	F	26	42 mm	Cone	SK-10F-HP-0.47	002804	24786	6/pk	AS0-7637	
10	R	26	42 mm	Cone	10R-HP-0.47C	002805	24794	ea	AS0-8844	
10	F	23	42 mm	Cone	SK-10F-HP-0.63	002814	24787	6/pk	AS0-8692	
10	F	23s-26s	42 mm	Cone	10F-HP-0.63/0.47	002821	21212	ea	AS0-8693	
10	F	23s-26s	42 mm	Cone	SK-10F-HP-0.63/0.47	002822	21215	6/pk	AS0-8694	
10	R	23-26	42 mm	Cone	10R-HP-0.63/0.47C	002825	21213	ea	AS0-8841	
eflon Tip G	astight Syringes									
10	F	23	42 mm	Cone	HF-HP-GT-0.63	002812	24789	ea	AS0-8695	
10	R	23-26	42 mm	Cone	10R-HP-GT-0.63/0.47	002829	21220	ea	AS0-8696	
10	F	23-26	42 mm	Cone	10F-HP-GT-0.63/0.47	002826	5181-1267	ea	AS0-5209	
10	F	23-26	42 mm	Cone	SK10F-HP-FT-0.63/0.47	002827	5181-3361	6/pk	AS0-5210	

### Syringes for PerkinElmer® AutoSystem™ and Clarus® 500 GC Systems

### **Ordering Information**

SGE Syringes	5									
Volume (µL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*	Unit	Part No.	Price
Microliter Sy	ringes									
0.5	R	23	70 mm	Cone	0.5BR-PE-0.63	000478	24811	ea	AS0-8697	
5	F	23	70 mm	Cone	5F-PE-0.63	001954	24813	ea	AS0-8698	

### Syringes for Varian® 8000 Series GC Systems

### **Ordering Information**

SGE Syringes	;									
Volume (μL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*	Unit	Part No.	Price
Microliter Sy	ringes									
10	R	25	53 mm	Side Hole	10R-VA8X-II	002924	24852	ea	AS0-8699	
10	F	26	50 mm	Cone	10F-C/F-5/0.47C	002980	24922	ea	AS0-8700	
10	F	26	50 mm	Bevel	10F-VA8400-5/0.47	002950	21202	ea	AS0-8701	

### Syringes for Shimadzu® AOC 9GC Systems

### **Ordering Information**

<b>Hamilton Syr</b>	inges									
Volume (μL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*	Unit	Part No.	Price
Microliter Sy	ringes									
5	RN	26s	2 in. /51 mm	2	75RN	87930	24617	ea	AS0-8702	
5	N	26s	2 in. /51 mm	2	75N	87900	24938	ea	AS0-4390	
10	RN	26s	2 in. /51 mm	2	701RN	80330	24530	ea	AS0-0100	

SGE Syringe	s										
Volume (μL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*	Unit	Part No.	Price	
Microliter Syringes											
10	R	23	12 mm	Cone	10R_S_0 63	002808	24845	02	ΔS0-8703		



\*Similar to but not always an exact equivalent to the original manufacturer's product.

### **Manual Syringes**

	Order	ina	Info	rmat	tion
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Needle   Needle   Needle   Cength   Needle   N	Hamilton Syr	inges									
5 N 268 2 in/51 mm 2 75N 87900 24938 ea AS0-4390 5 RN 268 2 in/51 mm 2 75RN 87930 24938 ea AS0-4390 5 RN 268 2 in/51 mm 2 75RN 87930 24617 ea AS0-87702 10 N 268 2 in/51 mm 2 701N 80300 20174 ea AS0-0707 10 N 268 2 in/51 mm 2 701N 80300 20174 ea AS0-0076 10 RN 268 2 in/51 mm 2 701RN 80330 24530 ea AS0-0116 10 RN 268 2 in/51 mm 2 701RN 80330 24530 ea AS0-0116 10 N 228 2 in/51 mm 2 702N 80400 24531 ea AS0-0078 10 N 268 2 in/51 mm 5 701NPT5 80339 24967 ea AS0-0094 Positive Displacement Syringes  10 N 268 2 in/51 mm 5 701NPT5 80339 24967 ea AS0-0094 Positive Displacement Syringes  0.5 KH 25 2.75 in/70 mm 2 701N 86211 24549 ea AS0-8716 1.0 KH 258 2.75 in/70 mm 2 7011 86211 24549 ea AS0-8716 1.0 KH 258 2.75 in/70 mm 2 7001 80135 24547 ea AS0-8716 1.0 KH 258 2.75 in/70 mm 2 7001 80135 24547 ea AS0-8716 1.0 KH 258 2.75 in/70 mm 2 7001 80135 24547 ea AS0-8718 1.0 KH 258 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8718 1.0 KH 258 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8718 1.0 KH 268 2 in/51 mm 2 7105 88011 24555 ea AS0-8719 10 N 268 2 in/51 mm 2 1701 80000 24557 ea AS0-8719 10 RN 268 2 in/51 mm 2 1701 80000 24557 ea AS0-8719 10 RN 268 2 in/51 mm 2 1702 80200 24559 ea AS0-8799 10 RN 228 2 in/51 mm 2 1702 80200 24559 ea AS0-8799 10 RN 228 2 in/51 mm 2 1702 80200 24569 ea AS0-8799 10 RN 228 2 in/51 mm 2 1702 80200 24569 ea AS0-8799 10 RN 228 2 in/51 mm 2 1705 80900 24561 ea AS0-1901 10 RN 228 2 in/51 mm 2 1705 80900 24562 ea AS0-1900 100 N 228 2 in/51 mm 2 1705 80900 24562 ea AS0-1900 100 RN 228 2 in/51 mm 2 1705 80900 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 80900 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm 2 1706 81200 24567 ea AS0-1900 100 RN 228 2 in/51 mm	Volume	Needle/Needle	Gauge			Model	Mfr. No		Unit	Part No.	Price
5         RN         26s         2 in/51 mm         2         75RN         87930         24617         ea         AS0-8702           10         N         26s         2 in/51 mm         2         701N         80306         20175         6/pk         AS0-0076           10         RN         26s         2 in/51 mm         2         701RN         80330         24530         ea         AS0-0100           25         N         22s         2 in/51 mm         2         702N         80400         24531         ea         AS0-0100           25         N         22s         2 in/51 mm         5         701NPT5         80339         24967         ea         AS0-0094           Positive Displacement Syringes           0.5         KH         25         2.75 in/70 mm         2         7001         86219         24545         ea         AS0-8716           1.0         KH         25         2.75 in/70 mm         2         7001         80135         24547         ea         AS0-8716           1.0         KH         25         2.75 in/70 mm         2         7001         8010         24548         ea         AS0-8718           1.0 <td>Microvolume</td> <td>Syringes</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Microvolume	Syringes									
10 N 268 2 in/51 mm 2 701N 80300 20174 ea AS0-0077 10 N 268 2 in/51 mm 2 701N 80360 20175 6/pk AS0-0016 10 RN 268 2 in/51 mm 2 701RN 80330 24530 ea AS0-0016 25 N 228 2 in/51 mm 2 702N 80400 24531 ea AS0-0018 25 N 228 2 in/51 mm 5 701NPT5 80339 24967 ea AS0-0038  Positive Displacement Syringes  0.5 KH 25 2.75 in/70 mm 2 7000.5 86259 24545 ea AS0-8715 1.0 KH 22 2.75 in/70 mm 2 7001 86211 24549 ea AS0-8716 1.0 KH 25 2.75 in/70 mm 2 7001 86211 24549 ea AS0-8716 1.0 KH 25 2.75 in/70 mm 3 7001 80100 24548 ea AS0-8716 1.0 KH 25 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8717 2.0 KH 25 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8718 5.0 KH 24 2.75 in/70 mm 2 7002 88411 24555 ea AS0-8719  Tefton Tip Castight Syringes  10 N 268 2 in/51 mm 2 1701 8000 24558 ea AS0-8719  Tefton Tip Castight Syringes  10 N 268 2 in/51 mm 2 1701 8000 24558 ea AS0-8719  Tefton Tip Castight Syringes  10 N 268 2 in/51 mm 2 1701 8000 24558 ea AS0-8719  Tefton Tip Castight Syringes  25 NN 228 2 in/51 mm 2 1701 8000 24558 ea AS0-8719  Tefton Tip Castight Syringes  25 NN 228 2 in/51 mm 2 1701 80030 24558 ea AS0-8719  Tefton Tip Castight Syringes  25 NN 228 2 in/51 mm 2 1701 80030 24558 ea AS0-8719  Tefton Tip Castight Syringes  25 NN 228 2 in/51 mm 2 1700 80230 24550 ea AS0-8719  Tefton Tip Castight Syringes  25 NN 228 2 in/51 mm 2 1705 80930 24560 ea AS0-1899  50 NN 228 2 in/51 mm 2 1705 80930 24561 ea AS0-1900  100 N 228 2 in/51 mm 2 1705 80930 24561 ea AS0-1900  100 N 228 2 in/51 mm 2 1705 80930 24561 ea AS0-1900  100 N 228 2 in/51 mm 2 1710 81030 24564 ea AS0-1900  250 RN 228 2 in/51 mm 2 17750 81130 24567 ea AS0-1901  250 NN 228 2 in/51 mm 2 17750 81130 24567 ea AS0-0063  250 RN 228 2 in/51 mm 2 17750 81130 24567 ea AS0-0063  250 RN 228 2 in/51 mm 2 1750 81130 24567 ea AS0-0063  250 RN 228 2 in/51 mm 2 1750 81130 24567 ea AS0-0064  500 RN 22 2 in/51 mm 2 1750 81230 24572 ea AS0-1903  1 mL LTN 22 2 in/51 mm 2 1750 81230 24575 ea AS0-1903  1 mL LTN 22 2 in/51 mm 2 1750 81230 24575 ea AS0-1903  1 mL LTN 22 2 in/51 mm 2 1750 81230 24564 ea AS0-1903  25	5	N	26s	2 in./51 mm	2	75N	87900	24938	ea	AS0-4390	
10 N 26s 2 in/51 mm 2 701RN 80366 20175 6/pk AS0-0016 10 RN 26s 2 in/51 mm 2 701RN 80330 24530 ea AS0-0100 25 N 22s 2 in/51 mm 2 702N 80400 24531 ea AS0-0078 10 N 26s 2 in/51 mm 5 701NPT5 80339 24967 ea AS0-0094 Positive Displacement Syringes  0.5 KH 25 2.75 in/70 mm 2 7000.5 86259 24545 ea AS0-8715 1.0 KH 22 2.75 in/70 mm 2 7101 86211 24549 ea AS0-8716 1.0 KH 25s 2.75 in/70 mm 2 7001 80135 24547 ea AS0-8716 1.0 KH 25s 2.75 in/70 mm 2 7001 80135 24547 ea AS0-8716 1.0 KH 25s 2.75 in/70 mm 2 7001 80135 24547 ea AS0-8717 2.0 KH 25 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8718 5.0 KH 24 2.75 in/70 mm 2 7002 88411 24555 ea AS0-8718 5.0 KH 24 2.75 in/70 mm 2 7105 88011 24555 ea AS0-8718 10 RN 26s 2 in/51 mm 2 1701 80000 24558 ea AS0-8718 25 N 22s 2 in/51 mm 2 1701 80000 24558 ea AS0-8391 10 RN 26s 2 in/51 mm 2 1702 80200 24559 ea AS0-8391 50 N 22s 2 in/51 mm 2 1702 80200 24559 ea AS0-8720 25 RN 22s 2 in/51 mm 2 1702 80200 24560 ea AS0-80189 50 N 22s 2 in/51 mm 2 1702 80200 24560 ea AS0-8018 50 RN 22s 2 in/51 mm 2 1702 80200 24561 ea AS0-8018 50 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-8018 50 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1900 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea AS0-1	5	RN	26s	2 in./51 mm	2	75RN	87930	24617	ea	AS0-8702	
10 RN 26s 2 in/51 mm 2 701RN 80330 24530 ea ASO-0100 25 N 22s 2 in/51 mm 2 702N 80400 24531 ea ASO-0078 10 N 26s 2 in/51 mm 5 701NPT5 80339 24967 ea ASO-0094 Positive Displacement Syringes  □.5 KH 25 2.75 in/70 mm 2 7000.5 86259 24545 ea ASO-8716 1.0 KH 22s 2.75 in/70 mm 2 7001 80113 24549 ea ASO-8716 1.0 KH 25s 2.75 in/70 mm 2 7001 80135 24547 ea ASO-1918 1.0 KH 25s 2.75 in/70 mm 3 7001 80100 24548 ea ASO-8716 1.0 KH 25s 2.75 in/70 mm 2 7001 80100 24548 ea ASO-8717 2.0 KH 25 2.75 in/70 mm 2 7002 88411 24551 ea ASO-8718 5.0 KH 24 2.75 in/70 mm 2 7002 88411 24551 ea ASO-8718 1.0 RN 26s 2 in/51 mm 2 1701 80000 24557 ea ASO-8719 110 RN 26s 2 in/51 mm 2 1701 80000 24558 ea ASO-8789 110 RN 26s 2 in/51 mm 2 1701 80000 24558 ea ASO-8789 110 RN 26s 2 in/51 mm 2 1702 80200 24559 ea ASO-8720 25 RN 22s 2 in/51 mm 2 1702 80200 24550 ea ASO-8720 25 RN 22s 2 in/51 mm 2 1702 80200 24560 ea ASO-8720 100 RN 22s 2 in/51 mm 2 1702 80200 24561 ea ASO-0061 50 RN 22s 2 in/51 mm 2 1705 80900 24561 ea ASO-0061 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea ASO-0061 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea ASO-0061 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea ASO-0061 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea ASO-0061 100 RN 22s 2 in/51 mm 2 1705 80900 24561 ea ASO-0062 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea ASO-0061 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea ASO-0062 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea ASO-0062 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1705 80900 24564 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1705 81000 24567 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1705 81000 24567 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1705 81000 24567 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1725 81100 24567 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1725 81100 24567 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1725 81100 24567 ea ASO-0063 100 RN 22s 2 in/51 mm 2 1725 81100 24567 ea ASO-0065 100 RN 22 2 in/51 mm 2 1725 81100 24567 ea ASO-0065 100 RN 22 2 in/51 mm 2 1725 81100 24567 ea ASO-0065 100 RN 22 2 in/51 mm 2 1725 81100 2456	10	N	26s	2 in./51 mm	2	701N	80300	20174	ea	AS0-0077	
25 N 22s 2 in./51 mm 2 702N 80400 24531 ea ASO-0078 10 N 22s 2 in./51 mm 5 701NPT5 80339 24967 ea ASO-0078 Positive Diplacement Syringes  0.5 KH 25 2.75 in./70 mm 2 7000.5 86259 24545 ea ASO-8715 1.0 KH 22 2.75 in./70 mm 2 7101 86211 24549 ea ASO-8716 1.0 KH 25s 2.75 in./70 mm 2 7001.80135 24547 ea ASO-1918 1.0 KH 25s 2.75 in./70 mm 3 7001 80135 24547 ea ASO-1918 1.0 KH 25s 2.75 in./70 mm 2 7001 80135 24547 ea ASO-1918 1.0 KH 25 2.75 in./70 mm 2 7001 80100 24548 ea ASO-8716 1.0 KH 25 2.75 in./70 mm 2 7002 88411 24551 ea ASO-8718 5.0 KH 24 2.75 in./70 mm 2 7105 88011 24555 ea ASO-8718 5.0 KH 24 2.75 in./70 mm 2 7105 88011 24555 ea ASO-8719 10 N 26s 2 in./51 mm 2 1701 80000 24557 ea ASO-4391 10 RN 26s 2 in./51 mm 2 1701 80030 24558 ea ASO-1988 25 N 22s 2 in./51 mm 2 1701 80030 24558 ea ASO-1988 25 N 22s 2 in./51 mm 2 1702 80230 24559 ea ASO-8720 25 RN 22s 2 in./51 mm 2 1702 80230 24550 ea ASO-1900 100 N 22s 2 in./51 mm 2 1705 80930 24561 ea ASO-1900 100 N 22s 2 in./51 mm 2 1705 80930 24561 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24562 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24564 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24564 ea ASO-1900 100 RN 22s 2 in./51 mm 2 1705 80930 24564 ea ASO-1900 100	10	N	26s	2 in./51 mm	2	701N	80366	20175	6/pk	AS0-0016	
Total   Positive Displacement Syringes   Positive Displacement S	10	RN	26s	2 in./51 mm	2	701RN	80330	24530	ea	AS0-0100	
Positive Displacement Syringes	25	N	22s	2 in./51 mm	2	702N	80400	24531	ea	AS0-0078	
0.5 KH 25 2.75 in/70 mm 2 7000.5 86259 24545 ea AS0-8715 1.0 KH 22 2.75 in/70 mm 2 7101 86211 24549 ea AS0-8716 1.0 KH 25s 2.75 in/70 mm 2 7001 80135 24547 ea AS0-1918 1.0 KH 25s 2.75 in/70 mm 3 7001 80100 24548 ea AS0-8717 2.0 KH 25 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8717 2.0 KH 25 2.75 in/70 mm 2 7002 88411 24551 ea AS0-8718 5.0 KH 24 2.75 in/70 mm 2 7105 88011 24555 ea AS0-8718 10 N 26s 2 in/51 mm 2 1701 80000 24557 ea AS0-8719  Teflon Tip Gastight Syringes  10 RN 26s 2 in/51 mm 2 1701 80030 24558 ea AS0-898 25 N 22s 2 in/51 mm 2 1702 80200 24559 ea AS0-8720 25 RN 22s 2 in/51 mm 2 1702 80230 24560 ea AS0-1899 50 N 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-1899 50 N 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80900 24561 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24562 ea AS0-1090 100 N 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24564 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1061 50 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1000 100 RN 22s 2 in/51 mm 2 1705 80930 24563 ea AS0-1001 250 N 22s 2 in/51 mm 2 1706 80930 24564 ea AS0-1001 250 RN 22s 2 in/51 mm 2 1706 80930 24567 ea AS0-10062 100 RN 22s 2 in/51 mm 2 1706 80930 24567 ea AS0-10063 250 RN 22s 2 in/51 mm 2 1725 81100 24567 ea AS0-10063 250 RN 22s 2 in/51 mm 2 1725 81130 24567 ea AS0-10063 250 RN 22 2 in/51 mm 2 1750 81217 24571 ea AS0-0064 500 LTN 22 2 in/51 mm 2 1750 81217 24571 ea AS0-0064 500 LTN 22 2 in/51 mm 2 1750 81217 24571 ea AS0-0064 500 RN 22 2 in/51 mm 2 1750 81210 24576 ea AS0-1002 500 LTN 22 2 in/51 mm 2 1750 81210 24576 ea AS0-1003 1 mL LTN 22 2 in/51 mm 2 1001 81330 24576 ea AS0-1003 1 mL LTN 22 2 in/51 mm 2 1001 81330 24576 ea AS0-1008 2.5 mL RN 22 2 in/51 mm 2 1002 81430 24582 ea AS0-8722 2.5 mL RN 22 2 in/51 mm 2 1002 81430 24582 ea AS0-87	10	N	26s	2 in./51 mm	5	701NPT5	80339	24967	ea	AS0-0094	
1.0 KH 22 2.75 in./70 mm 2 7101 86211 24549 ea AS0-8716 1.0 KH 25s 2.75 in./70 mm 2 7001 80135 24547 ea AS0-1918 1.0 KH 25s 2.75 in./70 mm 3 7001 80100 24548 ea AS0-1918 1.0 KH 25s 2.75 in./70 mm 2 7002 88411 24551 ea AS0-8717 2.0 KH 25 2.75 in./70 mm 2 7105 88011 24555 ea AS0-8718 5.0 KH 24 2.75 in./70 mm 2 7105 88011 24555 ea AS0-8719  Teffon Tip Gastight Syringes  10 N 26s 2 in./51 mm 2 1701 80000 24557 ea AS0-4391 10 RN 26s 2 in./51 mm 2 1701 80030 24558 ea AS0-1898 25 N 22s 2 in./51 mm 2 1702 80200 24559 ea AS0-1898 25 N 22s 2 in./51 mm 2 1702 80230 24560 ea AS0-1899 50 N 22s 2 in./51 mm 2 1705 80900 24561 ea AS0-061 50 RN 22s 2 in./51 mm 2 1705 80900 24561 ea AS0-061 50 RN 22s 2 in./51 mm 2 1705 80900 24561 ea AS0-1900 100 N 22s 2 in./51 mm 2 1705 80900 24563 ea AS0-1900 100 RN 22s 2 in./51 mm 2 1710 81000 24563 ea AS0-1900 100 RN 22s 2 in./51 mm 2 1710 81000 24563 ea AS0-1900 250 RN 22s 2 in./51 mm 2 1710 81000 24563 ea AS0-1900 250 RN 22s 2 in./51 mm 2 1710 81000 24563 ea AS0-0062 100 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22s 2 in./51 mm 2 1725 81100 24567 ea AS0-0063 250 RN 22 2 in./51 mm 2 1750 81230 24564 ea AS0-1901 250 RN 22 2 in./51 mm 2 1750 81230 24567 ea AS0-0065 1 mL RN 22 2 in./51 mm 2 1750 81230 24572 ea AS0-1903 1 mL LTN 22 2 in./51 mm 2 1750 81230 24576 ea AS0-1903 1 mL LTN 22 2 in./51 mm 2 1001 81330 24576 ea AS0-1907 2.5 mL RN 22 2 in./51 mm 2 1001 81330 24584 ea AS0-1908 2.5 mL RN 22 2 in./51 mm 2 1002 81430 24584 ea AS0-1908 2.5 mL RN 22 2 in./51 mm 2 1002 81430 24584 ea AS0-1908 2.5 mL RN 22 2 in./51 mm 2 1002 81430 24584 ea AS0-1908 2.5 mL RN 22 2 in./51 mm 2 1002 81430 24584 ea AS0-1908 2.5 mL RN 22 2 in./51 mm 2 1002 81430 24584 ea AS0-8722	Positive Disp	lacement Syringes									
1.0         KH         25s         2.75 in/70 mm         2         7001         80135         24547         ea         AS0-1918           1.0         KH         25s         2.75 in/70 mm         3         7001         80100         24548         ea         AS0-8717           2.0         KH         25         2.75 in/70 mm         2         7002         88411         24551         ea         AS0-8718           5.0         KH         24         2.75 in/70 mm         2         7105         88011         24555         ea         AS0-8718           5.0         KH         24         2.75 in/70 mm         2         7105         88011         24555         ea         AS0-8719           Teffon Tip Gastight Syringes           8000         24557         ea         AS0-4391           10         RN         26s         2 in/51 mm         2         1701         80000         24557         ea         AS0-1898           25         N         22s         2 in/51 mm         2         1702         80200         24559         ea         AS0-1898           25         RN         22s         2 in/51 mm         2         1702	0.5	KH	25	2.75 in./70 mm	2	7000.5	86259	24545	ea	AS0-8715	
1.0         KH         25s         2.75 in./70 mm         3         7001         80100         24548         ea         AS0-8717           2.0         KH         25         2.75 in./70 mm         2         7002         88411         24551         ea         AS0-8718           5.0         KH         24         2.75 in./70 mm         2         7105         88011         24555         ea         AS0-8719           Teflon Tip Gastight Syringes           10         N         26s         2 in./51 mm         2         1701         80000         24557         ea         AS0-4391           10         RN         26s         2 in./51 mm         2         1701         80030         24558         ea         AS0-1898           25         N         22s         2 in./51 mm         2         1702         80200         24560         ea         AS0-8720           25         RN         22s         2 in./51 mm         2         1702         80230         24560         ea         AS0-8720           25         RN         22s         2 in./51 mm         2         1705         80930         24561         ea         AS0-0061           50	1.0	KH	22	2.75 in./70 mm	2	7101	86211	24549	ea	AS0-8716	
2.0         KH         25         2.75 in/70 mm         2         7002         88411         24551         ea         AS0-8718           5.0         KH         24         2.75 in/70 mm         2         7105         88011         24555         ea         AS0-8719           Teflon Tip Gastight Syringes           10         N         26s         2 in/51 mm         2         1701         80000         24557         ea         AS0-4391           10         RN         26s         2 in/51 mm         2         1701         80030         24558         ea         AS0-1898           25         N         22s         2 in/51 mm         2         1702         80200         24559         ea         AS0-1898           25         RN         22s         2 in/51 mm         2         1702         80230         24560         ea         AS0-1899           50         N         22s         2 in/51 mm         2         1705         80900         24561         ea         AS0-1899           50         RN         22s         2 in/51 mm         2         1705         80930         24562         ea         AS0-1906           100	1.0	KH	25s	2.75 in./70 mm	2	7001	80135	24547	ea	AS0-1918	
5.0         KH         24         2.75 in./70 mm         2         7105         88011         24555         ea         AS0-8719           Teflon Tip Gastight Syringes           10         N         26s         2 in./51 mm         2         1701         80000         24557         ea         AS0-4391           10         RN         26s         2 in./51 mm         2         1701         80030         24558         ea         AS0-1898           25         N         22s         2 in./51 mm         2         1702         80230         24560         ea         AS0-1899           50         N         22s         2 in./51 mm         2         1705         80900         24561         ea         AS0-1899           50         RN         22s         2 in./51 mm         2         1705         80900         24561         ea         AS0-1899           50         RN         22s         2 in./51 mm         2         1705         80900         24561         ea         AS0-0061           50         RN         22s         2 in./51 mm         2         1710         81000         24563         ea         AS0-1900           100	1.0	KH	25s	2.75 in./70 mm	3	7001	80100	24548	ea	AS0-8717	
Teffon Tip Gastight Syringes	2.0	KH	25	2.75 in./70 mm	2	7002	88411	24551	ea	AS0-8718	
10         N         26s         2 in./51 mm         2         1701         80000         24557         ea         ASO-4391           10         RN         26s         2 in./51 mm         2         1701         80030         24558         ea         ASO-1898           25         N         22s         2 in./51 mm         2         1702         80200         24559         ea         ASO-8720           25         RN         22s         2 in./51 mm         2         1702         80230         24560         ea         ASO-1899           50         N         22s         2 in./51 mm         2         1705         80900         24561         ea         ASO-0061           50         RN         22s         2 in./51 mm         2         1705         80930         24562         ea         ASO-1900           100         N         22s         2 in./51 mm         2         1710         81000         24563         ea         ASO-0062           100         RN         22s         2 in./51 mm         2         1710         81030         24564         ea         ASO-1901           250         RN         22s         2 in./51 mm <t< td=""><td>5.0</td><td>KH</td><td>24</td><td>2.75 in./70 mm</td><td>2</td><td>7105</td><td>88011</td><td>24555</td><td>ea</td><td>AS0-8719</td><td></td></t<>	5.0	KH	24	2.75 in./70 mm	2	7105	88011	24555	ea	AS0-8719	
10         RN         26s         2 in./51 mm         2         1701         80030         24558         ea         ASO-1898           25         N         22s         2 in./51 mm         2         1702         80200         24559         ea         ASO-8720           25         RN         22s         2 in./51 mm         2         1702         80230         24560         ea         ASO-1899           50         N         22s         2 in./51 mm         2         1705         80900         24561         ea         ASO-0061           50         RN         22s         2 in./51 mm         2         1705         80930         24562         ea         ASO-1900           100         N         22s         2 in./51 mm         2         1710         81000         24563         ea         ASO-0662           100         RN         22s         2 in./51 mm         2         1710         81030         24564         ea         ASO-1901           250         N         22s         2 in./51 mm         2         1725         81130         24567         ea         ASO-1902           500         LTN         22         2 in./51 mm         <	Teflon Tip Ga	stight Syringes									
25         N         22s         2 in./51 mm         2         1702         80200         24559         ea         ASO-8720           25         RN         22s         2 in./51 mm         2         1702         80230         24560         ea         ASO-1899           50         N         22s         2 in./51 mm         2         1705         80900         24561         ea         ASO-0061           50         RN         22s         2 in./51 mm         2         1705         80930         24562         ea         ASO-0061           100         N         22s         2 in./51 mm         2         1710         81000         24563         ea         ASO-0062           100         RN         22s         2 in./51 mm         2         1710         81030         24564         ea         ASO-1900           250         N         22s         2 in./51 mm         2         1725         81130         24567         ea         ASO-0063           250         RN         22s         2 in./51 mm         2         1725         81130         24568         ea         ASO-1902           500         LTN         22         2 in./51 mm	10	N	26s	2 in./51 mm	2	1701	80000	24557	ea	AS0-4391	
25         RN         22s         2 in/51 mm         2         1702         80230         24560         ea         AS0-1899           50         N         22s         2 in/51 mm         2         1705         80900         24561         ea         AS0-0061           50         RN         22s         2 in/51 mm         2         1705         80930         24562         ea         AS0-1900           100         N         22s         2 in/51 mm         2         1710         81000         24563         ea         AS0-0062           100         RN         22s         2 in/51 mm         2         1710         81030         24564         ea         AS0-0062           100         RN         22s         2 in/51 mm         2         1725         81100         24567         ea         AS0-1901           250         RN         22s         2 in/51 mm         2         1725         81130         24568         ea         AS0-1902           500         LTN         22         2 in/51 mm         2         1750         81217         24571         ea         AS0-9064           500         RN         22         2 in/51 mm         2 </td <td>10</td> <td>RN</td> <td>26s</td> <td>2 in./51 mm</td> <td>2</td> <td>1701</td> <td>80030</td> <td>24558</td> <td>ea</td> <td>AS0-1898</td> <td></td>	10	RN	26s	2 in./51 mm	2	1701	80030	24558	ea	AS0-1898	
50         N         22s         2 in./51 mm         2         1705         80900         24561         ea         ASO-0061           50         RN         22s         2 in./51 mm         2         1705         80930         24562         ea         ASO-0062           100         N         22s         2 in./51 mm         2         1710         81000         24563         ea         ASO-0062           100         RN         22s         2 in./51 mm         2         1710         81030         24564         ea         ASO-0062           250         N         22s         2 in./51 mm         2         1725         81100         24567         ea         ASO-0063           250         RN         22s         2 in./51 mm         2         1725         81130         24568         ea         ASO-1902           500         LTN         22         2 in./51 mm         2         1750         81217         24571         ea         ASO-0064           500         RN         22         2 in./51 mm         2         1750         81230         24572         ea         ASO-1903           1 mL         LTN         22         2 in./51 mm	25	N	22s	2 in./51 mm	2	1702	80200	24559	ea	AS0-8720	
50         RN         22s         2 in./51 mm         2         1705         80930         24562         ea         ASO-1900           100         N         22s         2 in./51 mm         2         1710         81000         24563         ea         ASO-0062           100         RN         22s         2 in./51 mm         2         1710         81030         24564         ea         ASO-1901           250         N         22s         2 in./51 mm         2         1725         81100         24567         ea         ASO-0063           250         RN         22s         2 in./51 mm         2         1725         81130         24568         ea         ASO-1902           500         LTN         22         2 in./51 mm         2         1750         81217         24571         ea         ASO-0064           500         RN         22         2 in./51 mm         2         1750         81230         24572         ea         ASO-1903           1 mL         LTN         22         2 in./51 mm         2         1001         81317         24575         ea         ASO-0065           1 mL         RN         22         2 in./51 mm	25	RN	22s	2 in./51 mm	2	1702	80230	24560	ea	AS0-1899	
100         N         22s         2 in/51 mm         2         1710         81000         24563         ea         ASO-0062           100         RN         22s         2 in/51 mm         2         1710         81030         24564         ea         ASO-1901           250         N         22s         2 in/51 mm         2         1725         81100         24567         ea         ASO-0063           250         RN         22s         2 in/51 mm         2         1725         81130         24568         ea         ASO-1902           500         LTN         22         2 in/51 mm         2         1750         81217         24571         ea         ASO-0064           500         RN         22         2 in/51 mm         2         1750         81230         24572         ea         ASO-1903           1 mL         LTN         22         2 in/51 mm         2         1001         81317         24575         ea         ASO-0065           1 mL         RN         22         2 in/51 mm         2         1001         81330         24576         ea         ASO-8721           1 mL         TRL         -         -         w/o slot	50	N	22s	2 in./51 mm	2	1705	80900	24561	ea	AS0-0061	
100         RN         22s         2 in./51 mm         2         1710         81030         24564         ea         AS0-1901           250         N         22s         2 in./51 mm         2         1725         81100         24567         ea         AS0-0063           250         RN         22s         2 in./51 mm         2         1725         81130         24568         ea         AS0-1902           500         LTN         22         2 in./51 mm         2         1750         81217         24571         ea         AS0-0064           500         RN         22         2 in./51 mm         2         1750         81230         24572         ea         AS0-1903           1 mL         LTN         22         2 in./51 mm         2         1001         81317         24575         ea         AS0-0065           1 mL         RN         22         2 in./51 mm         2         1001         81330         24576         ea         AS0-8721           1 mL         TLL         -         -         -         w/o slots         1001         81320         24578         ea         AS0-8721           2.5 mL         TLL         - <td< td=""><td>50</td><td>RN</td><td>22s</td><td>2 in./51 mm</td><td>2</td><td>1705</td><td>80930</td><td>24562</td><td>ea</td><td>AS0-1900</td><td></td></td<>	50	RN	22s	2 in./51 mm	2	1705	80930	24562	ea	AS0-1900	
250         N         22s         2 in/51 mm         2         1725         81100         24567         ea         ASO-0063           250         RN         22s         2 in/51 mm         2         1725         81130         24568         ea         ASO-0063           500         LTN         22         2 in/51 mm         2         1750         81217         24571         ea         ASO-0064           500         RN         22         2 in/51 mm         2         1750         81230         24572         ea         ASO-1903           1 mL         LTN         22         2 in/51 mm         2         1001         81317         24575         ea         ASO-0665           1 mL         RN         22         2 in/51 mm         2         1001         81330         24576         ea         ASO-8721           1 mL         TLL         -         -         w/o slots         1001         81320         24578         ea         ASO-1907           2.5 mL         TLL         -         -         w/o slots         1002         81420         24584         ea         ASO-1908           2.5 mL         N         22         2 in/51 mm         <	100	N	22s	2 in./51 mm	2	1710	81000	24563	ea	AS0-0062	
250         RN         22s         2 in/51 mm         2         1725         81130         24568         ea         AS0-1902           500         LTN         22         2 in/51 mm         2         1750         81217         24571         ea         AS0-0064           500         RN         22         2 in/51 mm         2         1750         81230         24572         ea         AS0-1903           1 mL         LTN         22         2 in/51 mm         2         1001         81317         24575         ea         AS0-0065           1 mL         RN         22         2 in/51 mm         2         1001         81330         24576         ea         AS0-8721           1 mL         TLL         -         -         w/o slots         1001         81320         24578         ea         AS0-1907           2.5 mL         TLL         -         -         w/o slots         1002         81420         24584         ea         AS0-1908           2.5 mL         RN         22         2 in/51 mm         2         1002         81430         24582         ea         AS0-8723           2.5 mL         N         22         2 in/51 mm	100	RN	22s	2 in./51 mm	2	1710	81030	24564	ea	AS0-1901	
500         LTN         22         2 in/51 mm         2         1750         81217         24571         ea         AS0-0064           500         RN         22         2 in/51 mm         2         1750         81230         24572         ea         AS0-1903           1 mL         LTN         22         2 in/51 mm         2         1001         81317         24575         ea         AS0-0065           1 mL         RN         22         2 in/51 mm         2         1001         81330         24576         ea         AS0-8721           1 mL         TLL         -         -         w/o slots         1001         81320         24578         ea         AS0-1907           2.5 mL         TLL         -         -         w/o slots         1002         81420         24584         ea         AS0-1908           2.5 mL         RN         22         2 in/51 mm         2         1002         81430         24582         ea         AS0-8722           2.5 mL         N         22         2 in/51 mm         2         1002         81417         24581         ea         AS0-8723	250	N	22s	2 in./51 mm	2	1725	81100	24567	ea	AS0-0063	
500         RN         22         2 in./51 mm         2         1750         81230         24572         ea         ASO-1903           1 mL         LTN         22         2 in./51 mm         2         1001         81317         24575         ea         ASO-0065           1 mL         RN         22         2 in./51 mm         2         1001         81330         24576         ea         ASO-8721           1 mL         TLL         -         -         w/o slots         1001         81320         24578         ea         ASO-1907           2.5 mL         TLL         -         -         w/o slots         1002         81420         24584         ea         ASO-1908           2.5 mL         RN         22         2 in./51 mm         2         1002         81430         24582         ea         ASO-8722           2.5 mL         N         22         2 in./51 mm         2         1002         81417         24581         ea         ASO-8723	250	RN	22s	2 in./51 mm	2	1725	81130	24568	ea	AS0-1902	
1 mL         LTN         22         2 in/51 mm         2         1001         81317         24575         ea         AS0-0065           1 mL         RN         22         2 in/51 mm         2         1001         81330         24576         ea         AS0-8721           1 mL         TLL         -         -         w/o slots         1001         81320         24578         ea         AS0-1907           2.5 mL         TLL         -         -         w/o slots         1002         81420         24584         ea         AS0-1908           2.5 mL         RN         22         2 in/51 mm         2         1002         81430         24582         ea         AS0-8722           2.5 mL         N         22         2 in/51 mm         2         1002         81417         24581         ea         AS0-8723	500	LTN	22	2 in./51 mm	2	1750	81217	24571	ea	AS0-0064	
1 mL     RN     22     2 in./51 mm     2     1001     81330     24576     ea     AS0-8721       1 mL     TLL     -     -     w/o slots     1001     81320     24578     ea     AS0-1907       2.5 mL     TLL     -     -     w/o slots     1002     81420     24584     ea     AS0-1908       2.5 mL     RN     22     2 in./51 mm     2     1002     81430     24582     ea     AS0-8722       2.5 mL     N     22     2 in./51 mm     2     1002     81417     24581     ea     AS0-8723	500	RN		2 in./51 mm		1750	81230	24572	ea	AS0-1903	
1 mL     TLL     -     -     w/o slots     1001     81320     24578     ea     AS0-1907       2.5 mL     TLL     -     -     w/o slots     1002     81420     24584     ea     AS0-1908       2.5 mL     RN     22     2 in/51 mm     2     1002     81430     24582     ea     AS0-8722       2.5 mL     N     22     2 in/51 mm     2     1002     81417     24581     ea     AS0-8723	1 mL	LTN	22	2 in./51 mm		1001	81317	24575	ea	AS0-0065	
2.5 mL     TLL     -     -     w/o slots     1002     81420     24584     ea     ASO-1908       2.5 mL     RN     22     2 in./51 mm     2     1002     81430     24582     ea     ASO-8722       2.5 mL     N     22     2 in./51 mm     2     1002     81417     24581     ea     ASO-8723	1 mL	RN	22	2 in./51 mm	2	1001	81330	24576	ea	AS0-8721	
2.5 mL     RN     22     2 in./51 mm     2     1002     81430     24582     ea     AS0-8722       2.5 mL     N     22     2 in./51 mm     2     1002     81417     24581     ea     AS0-8723	1 mL	TLL	-	_	w/o slots	1001	81320	24578	ea	AS0-1907	
2.5 mL N 22 2 in./51 mm 2 1002 81417 24581 ea ASO-8723	2.5 mL	TLL	-	_	w/o slots	1002	81420	24584	ea	AS0-1908	
	2.5 mL	RN	22	2 in./51 mm		1002	81430	24582	ea	AS0-8722	
5 ml TII – – w/o slots 1005 81520 20178 ea ASO-8724	2.5 mL	N	22	2 in./51 mm	2	1002	81417	24581	ea	AS0-8723	
5 1000 1000 1000 20110 Oil 1000 OIL4	5 mL	TLL	-	_	w/o slots	1005	81520	20178	ea	AS0-8724	
10 mL TLL – – w/o slots 1010 81620 20179 ea ASO-1910	10 mL	TLL	-	_	w/o slots	1010	81620	20179	ea	AS0-1910	

### **Manual Syringes**

**Ordering Information** 

SGE Syringes	S									
Volume (µL)	Needle/Needle Connection	Gauge	Needle Length	Needle Style	Model	Mfr. No	Similar to Mfr. No.*	Unit	Part No.	Price
Microvolume	Syringes									
5	F	26	50 mm	2	5F	001000	24700	ea	AS0-8725	
5	R	26	50 mm	2	5R	001050	24701	ea	AS0-8726	
10	F	26	50 mm	2	10F	002000	24702	ea	AS0-8727	
10	F	26	50 mm	2	SK-10F	002030	24715	6/pk	AS0-8728	
10	R	26	50 mm	2	10R	002050	24703	ea	AS0-8729	
10	R	26	50 mm	2	SK-10R	002080	24716	6/pk	AS0-8730	
Positive Disp	lacement Syringes									
0.5	R	23	70 mm	2	0.5BR-7BV	000311	24771	ea	AS0-8737	
1.0	R	23	70 mm	2	1BR-7BV	000506	24775	ea	AS0-8738	
1.0	R	26	70 mm	Cone	1BR-7/0.47	000570	24776	ea	AS0-8739	
5.0	R	23	70 mm	2	5BR-7BV	000803	24779	ea	AS0-8740	
eflon Tip Ga	stight Syringes									
10	F	26	50 mm	2	10F-GT	002200	24725	ea	AS0-8741	
10	R	26	50 mm	2	10R-GT	002250	24726	ea	AS0-8742	
25	F	25	50 mm	2	25F-GT	003200	24727	ea	AS0-8743	
50	F	25	50 mm	2	50F-GT	004200	24729	ea	AS0-8744	
50	R	25	50 mm	2	50R-GT	004250	24730	ea	AS0-8745	
100	F	25	50 mm	2	100F-GT	005200	24734	ea	AS0-8746	
100	R	25	50 mm	2	100R-GT	005250	24735	ea	AS0-8747	
250	F	25	50 mm	2	250F-GT	006200	24738	ea	AS0-8748	
250	R	25	50 mm	2	250R-GT	006250	24739	ea	AS0-8749	
500	F	25	50 mm	2	500F-GT	007200	24742	ea	AS0-8750	
500	R	25	50 mm	2	500R-GT	007250	24743	ea	AS0-8751	
1 mL	RN	23	50 mm	Bevel	1MDR-GT	008100	24750	ea	AS0-8845	
1 mL	LL	_	_	_	1MDF-LL-GT	008025	24752	ea	AS0-0120	
2.5 mL	R	23	50 mm	Bevel	MDR-GT	008500	_	ea	AS0-8752	
5 mL	LL	-	_	_	5MDR-LL-GT	008760	24757	ea	AS0-0121	
5 mL	FLL	-	_	_	5MDF-LL-GT	008762	_	ea	AS0-8753	
10 mL	LL	-	_	_	10MDR-LL-GT	008960	24759	ea	AS0-0122	
10 mL	FLL	_	_	_	10MDR-LL-GT	008962	_	ea	AS0-8754	
25 mL	LL	_	_	_	25MDR-LL-GT	009462	24760	ea	AS0-8755	
25 mL	FLL	_	_	_	25MDR-LL-GT	009463	_	ea	AS0-8756	



\*Similar to but not always an exact equivalent to the original manufacturer's product.

### Verex™

### Leading in Quality, Delivery and Support

The most critical point of your analysis is when you put your sample in the vial. Verex certified sample vials, inserts, caps and seals are guaranteed to ensure problem-free, reproducible performance with consistent results you can trust.

### All Vials, Caps and Kits

- · Advanced manufacturing
- Multi-step QA/QC
- · Cleanroom packaged
- Certified

With the demand for better product stability and performance in glass, septa and caps, we developed Verex HPLC / GC vial products with high quality materials to exceed industry specifications and tolerances. Verex innovative precision products provide air-tight, leak-free seals to safely transfer and store your most important samples. Through extensive testing, we've created guaranteed-fit vial products that offer compatibility with virtually any autosampler for trouble-free operation.

With tightly controlled 100 % traceable manufacturing processes, we re-defined the standards for lot traceability and certification of every Verex product to ensure a uniform product with optimum performance for any application. For those with the most sensitive applications, choose Verex-Certified PLUS for excellent ultra-grade cleanliness. Bottom line, Verex is your sample transfer and storage solution.

Vials and inserts are made of inert, high-purity, chemically-stable borosilicate glass to exacting specifications, individually heat-treated to burn off any impurities, then packaged in a cleanroom environment. Choose from crimp, snap, and screw types or mix and match vials and caps to your application. Most vials are offered with or without write-on marking spot or "patch". For easy selection, purchase convenience, or assembled vial kits ready to go!

Verex caps / seals / closures are made to exacting specifications, giving a tight seal each and every time. The aluminum crimp seals, plastic screw and snap caps come with highly pure septa material and are available in pre-slit and non-slit formats. Economical press-fit and specially formulated bonded-in septa styles are both available. And our NEW mass spec certified screw caps provide you with a state-of-the art solution for your most challenging, sensitive applications.

A variety of convenience complete vial kits are available to meet the most demanding needs of chromatographers, from routine analytical to high-sensitivity work:

- 33 Expansion clear glass (USP Type 1 borosilicate, Class A), 51A amber glass
- · Limited volume (high sample recovery) vials
- · Silanized (deactivated) glass
- Polypropylene for biocompatibility
- Certified and special MS-certified (caps and vials)

### **Quality Manufacturing Overview**

### Eliminate troubleshooting and costly re-work caused by low-quality products

All Verex vial and cap products from Phenomenex are certified and lot traceable using the most advanced methods available and finished in tamper-evident packaging for added quality assurance. Each item is manufactured, processed, and packaged to exacting specifications and must pass a battery of certification tests:

Phenomenex autosampler vials are machine-made from high quality borosilicate glass (Type I Class A), offering the lowest ion content possible. State of the art facilities use the most advanced manufacturing technologies available to deliver the finest product possible. Machine vision cameras at multiple locations inspect several critical dimensions and tolerances, ensuring the manufacture of uniform, defect-free products.

Once formed by high-speed automated machines, the vials are immediately annealed at approximately 1200 °F to improve integrity and to burn off any organic chemical contamination. The result is particulate-, contaminate; and pyrogen-free products. As the vials exit the annealing (Lehr) oven, they pass through a contained cooling station, and into a positive-pressure cleanroom environment where they are robotically packaged contaminate free into pre-cleaned, inert vial trays.

During manufacture, each production lot is sampled using random sampling procedures, following ANSI methods and standards. The internal and external dimensions as well as neck and thread finishes are measured, adhering to tight tolerances to exactly match manufacturer's systems and autosamplers. Then most products are rigorously tested by LC-UV, GC-FID or LC-MS for any possible contamination. No vial or insert is placed in inventory without passing contamination, cleanliness, and performance testing. Certified Verex vials are your assurance and guarantee of reliability and performance.

Septa and cap assemblies are also rigorously tested and inspected for the low particulate and extractables. Headspace GC of the raw and processed materials ensures the lowest possible contamination from silicone polymers and other trace chemicals. Soak time solvent testing of finished goods is performed, as well as shelf life testing by LC to ensure product cleanliness and lack of impurities.

### Verex<sup>™</sup> Vials

All Verex<sup>™</sup> products are fully lot-tested and certified, ensuring optimum performance for your application. Each product comes with a Certificate of Conformance. Learn more about product specifications and testing at **www.phenomenex.com/Verex.** 

### **Verex**™: Three Levels of Certification

	LEVEL 1	LEVEL 2	LEVEL 3
	Certified	Certified + PLUS (Cert+)	Certified MSQ (certified + MSQ) (Mass Spec Quality)
Ultra Clean Specially designed and treated for mass spectrometry (MS) applications.			
Low Bleed Special cap / closure processing, treating, and testing for low bleed of residual organics. For high sensitivity GC/MS and LC/MS applications.			
Dimensionally Verified Machine vision cameras and gauges inspect critical dimensions and tolerances to produce uniform, defect-free products.			
Lot Traceable Vial and cap packs are 100% traceable through the manufacturing process. Certificate of Conformance available by lot number upon request.	<b>V</b>		
Clean Room Packaged Ensures particulate and contaminate-free products for clean chromatography.			
Part number Extension	No Extension Needed	Certificate of Conformance Included; Extension "-C"	Certificate of Conformance Included Extension "-M"
Part number Example	AR0-9921-13	AR0-9921-13 "-C"	AR0-9921-13 "-M"



If Verex vials and caps do not perform as well or better than your current vial and cap products of similar type, dimensions, and material, return the Verex vials and caps with comparative data within 45 days for a FULL REFUND.

Need vials to meet requirements for official EPA methods? Try Verex EPA Certified vials – look for part numbers ending with "-E".

Example: AR0-9531-12-E

### Verex<sup>™</sup> Vials

### 12 x 32 mm Specialty Vials

12 X 32 mm Spec	Type and Description	Finish	Material	Total Volume	Residual Volume	Available as	Page Number	Part Numbers
	High-Recovery CD Vial Center-draining	9-425 Screw Thread	Glass	1.5 mL	< 20 μL	Convenience Kits (certified and regular)	22 22 21 21	AR0-9981-13 AR0-9982-13 AR0-9985-13-C AR0-9986-13-C
	Max-Recovery CD Vial Center-draining	9-425 Screw Thread	Glass	1.5 mL	< 2 μL	Convenience Kits (certified)	21 21	AR0-9987-13-C AR0-9988-13-C
	Insert Vial μVial i2V	11 mm Snap	Glass	300 µL	< 4 μL	Vials (regular)	Inquire Inquire	AR0-3630-13 AR0-3631-13
	Insert Vial μVial i3 (Qsert)	11 mm Snap or 9-425 Screw Thread	Glass	475 µL	< 2 μL	Convenience Kits (certified and regular)	Inquire Inquire 22 22 21	AR0-9671-13 AR0-9672-13 AR0-9973-13 AR0-9974-13 AR0-9974-13-C
	Insert Vial μVial i3 (Qsert)	11 mm Crimp or 11 mm Snap or 9-425 Screw Thread	Glass	475 µL	< 2 μL	Vials (regular)	Inquire 20 20 22 22 22	AR0-3625-13 AR0-3725-13 AR0-3726-13 AR0-3920-13 AR0-3921-13
	Insert Vial μVial i3 (Qsert)	10-425 Screw Thread	Glass	450 μL	< 2 μL	Vials (regular)	Inquire Inquire	AR0-3020-13 AR0-3021-13
	Plastic Vial	9-425 Screw Thread	Polypropylene	700 µL	< 5 μL	Convenience Kits (certified)	21 21	AR0-9993-13-C AR0-9994-13-C
	Plastic Vial	11 mm Snap or 9-425 Screw Thread	Polypropylene	300 µL	< 2 μL	Convenience Kits (certified and regular)	Inquire Inquire 22 22 21 Inquire	AR0-9691-13-C AR0-9692-13-C AR0-9991-13 AR0-9992-13 AR0-9995-13-C AR0-36S0-13-C
	Micro Vial with Tapered Base v-Vial	11 mm Crimp or 11 mm Snap or 9-425 Screw Thread or 10-425 mm Screw Thread	Glass	1.4 mL	< 4 μL	Vials Vials (regular)	Inquire Inquire Inquire 20 20 22 22	AR0-39S0-13-C  AR0-3040-13 AR0-3640-13 AR0-3740-13 AR0-3741-13 AR0-3940-13 AR0-3941-13



For vial finish, the prefix refers to vial diameter followed by standard thread finish. For example, 9-425 neck finish represents a vial with a diameter of 9 mm across the outside of the threads and a thread style of 425.

### 12 x 32 mm, 11 mm Crimp-Top Vials and Closures



### Crimp-Top Vials, 2.0 mL

- · Cleaner vials eliminate ghost peaks and contaminants
- Used with most autosamplers, including Agilent®, Thermo Scientific®, Waters®
- Larger-opening "wide-mouth" style prevents broken needles and system downtime
- · Precision neck improves crimping

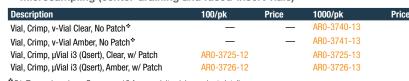
**Ordering Information** 

1000/pk	Price
AR0-3700-13	
AR0-3710-13	
AR0-3711-13	
	AR0-3700-13 AR0-3710-13

Description	1000/pk	Price
Wide Mouth Opening		
Vial, Crimp, 2 mL Wide Mouth, Clear, No Patch	AR0-37K0-13	
Vial, Crimp, 2 mL Wide Mouth, Clear, w/ Patch	AR0-37L0-13	
Vial, Crimp, 2 mL Wide Mouth, Amber, No Patch	AR0-37K1-13	
Vial Crimp 2 ml Wide Mouth Amber w/ Patch	AR0-37L1-13	

### **Limited Volume Specialty Crimp-Top Vials**

· Microsampling (center-draining and fused-insert vials)



<sup>\*51-</sup>Expansion glass. See page 19 for specialty vials product details.





- Excellent for volatile samples
- Extra clean to eliminate contamination
- Colored aluminum

Description	1000/pk	Price
Seal, 11mm Diameter, Crimp, PTFE/Silicone, silver	AR0-5780-13	
Seal, 11mm Diameter, Crimp, PTFE/Silicone/PTFE, silver	AR0-5760-13	
Seal, 11mm Diameter, Crimp, PTFE/Rubber, silver	AR0-5740-13	
Seal, 11mm Diameter, Crimp, PTFE/Rubber, blue	AR0-5742-13	
Seal, 11mm Diameter, Crimp, PTFE/Rubber, red	AR0-5741-13	
Seal, 11mm Diameter, Crimp, PTFE/Rubber, green	AR0-5743-13	
Seal, 11mm Diameter, Crimp, PTFE/Rubber, gold	AR0-574G-13	
Seal, 11mm Diameter, Crimp, PTFE, silver	AR0-5710-13	



**Save Money.** Bulk discounts available. Timely delivery. Excellent support.



**Request a Quote.** Want to make sure you're getting the best pricing on vials? Visit Phenomenex.com/Verex

### Verex<sup>™</sup> Vials

### 12 x 32 mm, 9-425 (9 mm) Screw-Top Vials and Kits

### Convenience Kits - Certified PLUS (Cert+) Mass Spec Quality (MSQ) 9-425 Screw-Top Vials and Caps with Locked-Fit Septa

- · For your most demanding analysis; high sensitive detectors
- . HPLC and LC/MS tested and certified
- · State-of-the-art design and manufacture



Description

LEVEL 3 **Ordering Information** Cert+ MSQ Vial Kit, 9 mm, 2 mL Clear w/ Patch + MSQ PTFE/Silicone AR0-992B-13-M Cert+ MSQ Vial Kit, 9 mm, 2 mL Amber w/ Patch + MSQ PTFE/Silicone

### Convenience Kits – Certified PLUS (Cert+) 9-425 Screw-Top Vials and Caps with Bonded-In Septa

- · Certified for cleanliness and enhanced quality
- Polyethylene-Starburst cap is an excellent choice for inertness



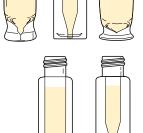
Simply choose the vial closure convenience kit for your application and you'll also receive a free dispenser box!



### Convenience Kits – Certified PLUS (Cert+) Limited Volume Specialty 9-425 Screw-Top Vials and Caps

- Kits for microsampling (center-draining and fused-insert vials)
- Lower trace contaminants for higher sensitivity work
- Inert polypropylene (PP) vials for biochromatography, or pH-sensitive applications







Cap is one piece, constructed of ultra-pure, medical-grade polyethylene. \*-B = Bonded-In Septa.

### Convenience Kits – 9-425 Screw-Top Vials and Caps with Bonded-In Septa

• Sample volume range from 0.2 to 1.5 mL



Description	1000/pk	Price
Vial Kit, 9 mm, 2 mL Clear + PTFE/Silicone	AR0-9901-13	
Vial Kit, 9 mm, 2 mL Clear + PTFE/Silicone, preSlit	AR0-9903-13	
Vial Kit, 9 mm, 2 mL Clear w/ Patch + PTFE/Silicone	AR0-9921-13	
Vial Kit, 9 mm, 2 mL Clear w/ Patch + PTFE/Silicone, preSlit	AR0-9925-13	
Vial Kit, 9 mm, 2 mL Clear + PTFE/Silicone/PTFE	AR0-9905-13	
Vial Kit, 9 mm, 2 mL Clear + PTFE/Rubber	AR0-9907-13	
Vial Kit, 9 mm, 2 mL Clear w/ Patch + PTFE/Rubber, preSlit	AR0-9914-13	
Vial Kit, 9 mm, 2 mL Amber w/ Patch + PTFE/Silicone	AR0-9922-13	
Vial Kit, 9 mm, 2 mL Amber w/ Patch + PTFE/Silicone, preSlit	AR0-9926-13	
Vial Kit, 9 mm, 2 mL Amber w/ Patch + PTFE/Silicone/PTFE	AR0-9923-13	
Vial Kit, 9 mm, 2 mL Amber w/ Patch + PTFE/Rubber	AR0-9912-13	
Vial Kit, 9 mm, 2 mL Amber w/ Patch + PTFE/Rubber, preSlit	AR0-9913-13	



Request a Quote. Visit Phenomenex.com/Verex for additional product selection and detailed information.

### 12 x 32 mm, 9-425 (9 mm) Screw-Top Vials and Kits (cont'd)

### Convenience Kits - Limited Volume Specialty 9-425 Screw-Top Vials and Caps with Bonded-In Septa

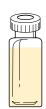
- · Kits for microsampling (center-draining and fused-insert vials)
- CD and Qsert vials offer superior performance over vials with loose inserts
- · Polypropylene (PP) vial kits for bio- or ion-chromatography, or pH-sensitive samples



#### **Ordering Information**

Description	100/pk	Price	1000/pk	Price
Vial Kit, 9 mm, High Recovery (CD) Clear + PTFE/Silicone	AR0-9981-12		AR0-9981-13	
Vial Kit, 9 mm, High Recovery (CD) Clear + PTFE/Silicone, preSlit	AR0-9982-12		AR0-9982-13	
Vial Kit, 9 mm, μVial i3 (Qsert) Clear w/ Patch + PTFE/Silicone	AR0-9973-12		AR0-9973-13	
Vial Kit, 9 mm, μVial i3 (Qsert) Clear w/ Patch + PTFE/Silicone, preSlit	AR0-9974-12		AR0-9974-13	
Vial Kit, 9 mm, PP, 300 µL + PTFE/Silicone**	_	_	AR0-9991-13	
Vial Kit, 9 mm, PP, 300 µL + PTFE/Silicone, preSlit**	_	_	AR0-9992-13	

No write-on patch unless otherwise indicated. See page 19 for specialty vials product details. \*\*Made of Polypropylene.



### Convenience Kits – Assembled 9-425 Screw-Top Vials and Caps with Bonded-In Septa

- · Cap and septa attached to vials
- Ready to use
- · Save time and labor

Description	1000/pk	Price
Vial Kit, 9 mm, 2 mL Clear w/ Patch + PTFE/Silicone, preSlit	AR0-9925-13-A	
Vial Kit, 9 mm, 2 mL Amber w/ Patch + PTFE/Silicone, preSlit	AR0-9926-13-A	
Vial Kit, 9 mm, 2 mL Clear, w/ Patch + PTFE/Rubber, Silanized	AR0-9915-13-A	



### 9-425 Screw-Top Vials, 2.0 mL

- Used with most autosamplers, including Agilent®, Thermo Scientific®, Waters®, and
- Performs as well as crimp or snap vials
- Offers improved cap convenience and accessibility (easy on, easy off)

Description	1000/pk	Price
Vial, 9 mm Screw, 2 mL Clear, No Patch	AR0-3900-13	
Vial, 9 mm Screw, 2 mL Amber, No Patch	AR0-3901-13	
Vial, 9 mm Screw, 2 mL Clear, w/ Patch	AR0-3910-13	
Vial, 9 mm Screw, 2 mL Amber, w/ Patch	AR0-3911-13	
Vial, 9 mm Screw, 2 mL Clear, w/ Patch, Silanized	AR0-3960-13	



### Limited Volume Specialty 9-425 Screw-Top Vials

- Microsampling Qsert and v-Vial center-draining vials
- Qsert fused-insert vials ensure proper seating of the cap
- Extremely low residual volume

Description	100/pk	Price	1000/pk	Price
Vial, 9 mm Screw, µVial i3 (Qsert) Clear, No Patch	AR0-3920-12		AR0-3920-13	
Vial, 9 mm Screw, µVial i3 (Qsert) Amber, No Patch	AR0-3921-12		AR0-3921-13	
Vial, 9 mm Screw, v-Vial Clear, No Patch*	AR0-3940-12		AR0-3940-13	
Vial, 9 mm Screw, v-Vial Amber, No Patch*	AR0-3941-12		AR0-3941-13	
Cert + Vial, 9 mm, Screw, PP, 300 µL Clear, No Patch**	AR0-39S0-12-C		AR0-39S0-13-C	

51-Expansion glass. See page 19 for specialty vials product details. \*\*Made of Polypropylene.



Need help matching your current vials and caps to Verex? use online matching tool, www.phenomenex.com/Vial Match

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### Verex<sup>™</sup> Vials

### 12 x 32 mm, 9-425 (9 mm) Screw-Top Vials and Kits (cont'd)

### Certified PLUS (Cert+) Mass Spec Quality (MSQ) Caps for 9-425 Screw-Top Vials

- · HPLC and LC/MS tested and certified
- · For your most demanding analysis; high sensitive detectors
- · Locked-fit provides a positive physical septa lock into the cap



MS Quality. Constructed of virgin polymers, free of siloxanes and trace contaminants, these caps are the cleanest available from Phenomenex.

### **Ordering Information**



Description
Cert+ MSQ Cap (pre-assembled), 9 mm, w/ Locked-fit PTFE/Silicone septa, blue
Cert+ MSQ Cap (pre-assembled), 9 mm,
w/ Locked-fit PTFE/Silicone preSlit septa, blue

AR0-8972-13-M

1000/pk



### Certified PLUS (Cert+) Caps for 9-425 Screw-Top Vials

- Certified ultra-clean
- · High-grade, preconditioned raw materials
- · Finished product inspected and LC/MS tested



Description	1000/pk	Price
Cert+ Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone septa, blue	AR0-8952-13-C	
Cert+ Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone preSlit septa, blue	AR0-8972-13-C	
Cert+ Cap (one-piece), 9 mm PE w/ Starburst preSlit, natural	AR0-89P6-13-C	

□ Cap is one piece, constructed of ultra-pure, medical-grade polyethylene.

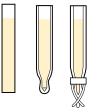


### Bonded-In Caps for 9-425 Screw-Top Vials

- · Bonded septa caps eliminate costly liner/septa fallout
- Prevents rework and wasted productivity with perfect-fit septa
- Saves instrument downtime

For a more economical alternative, Press-Fit Caps are available.

Description Price 1000/pk Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone septa, black AR0-8952-13-B Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone septa, blue Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone septa, green AR0-8953-13-B Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone septa, natural AR0-8956-13-B Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone septa, red AR0-8951-13-B AR0-8977-13-B Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone preSlit septa, black Cap (pre-assembled), 9 mm, w/ Bonded-in PTFE/Silicone preSlit septa, blue AR0-8972-13-B



### **Inserts for 9-425 Screw-Top Vials**

- For limited volume sampling in 2 mL sample vials
- Virtually no adsorption or pH effects
- Precisely centers and fits vial neck
- Offers maximum opening to sampling needle

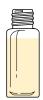
Description	500/pk	Price	1000/pk	Price
Insert, 6 mm Diameter, Flat Bottom, 450 µL	AR0-4610-52		_	_
Insert, 6 mm Diameter, Flat Bottom, 450 µL, Silanized	AR0-4615-52		_	_
Insert, 6 mm Diameter, Conical Bottom, 350 µL	_	_	AR0-4620-13	
Insert, 6 mm Diameter, Conical Bottom, w/ bottom spring, 300 µL	_	_	AR0-4621-13	
Insert, 6 mm Diameter, Conical Bottom, w/ bottom spring, 300 $\mu\text{L}$ , Silanized	_	_	AR0-4623-13	

Approximate useable volume indicated in µL

### 12 x 32 mm, 8-425 (8 mm) Screw-Top Vials

### 8-425 Screw-Top Vials, 2.0 mL

- Standard-neck vials for Varian and Shimadzu<sup>®</sup> autosamplers
- 33 Expansion clear glass (USP Type 1 borosilicate, Class A), 51A amber glass



#### **Ordering Information**

Description	1000/pk Pri	ce
Vial, 8 mm Screw, 2 mL Clear, No Patch	AR0-3800-13	
Vial, 8 mm Screw, 2 mL Amber, No Patch	AR0-3801-13	
Vial, 8 mm Screw, 2 mL Clear, w/ Patch	AR0-3810-13	
Vial, 8 mm Screw, 2 mL Amber, w/ Patch	AR0-3811-13	

### Caps / Closures for 8-425 Screw-Top Vials

- · Prevent rework and wasted productivity with perfect fit bonded-in septa
- · Fewer trace contaminants for higher sensitivity work



Description	1000/pk	Price
Cap (pre-assembled), 8-425, w/ Bonded-in PTFE/Silicone septa, black*	AR0-8857-13-B	
Cap (pre-assembled), 8-425, w/ Bonded-in PTFE/Silicone preSlit septa, black*	AR0-8877-13-B	
Cap (pre-assembled), 8-425, w/ PTFE/Silicone septa, black**	AR0-8857-13	
Cap (pre-assembled), 8-425, w/ PTFE/Silicone preSlit septa, black**	AR0-8877-13	
Cap (pre-assembled), 8-425, w/ PTFE/Silicone/PTFE septa, black**	AR0-8867-13	
Cap (pre-assembled), 8-425, w/ Open-top cap (w/o septa), black	AR0-8897-13	
Cap (pre-assembled), 8-425, w/ Open-top cap (w/o septa, flanged lip), black	AR0-88A7-13	
*-B = Bonded-in Septa **Press-Fit-Septa		

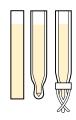
### Septa for 8-425 Screw Caps

- Preconditioned and tested
- For caps / closures without septa (AR0-8897-13 and AR0-88A7-13)

Description	1000/pk	Price
Septa, 8 mm Diameter, PTFE/Silicone 0.060 in	AR0-6853-13	
Septa, 8 mm Diameter, PTFE/Silicone/PTFE 0.060 in	AR0-6863-13	
Septa, 8 mm Diameter, PTFE 0.010 in	AR0-6817-13	

### Inserts for 8-425 Screw-Top Vials

- For limited volume sampling
- · Precisely centers and fits vial neck
- Transforms full capacity vials to micro sample vials



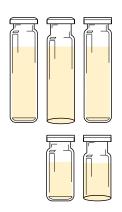
Description	500/pk	Price	1000/pk	Price
Insert, 5 mm Diameter, Flat Bottom, 200 µL	AR0-4510-52		AR0-4510-13	
Insert, 5 mm Diameter, Flat Bottom, 200 µL, deactivated (silanized)	AR0-4514-52		AR0-4514-13	
Insert, 5 mm Diameter, Conical Bottom, 100 µL	_	_	AR0-4520-13	
Insert, 5 mm Diameter, Conical Bottom, w/ bottom spring, 175 µL	_	_	AR0-4521-13	

### Verex<sup>™</sup> Vials

### **Headspace Vials**

### **Crimp-Top Headspace Vials**

- . 10 and 20 mL crimp neck, with rounded or flat bottom
- · Uniform glass thickness ensures even heating
- . Reliable quality, exceeds OEM specifications
- Lot traceable



#### **Ordering Information**

Description	1000/pk	Price
Headspace Vial, 23 x 46 mm, 10 mL Square Rim, Flat Bottom, Clear, No Patch	AR0-3220-13	
Headspace Vial, 23 x 46 mm, 10 mL Square Rim, Round Bottom, Clear, No Patch	AR0-3230-13	
Headspace Vial, 23 x 75 mm, 20 mL Beveled Rim, Flat Bottom, Clear, No Patch	AR0-3260-13	
Headspace Vial, 23 x 75 mm, 20 mL Beveled Rim, Flat Bottom., Clear, No Patch, Silanized	AR0-3263-13	
Headspace Vial, 23 x 75 mm, 20 mL Square Rim, Flat Bottom, Clear, No Patch	AR0-3290-13	
Headspace Vial, 23 x 75 mm, 20 mL Beveled Rim, Round Bottom, Clear, No Patch	AR0-3270-13	

### **Headspace Crimp Top Seals / Closures**

- · Variety of styles for any application
- · Crimp and decrimp with ease
- · Magnetic and pressure-release caps available



Description	1000/pk	Price
Seal, 20 mm Diameter, PTFE/Gray Butyl Rubber, magnetic cap	AR0-52C5-13	
Seal, 20 mm Diameter, PTFE/Gray Butyl Rubber, Pressure Release, silver	AR0-52A0-13	
Seal, 20 mm Diameter, PTFE/Butyl Rubber Pharmafix Molded Septum, silver	AR0-52D0-13	
Seal, 20 mm Diameter, PTFE/Butyl Rubber Pressure Release, Pharmafix Molded Septum, silver	AR0-52B0-13	
Seal, 20 mm Diameter, PTFE/Silicone magnetic cap	AR0-5255-13	
Seal, 20 mm Diameter, PTFE/Silicone silver	AR0-5250-13	
Seal, 20 mm Diameter, PTFE/Silicone Pressure Release, silver	AR0-5220-13	

**Autosampler Compatibility** Flat Bottom: HP / Agilent, Carlo Erba, Shimadzu Round Bottom: PerkinElmer, Tekmar, LEAP Technologies, Varian



### VOA / ASE Assembled Vial Kits and Storage Vial Kits

- . Convenient assembled kit includes vials with matching seals / closures
- · Clear or amber, with open top or closed caps
- PTFE (Teflon®) faced 0.125 in. silicone septa or PTFE with foam urethane backing
- · Lot numbered for traceability





Description	100/pk	Price	1000/pk	Price
Vial Kit, Storage, 20 mL screw, Clear w/ Caps 24-400 white PTFE/Foam Urethane liner, closed top	AR0-9559-12		AR0-9559-13	
Vial Kit, Storage, 20 mL screw, Amber w/ Caps 24-400 white PTFE/Foam Urethane liner, closed top	AR0-9551-12		AR0-9551-13	
Vial Kit, Storage, 40mL screw, Clear w/ Caps 24-400 white PTFE/Foam Urethane, closed top	AR0-9542-12		AR0-9542-13	
Vial Kit, Storage, 40mL screw, Amber w/Caps 24-400 white PTFE/Foam Urethane, closed top	AR0-9543-12		AR0-9543-13	
Vial Kit, VOA/ASE, 40mL screw, Clear w/Caps 24-400 white PTFE/Silicone, open top	AR0-9540-12		AR0-9540-13	
Vial Kit, VOA/ASE, 40mL screw, Amber w/ Caps 24-400 white PTFE/Silicone, open top	AR0-9541-12		AR0-9541-13	
Vial Kit, VOA/ASE, 20 mL screw, Clear w/ Caps 24-400 white PTFE/Silicone (assembled)*, open top	AR0-9531-12-E		AR0-9531-13-E	

\* EPA certified Class 100 vials, caps, and septa are assembled, without processing. ASE = Dionex Accelerated Solvent Extractor for pesticide analyses.

Learn More. Visit Phenomenex. com/Verex for additional product selection and detailed information

### **Filtration**

### **Syringe Filters**

Phenex™

### For sample and solvent filtration prior to chromatography

- Rapid filtration of HPLC and GC samples prior to analysis
- Particulate, PVC, and extractable-free filters
- Less system downtime
- · More consistent, reproducible results
- · Increased column lifetime

### **Syringe Filter Selection Guide**

1. Choose filter diameter based on sample volume

4 mm Diameter	15 mm Diameter	25 - 28 mm Diameter
≤ 2 mL Sample Volume	2 - 10 mL Sample Volume	10 - 100 mL Sample Volume



#### **Phenex Offers:**

- · Broad chemical compatibility
- Minimized extractables
- Excellent flow rate
- · High total throughput
- · Certified quality
- 100 % integrity tested
- · Low hold-up volume
- Low protein adsorption
- Bi-directional use

2. Choose a pore size based on the nature of your sample and chromatographic method

Sample Description	Recommended Filter Pore Size
General aqueous or mixed organic samples prior to HPLC analysis with column packed with $>$ 3 $\mu$ m particles. General clarification of GC, SFC, CE, and GPC samples.	0.45 μm
Viscous samples or samples containing high levels of particulate matter.	
General aqueous or mixed organic samples prior to HPLC analysis with columns packed with $\leq$ 3 $\mu m$ particles. Removal of fine particulate matter prior to GC, SFC, CE, and GPC samples.	0.20 μm
Gas samples prior to GC. Liquid samples prior to UHPLC or LC/MS. Other particulate-sensitive methods.	
Viscous samples such as serum, plasma or other biological matrices. Solutions with high particulate load such as some environmental or food and beverage applications.	Glass Fiber Filter with 0.45 µm filter

### 3. Choose a filter membrane according to the characteristics of your sample and filtering objective

Membrane Type	Recommended Uses
RC (Regenerated Cellulose)	Hydrophilic Regenerated Cellulose filter membranes are compatible with a very broad range of aqueous and mixed-organic solutions, making them one of the most universal filter materials used prior to chromatography. Phenex-RC filters also exhibit fast-flow and ultra-low protein and non-specific binding characteristics. Due to the beneficial material characteristics, Phenex-RC membranes are broadly recommended as an excellent general purpose/high-performance sample filter for most applications.
<b>PTFE, Teflon®</b> (Polytetrafluoroethylene)	PTFE is an inherently hydrophobic membrane excellent for filtration of organic-based, highly acidic or basic samples and solvents. Widely used in chromatography, it is especially well suited for the clarification of non-aqueous samples. Although this membrane is hydrophobic, it can be made hydrophilic by wetting the membrane with alcohol and then flushing with deionized water.
PES (Polyethersulfone)	Polyethersulfone membranes exhibit very fast-flow and ultra-low protein binding characteristics and are ideally suited for use in many life science clarification applications. Phenex-PES membranes typically offer better chemical resistance than cellulose acetate and are broadly recommended for filtering critical biological samples, tissue culture media, additives and buffers.
NY (Nylon)	Nylon has inherent hydrophilic characteristics and works well for filtration of many aqueous and mixed-organic samples. For applications that require low protein or non-specific binding characteristics, Phenomenex recommends Phenex-RC (Regenerated Cellulose) filters.
CA (Cellulose Acetate)	Cellulose Acetate membranes exhibit ultra-low protein binding and are broadly used in the filtration of biological samples. In combination with a glass pre-filter (Phenex-GF/CA), this membrane is excellent for filtration of tissue culture media, general biological sample filtration and clarification.
GF (Glass Fiber)	Phenex-GF (Glass Fiber) filters are made of inert borosilicate glass and have a nominal 1.2 µm pore size. They are commonly used with highly viscous samples or samples that contain high concentrations of particulate matter (e.g., food analysis, biological samples, soil samples, fermentation broth samples, removal of yeasts, molds, etc.). Glass Fiber filters can be used alone or in series with other Phenex filter membranes such as the 0.45 µm pore Phenex-RC filter to reduce clogging of the membrane and optimize flow.

Phenex is a trademark of Phenomenex, Inc.

### **Filtration**



### **Syringe Filters** (cont'd)

**Syringe Filter Applications and Recommended Membranes** 

- J go :							
Application / Sample	Recommended Filter	First Alternative	Second Alternative				
HPLC and GC Sample Prep	RC	PTFE	PES				
Aggressive or Pure Organic Solvents	PTFE	RC	NY				
Protein Analysis / Biological Samples	PES	RC	GF/CA				
High Particulate Loads	GF/NY	GF + RC	PTFE				
Environmental Methods	GF/NY	RC	PTFE				
Food and Beverage	GF/NY	RC	PTFE				
Clinical / Toxicology	RC	PES	NY				
Dissolution Testing	GF/NY	RC	PTFE				
Ion Chromatography	RC	PES	PTFE				
Trace Metals (ICP-MS, AAS)	RC	PES	NY				
Capillary Electrophoresis (CE)	RC	PES	NY				
Tissue Cultures, Media, Buffers	GF/CA	PES	RC				



If Phenex Syringe Filters do not perform as well or better than your current syringe filter product of similar membrane, diameter and pore size, return the product with comparative data within 45 days for a FULL REFUND.

Tip: Try a Sample Pack! Request yours today by phone or visit www.phenomenex.com/sample



For high load and particulate-laden samples you may consider placing a Glass Fiber (GF) pre-filter in line with the membrane syringe filter of your choice or choose a filter with an integrated glass fiber membrane.

rissue Cultures, Media, Bui	IEIS	GF/GA	PE	integrated glass fiber membra		r membrane.			
Phenex Syringe Filters		4 mm Diameter for ≤ 2 mL sample volumes			mm Diameter mL sample vol	umes		8 mm Diameter O mL sample vol	
Membrane Type/Size	Part No.	Unit	Price	Part No.	Unit	Price	Part No.	Unit	Price
0.20 μm									
Phenex-RC	AF0-3203-12	100/pk		AF0-2203-12	100/pk		AF0-8203-12 <sup>5</sup>	100/pk	
(Regenerated Cellulose)	AF0-3203-52	500/pk		AF0-2203-52	500/pk		AF0-8203-52 <sup>5</sup>	500/pk	
Phenex-PES <sup>3</sup>	_	_		<u> </u>	_	_	AF0-8208-12 <sup>7</sup>	100/pk	
(Polyethersulfone)	_	_		_	_	_	AF0-8208-52 7	500/pk	
Phenex-PTFE <sup>6</sup>	AF0-3202-12	100/pk		AF0-2202-12	100/pk		AF0-1202-12	100/pk	
(Polytetrafluoroethylene)	AF0-3202-52	500/pk		AF0-2202-52	500/pk		AF0-1202-52	500/pk	
Phenex-NY	AF3-3207-12	100/pk		AF0-2207-12	100/pk		AF0-1207-12	100/pk	
(Nylon)	AF3-3207-52	500/pk		AF0-2207-52	500/pk		AF0-1207-52	500/pk	
Phenex-GF/NY				nert borosilicate glas			AF0-1A47-12	100/pk	
(Glass Fiber/Nylon)		ofuels, and diss	olution sample	ele-laden samples, si es. Use less hand pro c.			AF0-1A47-52	500/pk	
Phenex-GF/CA <sup>2,3,4</sup>				nert borosilicate glas			AF0-8A09-12 <sup>7</sup>	100/pk	
(Glass Fiber/Cellulose Acetate)	membrane. Excel and clarification.			ture media, general l	oiological sample	e filtration	AF0-8A09-52 <sup>7</sup>	500/pk	
0.45 μm									
Phenex-RC	AF0-3103-12	100/pk		AF0-2103-12	100/pk		AF0-8103-12 <sup>5</sup>	100/pk	
(Regenerated Cellulose)	AF0-3103-52	500/pk		AF0-2103-52	500/pk		AF0-8103-52 <sup>5</sup>	500/pk	
Phenex-PES <sup>3</sup>	_	_		AF2-5108-12 <sup>1</sup>	100/pk		AF0-8108-12 <sup>7</sup>	100/pk	
(Polyethersulfone)	_	_		-	_	_	AF0-8108-52 <sup>7</sup>	500/pk	
Phenex-PTFE <sup>6</sup>	AF0-3102-12	100/pk		AF0-2102-12	100/pk		AF0-1102-12	100/pk	
(Polytetrafluoroethylene)	AF0-3102-52	500/pk		AF0-2102-52	500/pk		AF0-1102-52	500/pk	
Phenex-NY	AF3-3107-12	100/pk		AF0-2107-12	100/pk		AF0-1107-12	100/pk	
(Nylon)	AF3-3107-52	500/pk		AF0-2107-52	500/pk		AF0-1107-52	500/pk	
Phenex-GF/NY				nert borosilicate glas			AF0-1B47-12	100/pk	
(Glass Fiber/Nylon)		ofuels, and disse	olution sample	ele-laden samples, si es. Use less hand pr c.			AF0-1B47-52	500/pk	
Phenex-GF/CA <sup>2,3,4</sup>	An integrated syri	nge filter unit co	ontaining an i	nert borosilicate glas			AF0-8B09-12 <sup>7</sup>	100/pk	
(Glass Fiber/Cellulose Acetate)	membrane. Excellent for filtration of tissue culture media, general biological sample filtration and clarification. Outlet connection is luer lock.				e filtration	AF0-8B09-52 <sup>7</sup>	500/pk		
1.20 µm									
Phenex-GF <sup>2,3</sup>							AF0-8515-12 <sup>7</sup>	100/pk	
(Glass Fiber)		Prefiltration of heavily contaminated or highly viscous samples. When used in-series preceding a membrane filter, clogging of the membrane filter is prevented and sample clean up is optimized. Outlet connection is luer lock.						500/pk	



- 1. Larger quantity purchases at significant savings are available. 2. Glass fiber filters are 28 mm diameter and made of borosilicate. They will remove 90 % of all particles >1.2  $\mu$ m.
- 35. Housing material is methacrylate butadiene styrene (MBS) polymerisate. Also known as Cyrolite<sup>®</sup>.

  4. Cellulose acetate is surfactant-free.

  5. 26 mm diameter.

- Note that the second of t local Phenomenex technical consultant or distributor for availability or assistance.



Above syringe filters are non-sterile. Housing is made of medical-grade polypropylene (PP), and offer luer lock inlet/slip outlet connections, unless otherwise indicated.

### GC Columns Check Standards

### **Test the Performance of GC Columns**

- · Convenient way to check column performance
- Essential tool for GC troubleshooting
- · Affordable and easy to use
- Suitable for Phenomenex Zebron<sup>™</sup> and equivalent brands
- Sealed in 2 mL glass ampules-prevent evaporation and increase shelf life
- All test mixes supplied with Certificate of Analysis

ID 15840	Zebron ZB-1ms	
□	Part No.: AG0-7805	Price:
App	500 µg/mL each in acetone: 1. Decane 2. 2-Ethylhexanoic Acid 3. 4-Chlorophenol 4. Naphthalene	5. Tridecane 6. 1-Undecanol 7. Dicyclohexylamine 8. Pentadecane

ID 10714	Zebron ZB-1, ZB-5, ZB-1HT, and ZB-5HT			
	Part No.: AG0-5155	Price:		
5160, App	250 µg/mL each in hexane:			
90,	<ol> <li>Undecane</li> </ol>	4. 1-Undecanol		
21	<ol><li>4-Chlorophenol</li></ol>	<ol><li>Dicyclohexylamine</li></ol>		
O d	<ol><li>Tridecane</li></ol>	<ol><li>Pentadecane</li></ol>		

ID 14836	Guardian	Integrated Guard / 2	ZB-5	
	Part No.:	AG0-7549	Price	):
App	250 µg/mL	each in acetone:		
-	1.	Decane	6.	1-Methylnaphthalene
	2.	2-Ethylhexanoic Acid	7.	1-Undecanol
	3.	1,6-Hexanediol	8.	Tetradecane
	4.	4-Chlorophenol	9.	Dicyclohexylamine
	5.	Tridecane		

ID 16439	Zebron ZB-5MSi	
	Part No.: AG0-8362	Price:
App	250 µg/mL each in acetone: 1. Decane 2. Methyl Caprylate 3. 1,6-Hexanediol 4. 4-Chlorophenol 5. Tridecane	6. 1,8-Octanediol 7. Dihexylamine 8. 1-Undecanol 9. Dicyclohexylamine 10. Pentadecane

3					
ID 14973	Zebron ZB-5ms, ZB-XLB, and ZB-XLB-HT				
D 1	Part No.:	AG0-7578	Price	<b>)</b> :	
Арр	250 μg/mL	each in acetone:			
	1.	Decane		1-Methylnaphthalene	
		2-Ethylhexanoic Acid		1-Undecanol	
	3.	1,6-Hexanediol	8.	Tetradecane	
	4.	4-Chlorophenol	9.	Dicyclohexylamine	
	5.	Tridecane	10.	Pentadecane	

5161	Zebron ZB-35, ZB-35HT, ZB-1701, and ZB-1701P			
⊒d	Part No.:	AG0-5156	Price	):
5162, App ID	250 µg/mL	each in hexane:		
162	1.	Undecane	5.	1-Undecanol
5	2.	2,4-Dimethylphenol	6.	1-Methylnaphthalene
App ID (	3.	2,6-Dimethylaniline	7.	Hexadecane
Ą	4.	Tetradecane		



Zebron ZB-50	
Part No.: AGO-5157	Price:
250 μg/mL each in hexane:	
<ol> <li>Undecane</li> </ol>	<ol><li>1-Undecanol</li></ol>
<ol><li>Tridecane</li></ol>	6. 1-Methylnaphthalene
<ol><li>2,4-Dimethylphenol</li></ol>	<ol><li>Hexadecane</li></ol>
4. 2,6-Dimethylaniline	
	Part No.: AG0-5157 250 μg/mL each in hexane: 1. Undecane 2. Tridecane 3. 2,4-Dimethylphenol

5165	Zebron ZB-624	
App ID	Part No.: AG0-5159	Price:
Ap	1000 µg/mL each in methanol: 1. 1,2-Dichloropropane 2. Octane 3. Tetrachloroethylene	Chlorobenzene     Nonane

ID 16214	Zebron ZB-WAX <i>pus</i> **				
	Part No.: AGO-7869	Price:			
Арр	250 µg/mL each in hexane:				
-	1. 2-Octanone	<ol><li>Methyl decanoate</li></ol>	11. Methyl dodecanoate		
	<ol><li>Tetradecane</li></ol>	<ol><li>Heptadecane</li></ol>	12. 2,6-Dimethylaniline		
	<ol><li>Pentadecane</li></ol>	<ol><li>Methyl undecanoate</li></ol>	13. Nonadecane		
	4. 1-Octanol	9. 1-Decanol	14. 2,6-Dimethylphenol		
	<ol><li>Hexadecane</li></ol>	10. Octadecane	,,		

5164	Zebron ZI	B-WAX and ZB-FFAP		
요	Part No.:	AG0-5158	Price	<b>)</b> :
App ID 14326, App ID	250 µg/mL	each in hexane:		
326	1.	2-Octanone	6.	1-Decanol
4	2.	Tetradecane	7.	Methyl dodecanoate
_	3.	1-Octanol	8.	2,6-Dimethylaniline
Αpi	4.	Methyl decanoate	9.	2,6-Dimethylphenol
	5.	Methyl undecanoate		

4pp ID 18461	Zebron ZB-Drug-1	
0	Part No.: AG0-8431	Price:
Арр	250 μg/mL each in acetone:	
	<ol> <li>Dodecane</li> </ol>	<ol><li>1-Undecanol</li></ol>
	<ol><li>Tridecane</li></ol>	<ol><li>1-Methylnaphthalene</li></ol>
	<ol><li>4-Chlorophenol</li></ol>	<ol><li>Dicyclohexylamine</li></ol>
	<ol> <li>Tetradecane</li> </ol>	8. Hexadecane

Price: : 4. 1-Undecanol 5. Dicyclohexylamine 6. Pentadecane

5158	Grob Test Mixture					
=	(For most GC capillary columns)					
App	(For most GC capillary columns) Part No.: AG0-5154 Price:					
	400 µg/mL each in methylene	chloride:				
	1. 2,3-Butanediol	5. 1-Nonanal	9. Methyl decanoate			
	<ol><li>Decane</li></ol>	<ol><li>2-Ethylhexanoic acid</li></ol>	10. Methyl undecanoate			
	<ol><li>Undecane</li></ol>	<ol><li>2,6-Dimethylphenol</li></ol>	11. Dicyclohexylamine			
	4. 1-Octanol	<ol><li>2,6-Dimethylaniline</li></ol>	12. Methyl dodecanoate			



Test mix components are shown in order of elution

### Gas Trap and Purifiers

### **Indicating Glass Moisture Traps**

- Reduces noise for high-sensitivity GC detectors: GC/MS, MSD, ECD, Hall EC, Ion Trap
- Heavy-wall borosilicate glass tube prevents oxygen and water infusion

### **Technical Specifications**

Molecular sieve 13X	
yes, 4A indicating molecular sieve	
100 psi (690 kPa)	
≤10 ppb water	
100 cc unit: 10 standard "A" cylinders with up to 300 ppm water	
1/8 or 1/4 in.	2
	yes, 4A indicating molecular sieve 100 psi (690 kPa) ≤10 ppb water 100 cc unit: 10 standard "A" cylinders with up to 300 ppm water

Indicating	Glass Moisture Traps		
Part No.	Description	Unit	Price
100 cc			
AG0-4766	Glass Indicating Moisture Trap,1/8 in. fittings	ea	
250 сс			
AG0-4768	Large Glass Indicating Moisture Trap, 1/8 in. fittings	ea	
AG0-4769	Large Glass Indicating Moisture Trap, $^{1}\!/_{4}$ in. fittings	ea	

### **Indicating Oxygen Traps**

- · Improves analytical sensitivity
- · Reduces oxygen to less than 1 ppb
- · Color indicator warms of saturation

#### Technical Specifications

1001 II IIOai	opcomoations	
Packing:	Proprietary	
Indicator:	yes	
Max pressure:	50 psi (345 kPa)	
Efficiency:	≤1 ppb oxygen	
Fittings:	<sup>1</sup> / <sub>8</sub> or <sup>1</sup> / <sub>4</sub> in.	
Frit:	40 µm stainless steel	3 1

Indicating Oxygen Traps			
Part No.	Description	Unit	Price
50 cc			
AG0-4774	Indicating Oxygen Trap,1/8 in. fittings	ea	
AG0-4775	Indicating Oxygen Trap,1/4 in. fittings	ea	
150 cc			
AG0-4776	Large Indicating Oxygen Trap,1/8 in. fittings	ea	
AG0-4777	Large Indicating Oxygen Trap,1/4 in. fittings	ea	

### **LabClear OxiClear™ Gas Purifiers**

- High performance, high capacity purifier
- Removes oxygen and trace amounts of water and organics from carrier gases
- Popular, affordable and disposable



### **Hydrocarbon Traps**

- · Improves baselines and analytical sensitivity
- Integral 40 µm frits prevent particle contamination
- Removes trace organics from carrier gases, air and hydrogen

### Technical Specifications

recrimical c	2pecifications	
Packing:	Impregnated carbon filter media	
Indicator:	no	
Max pressure:	250 psi (1724 kPa)	
Efficiency:	Excellent to none (call for specific compound ratings)	
Fittings:	<sup>1</sup> / <sub>8</sub> or <sup>1</sup> / <sub>4</sub> in.	
Purge Gas:	Helium, ultra-high purity	2

Hydrocarb	on Traps		
Part No.	Description	Unit	Price
100 cc			
AG0-4770	Hydrocarbon Trap, capillary grade, 1/8 in. fittings	ea	
AG0-4771	Hydrocarbon Trap, capillary grade, 1/4 in. fittings	ea	
200 сс			
AG0-4772	Hydrocarbon Trap, 1/8 in. fittings	ea	
AG0-4773	Hydrocarbon Trap, 1/4 in. fittings	ea	
AG0-5618	Hydrocarbon Trap Refill, 1 pint, 2 recharges	ea	

# Combination Oxygen / Moisture Traps

- . Improves analytical sensitivity of GC/MS, MSD, ECD
- Reduces oxygen/water to less than 15 ppb
- Pre-purged with ultra-high purity helium for rapid equilibration/stabilization

### **Technical Specifications**

Packing:	Proprietary	
Indicator:	no	
Max pressure:	250 psi (1724 kPa)	
Efficiency:	≤15 ppb oxygen and water	00
Capacity	2 g water	-
Fittings:	<sup>1</sup> / <sub>8</sub> or <sup>1</sup> / <sub>4</sub> in.	

Combination Oxygen/Moisture Traps			
Part No.	Description	Unit	Price
AG0-4778	Combo Oxygen / Moisture Trap,1/8 in. fittings	ea	
AG0-4779	Combo Oxygen / Moisture Trap, 1/4 in. fittings	ea	

### **Technical Specifications**

Packing:	Proprietary
Indicator:	no
Max pressure:	250 psi (1724 kPa)
Max recommended flow:	3 mL/min @ 35 psi
Efficiency:	≤5 ppb oxygen when incoming oxygen concentration is 15 ppm or less
Capacity	≥1200 cubic ft. standard grade gas
Fittings:	<sup>1</sup> / <sub>8</sub> or <sup>1</sup> / <sub>4</sub> in.

OxiClear Gas Purifiers				
Part No.	Description	Unit	Price	
5½ x 2 in.				
AG0-4792	OxiClear Disposable Gas Purifier,1/8 in. fittings	ea		
AG0-4791	OxiClear Disposable Gas Purifier,1/4 in. fittings	ea		



Contact Phenomenex or your local Phenomenex distributor for additional GC products and applications.

### GC Accessories

### **Capillary Unions** and Splitters

- · Connect fused silica capillary tubing of the same or different diameter, from 0.10 to 0.53 mm ID
- · Patented laser-formed linear taper
- · Provides leak-free seal without tools, glue or fittings
- · Stays sealed even at high temperatures and pressures
- · Laser-cut smooth ends prevent column damage during insertion



#### Use the Union for:

- Connecting a guard column to an analytical column
- Connecting columns of different selectivities
- Connecting transfer lines to e.g., mass spec
- · Repairing a broken column

### Use the Y-connector (splitter)

- · Splitting a sample onto two columns (perform confirmational analysis in a single injection)
- · Splitting the column eluent to two detectors

#### **Ordering Information**

Capillary Unions and Splitters			
Part No.	Description	Unit	Price
AG0-4716	Universal Capillary Column Union, Borosilicate	5/pk	
AG0-4717	Universal Capillary Column Y-connector, Borosilicate	ea	



Contact Phenomenex or your local Phenomenex distributor for additional GC products and applications.

### **Polyimide Resins**

- · Permanently connects unions and splitters to capillary tubing
- · Prevents connections from dislodging due to vibration or shock



#### **Ordering Information**

Polyimide Resins			
Part No.	Description	Unit	Price
AG0-5722	Polyimide Resin, 350 °C, 0.5 mL	ea	
AG0-8514	High Temperature, 400 °C, Polymide Resin,	ea	



For GC Retention Gaps and Guard Column Kits, see p. 62

### **Sealing O-Rings**

- Thermally stable
- Graphite suitable for GC/MS



#### **Ordering Information**

Part No.	Description	Similar to Mfr. No.*	Unit	Price
Sealing Rings for Agilent Inlet Liners				
AG0-7326	Sealing ring, Viton Fluorocarbon, rated to $<$ 300 °C	5180-4182	10/pk	
AG0-7327	Sealing ring, graphite, rated to 450 °C	5180-4168	10/pk	
Sealing Rings for PerkinElmer Inlet Liners				
AG0-8674	Sealing ring for 6.2 mm OD inlet liners	N9302783	10/pk	
Sealing Rings for Shimadzu Model 2010 Inlet Liners				
AG0-8675	Sealing ring, Viton	036- 11203-84	10/pk	



\*Similar to but not always an exact equivalent to the original manufacturer's product.

### Terms and Conditions

Subject to Phenomenex Standard Terms and Conditions which may be viewed at http://www.phenomenex.com/TermsAndConditions.

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Cool-Lock Nut is patented by Phenomenex, U.S. Patent No. 8,062,516.

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### GC Accessories

## Ferrule Remover Tool Kit

- Simple and convenient tools effectively remove stuck ferrules from fittings
- Special spiral-cut rachet design slides in and grabs ferrule tight
- Includes two tools for removing capillary ferrules from 0.4 to 0.8 mm ID



#### **Ordering Information**

Ferrule Remover Tool Kit			
Part No.	Description	Unit	Price
AD0-4725	GC Ferrule Remover Tool Kit	ea	

### **Ceramic Scoring Wafers**

 High quality ceramic cutting tool for fused silica capillary columns



#### **Ordering Information**

Ceramic Scoring Wafers			
Part No.	Description	Unit	Price
AG0-4718	Ceramic Scoring Wafer	2/pk	

# Flame Detector Jet Cleaning Kit

- For routine maintenance of Flame Ionization Detectors
- Includes:
  - Set of 3 jet reamers 0.008, 0.08 and 0.02 in.
  - 1 Stainless steel and 1 brass brush
  - 1 Dual-ended pin vise for holding reamers and brushes
- Use after the flame jet has been taken apart or while installed in the GC



#### **Ordering Information**

Flame Detector Jet Cleaning Kit			
Part No.	Description	Unit	Price
AD0-4723	GC Flame Detector Jet Cleaning Kit	ea	

# Injection Port Cleaning Kit

- Includes 4 stainless steel brush sizes 1/8, 3/16, 1/4 and 3/8 in.
- Also includes a scraper-pick combo for hard septum residues and septum removal
- Easy to use with twisted wire handles and a convenient wire ring to keep parts together



#### **Ordering Information**

Injection Port Cleaning Kit			
Part No.	Description	Unit	Price
AD0-4724	GC Injection Port Cleaning Kit	ea	



Contact Phenomenex or your local Phenomenex distributor for additional GC products and applications.

#### Australia

- t: 02-9428-6444
- f: 02-9428-6445 auinfo@phenomenex.com

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### anfrage@phenomenex.com

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