

# Vials & Syringes





## Vials & Syringes

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# Vials



Top: Steve Kreiser, Director of Quality

Bottom: Brendan Conway, Steve Kreiser, AJ Saclyn,  
John Lidgett, Jason Martin, Lori McGarry—  
Derivatization Reagents Planning Meeting

Manufacturer	Instrument/ Model #	11mm Crimp-Top (p. 264-265)	9mm Short-Cap, Screw-Thread (p. 269)	8mm Crimp-Top, 8 x 30mm (p. 267)	Headspace (p. 268)	8mm Screw-Thread (p. 270-271)	10mm Screw-Thread (p. 271)	WTSP 48 Style (p. 272-273)	WTSP 96 Style (p. 273)
A.I.M.	CPS -100, 200	X				X			
A.I.	42 vial tray	X							
A.I.	60 vial tray			X					
A.I.	Headspace				X				
Agilent	1042, 1050, 1080, 1082, 1084, 1090, 1100, 5890, 6850, 6890, 7670A, 7671A, 7672, 7673A/B, 7683, 7890, 8042	X	X						
Agilent	Headspace				X				
Alcott	738	X				X	X		
Alltech	570	X				X	X		
Alltech	580 (standard tray)	X							
Altex		X					X		
AMS	42	X							
Antek	736 Unisampler, 738	X				X	X		
ASC		X				X	X		
Beckman	501, 502, 507					X	X		
Bruker	LC 51							X	
Carlo Erba/Fisons	42 vial tray	X							
Carlo Erba/Fisons	60 vial tray, AS 105 tray			X					
Carlo Erba/Fisons	AS 800	X	X			X			
Carlo Erba/Fisons	8000					X			
Carlo Erba	HS 250, HS 500, HS 800				X				
Carnegie	CMA-250/200	X							
Chrompack	CP 9000 GC Series	X							
CTC	CTC A105S	X							
CTC	Headspace				X				
Cueni	Headspace				X				
Dani	ALS 39.80, 86.80	X	X			X			
Dani	HSS 39.50, HSS 86.50, SPT 37.50				X				
Delsi		X							
Dynatech	42 vial tray	X	X			X			
Dynatech	60 vial tray			X					
Dynatech	LC2000		X						
Fisons	42 vial tray	X							
Fisons	60 vial tray			X					
GBC		X							
Gerstel		X							
Gilson	231 XL, 232 XL, 233 XL, Aspec XL	X	X			X			
Gilson	Asted XL	X				X			
Gynkotek	Gina, others	X				X			
Hitachi	AS-2000, AS-6000	X	X						
Hitachi	S6551					X			
Hitachi	L-7200					X	X	X	
Hitachi	L-7250					X	X	X	
IBM		X				X			
ICI	other	X				X			
Infochroma		X				X			
Jasco	851-AS, AS-950	X				X			
Jasco	LC800 & 900 series					X			
Kipp		X				X			
Kontron	360	X				X			
Kontron	460					X			
LDC	Marathon, Promis	X	X						
LDC	other	X							
LDC	713			X					
LDC	all except 713					X			
L.E.A.P. Technologies	CTC A200S	X	X			X	X		
L.E.A.P. Technologies	CTC A105S	X							

Manufacturer	Instrument/ Model #	11mm Crimp-Top (p. 264-265)	9mm Short-Cap, Screw-Thread (p. 269)	8mm Crimp-Top, 8 x 30mm (p. 267)	Headspace (p. 268)	8mm Screw-Thread (p. 270-271)	10mm Screw-Thread (p. 271)	WTSP 48 Style (p. 272-273)	WTSP 96 Style (p. 273)
L.E.A.P. Technologies	HS 500				X				
Magnus Scientific		X				X			
PerkinElmer	AI-1	X	X	X					
PerkinElmer	ISS 100, LC 600 42 vial tray	X	X						
PerkinElmer	ISS 200	X	X		X				
PerkinElmer	Integral 4000	X			X				
PerkinElmer	Autosystem	X			X	X			
PerkinElmer	420/B, 4900	X				X			
PerkinElmer	F40, F45, HS 6, HS 40				X				
PerkinElmer	LC 600 (60), AS100/B, 300, 8300, AS2000, LC 30, 2000, B 2000			X					
Pharmacia LKB	2157-010	X				X			
Precision Sampling	GC111, GC 311, LC 241-60	X		X		X			
Phillips	4247, 4710	X				X			
Phillips	LC-XP	X				X		X	
Polymer-Labs	GPC 110/210	X							
Pye	LCXP	X							
S.G.E.	M280D	X				X			
Sedere		X				X			
Shimadzu	SIL-10A, 10Ai, 10Axl	X	X			X	X		
Shimadzu	AOC-8B/9, SIL-6A, SIL-6B, -9A, -8A					X			
Shimadzu	AOC-14/1400, AOC-17					X		X	
Shimadzu	SIL-2AS							X	
Shimadzu	HSS-2B				X				
Siemens	AS 32, AS 200	X							
Sigma	2000			X					
Spark Holland	SPH 125	X	X						
Spark Holland	Marathon, Promis	X	X			X			
Spark Holland	Triathlon, Midas	X				X			
Spectra-Physics	8875, 8880	X	X			X			
Talbot		X				X			
Tekmar	7000, 7000/7050				X				
Thermo Scientific	TRACE GC 2000, AS2000	X	X	X					
TOA	ICA5450					X			
TosoHaas	TSK-6080, AS-8010, AS-8020	X				X		X	
Tosca 1		X							
Tracor	770, 771, 772	X							
TSP	8875, 8880, AS 100/1000, AS 300/3000	X				X			
Unicam	4710	X							
Unicam	4700LC, 4247	X				X			
Unicam	LC-XP	X				X		X	
United Technologies		X				X			
Varian/Rainin	Dynamax AI-1A, AI-200, Dynamax AI-3	X							
Varian/Rainin	DynamaxAI-3AI-1A, AI-2W					X			
Varian	8100/8200	X	X			X	X		
Varian	Marathon	X	X			X			
Varian	9100/9090/9095	X				X			
Varian	8035, 8000 series, 8055, 8085, 3800 GC					X			
Varian	Genesis				X				
Waters	Alliance 2690	X	X			X	X		
Waters	710, 717+							X	X
Waters	48-pos. M700							X	
Waters	96-pos. M700								X

# Vial Size Quick Reference Chart

All vials pictured are actual size, with description, Restek catalog number, and page number for quick reference.

## WISP™ Vials

4.0mL Screw-Thread Step Vial



24654, 24655  
24656, 24657  
Page 273

4.0mL Clear Crimp-Top



24658, 24659  
Page 272

700µL Limited Volume



24680,  
24681  
Page 273

96 Style



24662, 24663,  
24664, 24665,  
24678, 24679  
Page 273

## Headspace Vials

10mL Clear Flat Bottom



24683,  
24684  
Page 268

10mL Clear Rounded Bottom



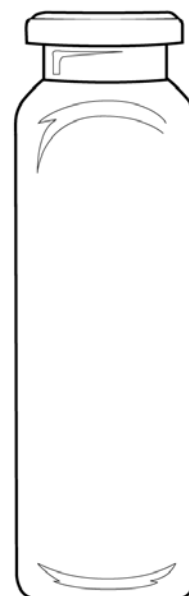
21164,  
21165  
Page 268

20mL Clear Flat Bottom



24685,  
24686  
Page 268

20mL Clear Rounded Bottom



21162,  
21163  
Page 268

All vials pictured are actual size, with description, Restek catalog number, and page number for quick reference.

## Limited Volume Inserts

250µL Big Mouth Insert



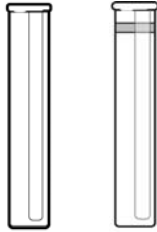
24516,  
21779  
Pages 265, 272

250µL Glass Flat Bottom



24510  
Page 271

350µL Glass Flat Bottom Inserts  
w/ID Ring



21780, 24692,  
24517, 24693  
Pages 265, 272

500µL Glass WISP™ Flat Bottom



21787, 21788  
Page 273

100µL Glass or Polypropylene w/ Polypropylene Bottom Spring



24508, 21775  
24512  
Page 271

250µL Glass or Polypropylene w/ Bottom Spring



21776, 21777  
Pages 265, 272, 273  
24518  
Page 265

## 8mm Screw-Thread Vials

2.0mL Clear or Amber w/ White Graduated Marking Spot



24619, 24620,  
24621, 24622  
Page 270

## 8mm Crimp-Top Sample Vials

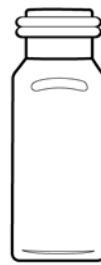
0.8mL Clear Flat Bottom



24695,  
24696  
Page 267

## 9mm Short-Cap Vials

2.0mL Clear or Amber w/White Graduated Marking Spot



21154\*, 21155\*  
\*w/out white graduated marking spot  
21140, 21141  
21142, 21143  
Page 269

## 10mm Screw-Thread Vials

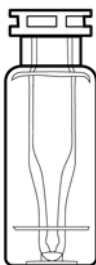
2.0mL Big Mouth Step™ Clear or Amber



24626, 24627,  
24628, 24629  
Page 271

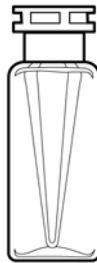
## 11mm Crimp-Top Vials

Limited Volume 100µL Glass Insert, Clear Plastic Vial



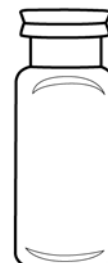
24653  
Page 265

Limited Volume 100µL Polypropylene



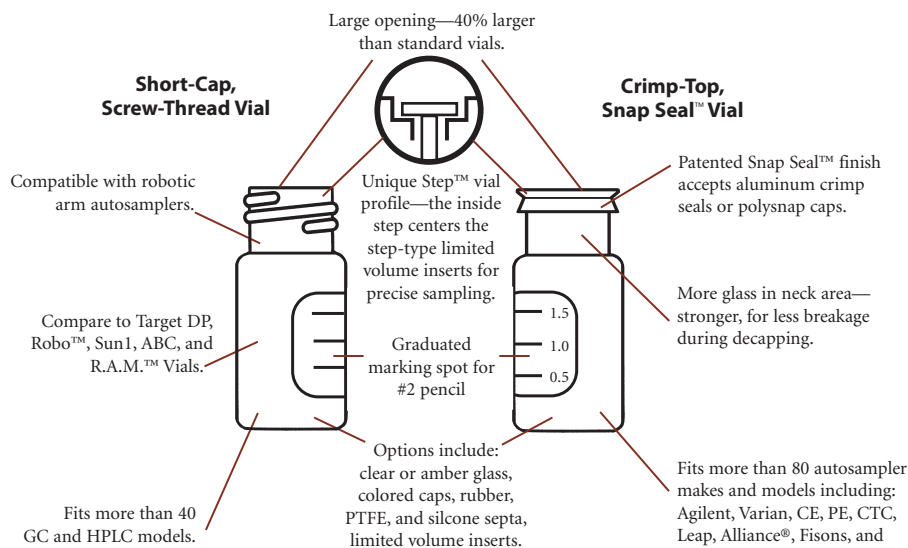
24651, 24652  
Page 265

2.0mL Snap Seal™ Style Clear or Amber Glass



21152, 21153, 24383, 24384, 24385, 24386  
Page 264

### The Ultimate Autosampler Vials

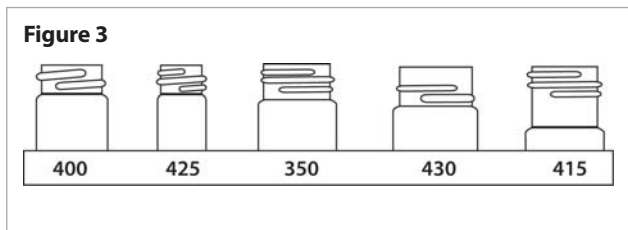
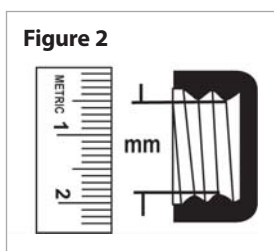
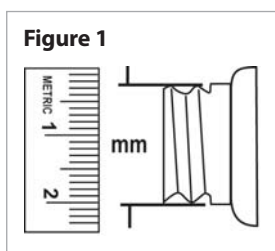


### How to Measure for Vial, Cap, Liner, and Seal Selection

Bottles and caps are described with a two part number system referred to as the Finish\* (e.g., 13/425). The first number represents the neck size of the vial or cap in millimeters.

The vial is measured from the outside edge of the threads on one side to the outside edge of the threads on the opposite side (Figure 1). The cap is measured from one side of the inner wall to the opposite side of the inner wall (Figure 2).

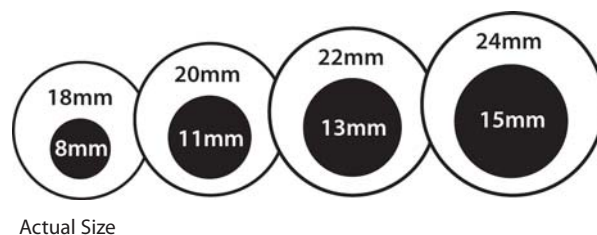
The second number describes the thread pattern and assures that the bottle and cap will fit together (Figure 3).



\*Finish sizes are standardized and controlled by GCM (Glass Container Manufacturers Institute). Both cap and vial manufacturers use these specifications.

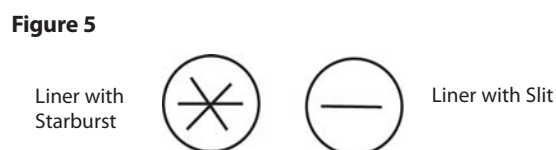
Liner size can be determined by comparing liners or crimp seals to the measured circles (Figure 4). The seals will be slightly larger than the circle size measured for the liner.

**Figure 4**  
Liner thickness is measured in mils: 1 mil = 0.001 inch



With combination liners (e.g., TFE/silicone, 5/55), the numbers represent the thickness of the individual components of the liner in mils. This same liner could be described as 0.060" or 60 mil.

Durometer or hardness of liner material is referred to as "shore" and is an important consideration in working with some autosamplers (45-60 shore is the typical range for autosampler liners). Liners with slits or molded starburst patterns (Figure 5) allow easier needle penetration which can prevent needles from bending or jamming on the autosampler arm.



## Septum Selection Guide

Materials	Compatibility	Incompatibility	Resealability	Max. Temp.
Red Rubber (synthetic)	acetone, alcohols, DMF, DMSO, ether, THF, toluene	ACN, benzene, chloroform, heptane, hexane, pyridine,	very good	90°C
PTFE/ Natural Rubber	PTFE: resistance until punctured Rubber: acetone, ACN, alcohols, diethylamine, DMF, DMSO, phenol	aromatics, carbon disulfide, chlorinated solvents, hydrocarbon solvents	very good	90°C
PTFE/Silicone PTFE/Silicone/PTFE	PTFE: resistance until punctured Silicone: acetone, alcohols, DMF, DMSO, ether	ACN, benzene, chloroform, heptane, hexane, pyridine, THF, toluene	very good	205°C
Polyethylene	Good resistance to solvents and weak acids or bases. Unreactive with most chemicals, but some solvents cause softening or swelling.	hydrocarbon solvents	one-time use	175°C
Gray Chlorobutyl	acids or bases, water solutions, buffer solutions, oxygenated solvents, vegetable oils	aliphatic or aromatic hydrocarbons, halogenated solvents, mineral oils, strong acids	very good	100°C

Abbreviations: ACN - acetonitrile, DMF - dimethylformamide, DMSO - dimethylsulfoxide, THF - tetrahydrofuran

### For a highly inert surface, we recommend Siltek® deactivation for your vials:

- Maximizes inertness, minimizes sample breakdown—ideal for difficult matrices and reactive compounds.
- Inert over a wide sample pH range.
- Low bleed.
- Thermally stable.

Our proprietary Siltek® deactivation process (US patent # 6,444,326) produces a highly inert glass surface that features high temperature stability, extreme durability, and low bleed. Try Siltek® deactivated vials for better recovery of sample analytes.

For Siltek® vials, add the corresponding suffix number to the vial catalog number.

Qty.	Siltek® Deactivation	
100-pk.	-222	addl. cost
1000-pk.	-223	addl. cost



**Shannon Rishell**  
Service Receptionist  
*1+ years of service!*



## 2.0mL, 11mm Crimp-Top Vials



**Crimp-Top Vials, 2.0mL, 12 x 32mm, 11mm Crimp Finish**  
White graduated marking spots are a standard feature unless otherwise noted.

### Crimp-Top Vials, Snap Seal™ Style—12 x 32mm, 11mm Crimp

Description	100-pk.	1000-pk.
2.0mL Clear Glass Vial w/White Graduated Marking Spot	24383	24384
2.0mL Amber Glass Vial w/White Graduated Marking Spot	24385	24386
2.0mL Clear Glass Vial without Graduated Marking Spot	21152	21153

### 2.0mL, 11mm Aluminum Crimp Seals with Septa

Description	100-pk.	500-pk.	1000-pk.
Silver Seal, PTFE/Natural Rubber Septa	21174	—	21175
Blue Seal, PTFE/Red Rubber Septa	24351	—	24352
Green Seal, PTFE/Red Rubber Septa	24353	—	24354
Red Seal, PTFE/Red Rubber Septa	24355	—	24356
Yellow Seal, PTFE/Red Rubber Septa	24357	—	24358
Mixed Colors, PTFE/Rubber Septa	—	21724	—
Silver Seal, PTFE/Silicone Septa	24359	—	24360
Blue Seal, PTFE/Silicone Septa	24361	—	24362
Green Seal, PTFE/Silicone Septa	24363	—	24364
Red Seal, PTFE/Silicone Septa	24365	—	24366
Yellow Seal, PTFE/Silicone Septa	24367	—	24368
Mixed Colors, PTFE/Silicone Septa	—	21725	—
Silver Seal, PTFE/Silicone/PTFE Septa	24369	—	24370



### also available

See [page 274](#) for electronic crimpers and decappers.

### instrument reference

#### For 2.0mL, 11mm Crimp-Top Vials

The following instruments are compatible with 2.0mL, 11mm crimp-top vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #	Manufacturer	Instrument/Model #
A.I.M.	CPS -100, 200	LDC	Marathon, Promis, other than 713
A.I.	42 vial tray	L.E.A.P. Technologies	CTC A200S, CTC A105S
Agilent	1042, 1050, 1080, 1082, 1084, 1090, 1100, 5890, 6850, 6890, 7670A, 7671A, 7672, 7673A/B, 7683, 7890, 8042	Magnus Scientific	
Alcott	738	PerkinElmer	Autosystem GC, AI-1, Integral 4000, ISS 100, ISS 200, LC 600 42 vial tray, 420/B, 4900
Alltech	570, 580 (standard tray)	Pharmacia LKB	2157-010
Altex		Precision Sampling	GC111, GC 311, LC 241-60
AMS	42	Phillips	LC-XP, 4247, 4710
Antek	736 Unisampler, 738	Polymer-Labs	GPC 110/210
ASC		Pye	LCXP
Carlo Erba/	42 vial tray	S.G.E.	M280D
Fisons	AS 800	Sedere	
Carnegie	CMA-250/200	Shimadzu	SIL-10A, 10Ai, 10AxL
Chrompack	CP 9000 GC Series	Siemens	AS 32, AS 200
CTC	CTC A105S	Spark Holland	SPH 125, Marathon, Promis, Triathlon, Midas
Dani	ALS 39.80, 86.80	Spectra-Physics	8875, 8880
Delsi		Talbot	
Dynatech	42 vial tray	Thermo Scientific	TRACE GC 2000, AS2000
Fisons	42 vial tray, AS800	TosoHaas	TSK-6080, AS-8010, AS-8020
GBC		Tosca I	
Gerstel		Tracor	770, 771, 772
Gilson	231 XL, 232 XL, 233 XL, Asted XL, Aspec XL	TSP	8875, 8880, AS 100/1000, AS 300/3000
Gynkotek	Gina, others	Unicam	4710, LC-XP, 4247
Hitachi	AS-2000, AS-6000	United Technologies	
IBM		Varian/Rainin	Dynamax AI-1A, AI-200, Dynamax AI-3
ICI	other than LC 1600	Varian	8100/8200, 9100/9090/9095
Infochroma		Waters	Marathon
Jasco	851-AS, AS-950		Alliance 2690
Kipp			
Kontron	360		

## Convenience Kits: Vials, Caps, & Septa

Vials packaged in a clear-lid tray. Caps with septa packaged in a plastic bag.

Description	100-pk.	1000-pk.
2.0mL Clear Vial, <b>deactivated</b> , PTFE/Natural Rubber Silver Seal	24671	24672
2.0mL Amber Vial, <b>deactivated</b> , PTFE/Natural Rubber Silver Seal	24673	24674
2.0mL Clear Vial, untreated, PTFE/Natural Rubber Silver Seal	21196	21197
2.0mL Amber Vial, untreated, PTFE/Natural Rubber Silver Seal	21198	21199
2.0mL Clear Vial, untreated, PTFE/Silicone Silver Seal	24646	24647
2.0mL Amber Vial, untreated, PTFE/Silicone Silver Seal	24648	24649



## Limited Volume Inserts for 2.0mL Crimp-Top & Short-Cap, Screw-Thread Vials

Description	100-pk.	1000-pk.
50µL Glass, Big Mouth w/ Bottom Spring	24513	21782
250µL Glass, Big Mouth Insert w/ Bottom Spring	21776	21777
250µL Glass, Big Mouth Insert w/ Glass Flange (Step™ Design)*	24516	21779
350µL Glass, Flat Bottom Insert	21780	24517
350µL Glass, Flat Bottom Insert w/ ID Ring	24692	24693
250µL Polypropylene, Big Mouth, Bottom Spring	24518	—
250µL Polypropylene, Big Mouth, Top Flange	24519	—
250µL Polypropylene, Big Mouth, No Spring	24520	—



\*Not to be used with 9mm screw-thread vials.

## Limited Volume Vials, 11mm Crimp-Top

Description	100-pk.	1000-pk.
100µL Polypropylene	24651	24652
100µL Glass Insert/Clear Plastic Vial	24653	—



## Versa Vial™ Vials, Glass, 2.0mL, 12 x 32mm

- Increased neck length for accommodating fluctuations in robotic arm settings.
- Eliminate cracked necks, breakage and dangerous sharp edges, using soft Versa Vial™ PTFE/silicone plugs.
- Largest target area available, ideal for sampling and pipet use.
- Vials available with or without graduated marking spots.
- Patent pending.

Description	100-pk.	1000-pk.
2.0mL Clear Glass Vial	22701	22702
2.0mL Clear Glass Vial w/Graduated Marking Spot	22703	22704
2.0mL Amber Glass Vial	22697	22698
2.0mL Amber Glass Vial w/Graduated Marking Spot	22699	22700



## Versa Vial™ Vials, Polypropylene, 1.5mL, 12 x 32mm

Description	100-pk.	1000-pk.
1.5mL Polypropylene Vial	22705	22706



## Versa Vial™ Inserts

Description	100-pk.	1000-pk.
250µL Glass Insert w/Glass Flange	22707	22708
250µL Polypropylene w/Flange	22709	22710
250µL Glass Flat Bottom Insert	22711	22712



## Versa Vial™ Plugs

Description	100-pk.	1000-pk.
12mm, Green Polyethylene Plug	22713	22714
12mm, Grey Chlorobutyl/Siliconized Plug	22715	22716
12mm, White PTFE/Silicone Plug	22717	22718
12mm, White PTFE/Silicone Plug w/Slit*	22719	22720



\*Eliminates needle damage to plug.

## 2.0mL, 11mm Poly Crimp™ Vials



### 2.0mL, 11mm Poly Crimp™ Seal: Snap-on or Crimp

The patented Poly Crimp™ Seal is versatile, working as either a snap-on or crimp-top cap. Simply use a standard crimping tool to secure the Poly Crimp™ Seal onto any crimp-top vial. It's that easy! The Poly Crimp™ Seal also forms an airtight seal by hand when the additional sealing of a crimping tool is not required. The Poly Crimp™ Seal offers the following benefits:

- Works on any crimp style vial.
- Crimps smoothly and easily—no more sharp edges from an aluminum crimp cap.
- Easily decaps using standard decapping tools.
- Eliminates inconsistent sealing that results from improper crimping.
- Unique design holds the septum firmly in place.
- Provides better seal than snap caps.\*
- Meets CONEG standards. The Poly Crimp™ Seal is free of heavy metals and is easily disposed of or incinerated.



Description	100-pk.	400-pk.	1000-pk.
Clear Seal, PTFE/Red Rubber Liner	24433	—	24434
Clear Seal, PTFE/Silicone Liner	24443	—	24444
Blue Seal, PTFE/Silicone Liner	24445	—	24446
Clear Seal, PTFE/Silicone/PTFE Liner	24453	—	24454
Blue Seal, PTFE/Silicone/PTFE Liner	24455	—	24456
Mixed Color Seals, PTFE/Silicone/PTFE Liner	—	21728	—

\*Based on continual use for 3–4 days.

### tech tip

#### Compatibility concerns?

Refer to the Septum Selection Guide on [page 263](#).

### 2.0mL, 11mm GC Snap-Top Cap™ with Septum

- Clear polypropylene cap provides a tighter seal than standard Snap-Top Cap™.
- Good for pressurized injection systems.
- Save money! Use this snap cap when you don't need to crimp.



Description	100-pk.	1000-pk.
Polypropylene Cap, 10mil PTFE Liner	21729	21730
Polypropylene Cap, PTFE/Natural Rubber Septum	21731	21732
Polypropylene Cap, PTFE/Silicone Septum	21733	21734

## 0.8mL, 8mm Crimp-Top Vials, VOA Sampling Vials

### 0.8mL, 8mm Crimp-Top Vials, 8 x 30mm

#### 0.8mL Crimp-Top Vials (8 x 30mm, 8mm Crimp)

Description	100-pk.	1000-pk.
0.8mL Clear Flat Bottom Vials	24695	24696

#### 0.8mL, 8mm Aluminum Seals w/Septa

Description	100-pk.	1000-pk.
Silver Seals w/Clear PTFE/Natural Rubber Septa	21757	21758



### 0.8mL, 8mm Crimper and Decapper

Description	qty.	cat.#
8mm Crimper	ea.	21735
8mm Decapper	ea.	21736



### instrument reference

#### For 0.8mL, 8mm Crimp-Top Vials, 8 x 30mm

The following instruments are compatible with 0.8mL, 8mm crimp-top vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #
A.I.	60 vial tray
Carlo Erba/Fisons	60 vial tray, AS 105 tray
Dynatech	60 vial tray
Fisons	60 vial tray
LDC	713
PerkinElmer	LC 600 (60), AS100/B, 300, 8300, AI-1, AS2000, LC 30, 2000, B 2000
Precision Sampling	GC 111, GC 311, LC241-60
Sigma	2000
Thermo Scientific	TRACE GC 2000, AS2000

### also available

See [page 274](#) for electronic crimpers and decappers.

### Pre-Cleaned Volatile Organic Analyte (VOA) Sampling Vials

- Container, liner and closure cleaned and assembled.
- Clear or amber.
- Open top caps.
- Teflon® faced 0.125" silicone septa.
- Each case lot numbered.

Description	Screw-Thread	qty.	cat.#
	Size		
20mL Clear Pre-Cleaned VOA Vials	24mm-400	72-pk.	21798
20mL Amber Pre-Cleaned VOA Vials	24mm-400	72-pk.	21799
40mL Clear Pre-Cleaned VOA Vials	24mm-400	72-pk.	21796
40mL Amber Pre-Cleaned VOA Vials	24mm-400	72-pk.	21797
60mL Collection Vials, Clear Glass, for ASE® 200	24mm-400	72-pk.	26121
60mL Collection Vials, Amber Glass, for ASE® 200	24mm-400	72-pk.	26122
Replacement Septa for 20, 40 & 60mL Vials and 250mL Bottles (24mm Teflon®-lined 0.125" silicone septa)		100-pk.	24694





### Headspace Autosampler Vials

Description	100-pk.	1000-pk.
a) 6mL Clear Vial	21166	21167
b) 10mL Clear Vial, Flat Bottom	24683	24684
c) 10mL Clear Vial, Rounded Bottom	21164	21165
d) 20mL Clear Vial, Flat Bottom	24685	24686
e) 20mL Clear Vial, Rounded Bottom	21162	21163
f) 27mL Clear Vial	21160	21161

a) - f) vial to instrument compatibility are designated in instrument reference chart below.

### instrument reference

#### For Headspace Vials

The following instruments are compatible with the headspace vials listed above (as letter designated above). For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #	Manufacturer	Instrument/Model #
<b>a)</b> Carlo Erba	HS 500, HS 800	<b>d)</b> A.I.	Headspace
Agilent	Headspace	Carlo Erba	HS 500, HS 800
PerkinElmer	ISS 200	CTC	Headspace
		Cueni	Headspace
<b>b)</b> A.I.	Headspace	Dani	HSS 39.50, HSS 86.50, SPT 37.50
Carlo Erba	HS500, HS 800	Agilent	Headspace
Cueni	Headspace		
Dani	HSS 39.50, HSS 86.50	<b>e)</b> A.I.	Headspace
Agilent	Headspace	Cueni	Headspace
		Dani	HSS 39.50, HSS 86.50, SPT 37.50
<b>c)</b> A.I.	Headspace	L.E.A.P. Technologies	HS 500
Cueni	Headspace	PerkinElmer	Autosystem GC, F40, F45, HS 6, Integral 4000, HS 40
Dani	HSS 39.50, HSS 86.50	Tekmar	7000, 7000/7050
L.E.A.P. Technologies	HS 500	Varian	Genesis
PerkinElmer	Autosystem GC, F40, F45, HS 6, Integral 4000, HS 40		
Tekmar	7000, 7000/7050	<b>f)</b> Shimadzu	HSS-2B
Varian	Genesis		

### 20mm Aluminum Seals w/Septa, Assembled

Description	100-pk.	1000-pk.
Silver Seal w/ PTFE/Gray Butyl Rubber	21761	21762
Silver Seal w/ PTFE/Silicone	21763	21764
Pressure Release Silver Seal w/ PTFE/Gray Butyl Rubber Septum	21765	21766
Pressure Release Silver Seal w/ PTFE/Silicone Septum	21767	21768
20mm Magnetic Crimp Cap w/Teflon®/Silicone Septum (tan/white) with 8mm Hole	22831	22832
20mm Magnetic Crimp Cap w/Teflon®/Silicone Septum (tan/white) with 5mm Hole	22833	22834
20mm Magnetic Crimp Cap w/PTFE/Butyl Septum with 8mm Hole	22835	22836
20mm Magnetic Crimp Cap w/PTFE/Butyl Septum with 5mm Hole	22837	22838

5mm hole is compatible with the following systems: Carlo Erba HS500/HS800, CTC 500, Fisons HS500/HS800 and Varian/Chrompack 9020/25. 8mm hole is compatible with the Combi Pal.

### also available

See [page 274](#) for 20mm electronic crimper and decapper.

### tech tip

**Compatibility concerns?**  
Refer to the Septum Selection Guide on [page 263](#).



## 2.0mL, 9mm Short-Cap, Screw-Thread Vials, 12 x 32mm, 9mm Opening

### Fit all 2.0mL, 12 x 32mm, Crimp-Top Vial Based Autosamplers.

- Shorter screw cap allows the robotic autosampler to function properly.
- Wider opening prevents syringe problems.
- Dimensions are effectively identical to the crimp-top vial.
- Variety of colors and liner material.

Are you tired of dealing with crimp-top vials, but worried about using screw-thread vials with your autosampler? If you want the performance of a crimp-top vial with the convenience of a screw-thread vial, these vials are the answer for you.

## 2.0mL, 9mm Short-Cap, Screw-Thread Vials, 12 x 32mm, 9mm Opening

Description	100-pk.	1000-pk.
2.0mL Clear Vial, w/White Graduated Marking Spot	21140	21141
2.0mL Amber Vial, w/White Graduated Marking Spot	21142	21143
2.0mL Clear Vial, without Graduated Marking Spot	21154	21155

## 2.0mL, 9mm Thread Preassembled Short-Cap, Screw-Vial Closures

Description	100-pk.	500-pk.	1000-pk.
Blue Cap, PTFE/Red Rubber Liner	24473	—	24474
Mixed Colors, PTFE/Red Rubber Liner	—	24668	—
Blue Cap, PTFE/Silicone Liner	24485	—	24486
Green Cap, PTFE/Silicone Liner	24487	—	24488
Yellow Cap, PTFE/Silicone Liner	24493	—	24494
Mixed Colors, PTFE/Silicone Liner	—	24669	—
Blue Cap, PTFE/Silicone/PTFE Liner	24497	—	24498
Black Cap, PTFE/Silicone/PTFE Liner	24495	—	24496
Natural Cap, PTFE/Silicone/PTFE Liner	24501	—	24502
Red Cap, PTFE/Silicone/PTFE Liner	24503	—	24504
Yellow Cap, PTFE/Silicone/PTFE Liner	24505	—	24506
Mixed Colors, PTFE/Silicone/PTFE Liner	—	24670	—

Agilent  
Compatible!



Ideal for Agilent 7673 & other autosamplers that process 12 x 32mm crimp-top vials.

## instrument reference

### For 2.0mL, 9mm Short-Cap, Screw-Thread Vials

The following instruments are compatible with 2.0mL, 9mm short-cap, screw-thread vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #
Carlo Erba / Fisons	AS 800
Dani	ALS 39.80, 86.80
Dynatech	42 vial tray, LC2000
Gilson	231 XL, 232 XL, 233 XL, Aspec XL
Agilent	1042, 1050, 1080, 1082, 1084, 1090, 1100, 5890, 6890, 7670A, 7671A, 7672, 7673A/B, 7683, 7890, 8042
Hitachi	AS-2000, AS-6000
LDC	Marathon, Promis
L.E.A.P. Technologies	CTC A200S
PerkinElmer	AI-1, ISS 100, ISS 200, LC 600 42 vial tray
Shimadzu	SIL-10A, 10Ai, 10AxL
Spark Holland	SPH 125, Marathon, Promis
Spectra-Physics	8875, 8880
Thermo Scientific	TRACE GC 2000, AS2000
Varian	8100/8200, Marathon
Waters	Alliance 2690



also available

Limited volume inserts are available on [page 265](#).

also available

see [page 275](#) for Mininert® valve caps & sampling valves to use with Accuform Micro-Vials.



## Accuform Micro-Vials with Screw Threads

Description	Screw Thread Size	qty.	cat.#
1.0mL Micro-Vial, Accuform Borosilicate Glass, Screw Thread, Graduated, Open Top Closure (attached)	13mm-425	12-pk.	21050
3.0mL Micro-Vial, Accuform Borosilicate Glass, Screw Thread, Graduated, Open Top Closure (attached)	20mm-400	12-pk.	21051

## 2.0mL, 8mm Screw-Thread Vials



2.0mL, 8mm  
Screw-Thread Vial

### Screw-Thread Vials, 12 x 32mm, 8mm/425 Thread

#### Fit all 2.0mL, 12 x 32mm, Screw-Thread Vial-Based Autosamplers.

These vials provide the most secure environment for your sample, because evaporation is minimized.

#### Screw-Thread Vials—12 x 32mm, 8mm/425 Thread

Description	100-pk.	1000-pk.
2.0mL Clear Vial, White Graduated Marking Spot	24619	24620
2.0mL Amber Vial, White Graduated Marking Spot	24621	24622

#### 2.0mL, 8mm Preamsembled Caps and Septa

Description	100-pk.	1000-pk.
8/425 Black Cap w/ Red PTFE/Silicone Septa, 0.065"	21149	21720
8/425 Black Top Hat™ PTFE/Silicone Septa	21721	21722

#### Preamsembled Vial Kits: 8mm/425 Screw-Thread, Unmarked Vials, Septa, and Caps

Caps attached to vials.

Description	100-pk.	1000-pk.
Clear Vial, Black Cap, Red PTFE/Silicone Septa, 0.045"*	24630	24631
Amber Vial, Black Cap, Red PTFE/Silicone Septa, 0.045"*	24632	24633
Clear Vial, Black Cap, Red PTFE/Silicone Septa, 0.065"**	24634	24635
Amber Vial, Black Cap, Red PTFE/Silicone Septa, 0.065"**	24636	24637

\*Best fit for Shimadzu.

\*\*Best fit for Varian.

#### Convenience Kits: Vials w/Preamsembled Caps and Septa Packed Separately (Black Polypropylene Open-Hole Caps and 8mm Red PTFE/Silicone Septa, 0.065")

Vials packaged in a clear-lid tray. Caps with septa packaged in a plastic bag.

Description	100-pk.	1000-pk.
2.0mL Clear Vial, Silcote CL7-Deactivated	24638	24639
2.0mL Amber Vial, Silcote CL7-Deactivated	24640	24641
2.0mL Clear Vial, untreated	21192	21193
2.0mL Amber Vial, untreated	21194	21195

#### 8mm/425 Thread Polypropylene Caps for 8mm Screw-Thread Vials

Description	100-pk.	1000-pk.
Black, Open-Hole Cap	21176	21177

### instrument reference

#### For 2.0mL, 8mm Screw-Thread Vials

The following instruments are compatible with 2.0mL, 8mm screw-thread vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #	Manufacturer	Instrument/Model #
A.I.M.	CPS-100, 200	PerkinElmer	Autosystem GC, 420/B, 4900
Alcott	738	Pharmacia LKB	2157-010
Alltech	570	Precision Sampling	GC111, GC 311, LC241-60
ASC		Phillips	LC-XP, 4247, 4710
Beckman	501, 502, 507	S.G.E.	M280D
Carlo Erba/Fisons	AS 800, 8000	Sedere	
Dani	ALS 39.80, 86.80	Shimadzu	AOC-8B/9, SIL-6A, AOC14/1400, AOC-17, SIL-6B, -9A, -8A, SIL-10A, 10Ai, 10AxL
Dynatech	42 vial tray	Spark Holland	Marathon, Promis, Tiathalon, Midas
Gilson	231XL, 232XL, 233XL, Asted XL, Aspec XL	Spectra-Physics	8875, 8880
Gynkoteck	Gina, others	Talbot	
Hitachi	S6551, L-7200, L-7250	TOA	ICA5450
IBM		TosoHaas	TSK-6080, AS-8010, AS-8020
ICI	All except LC1600	TSP	8875, 8880, AS100/1000, AS300/3000
Infochroma		Unicam	4700LC, LC-XP, 4247
Jasco	851-AS, AS-950, LC800 & 900 series	United Technologies	
Kipp		Varian/Rainin	Dynamax AI-3AI-IA, AI-2W
Kontron	360, 460	Varian	8100/8200, 8035, 8000 Series, Marathon, 8055, 8085, 9100/9090/9095, 3800 GC
LDC	All except 713	Waters	Alliance 2690
L.E.A.P. Technologies	CTC A200S		
Magnus Scientific			

**Septa for 8mm Screw-Thread Vials**

Description	100-pk.	1000-pk.
8mm x 0.045" Red PTFE/Silicone	21178	21179
8mm x 0.065" Red PTFE/White Silicone	21795	21147

**Limited Volume Inserts for 8mm/425 Screw-Thread Vials**

Description	100-pk.	1000-pk.
100µL Glass w/ Polypropylene Bottom Spring	24508	21775
250µL Glass, Flat Bottom	—	24510
250µL Glass, Flat Bottom w/ ID Ring	—	24691
100µL Polypropylene, No Spring	24511	—
100µL Polypropylene, Bottom Spring	24512	—

**Limited Volume Vials, 12 x 32mm, 8mm/425 Thread**

Description	100-pk.	1000-pk.
100µL Polypropylene	24623	24624
100µL Glass Insert/Clear Plastic Vial*	24625	—

\*Amber glass/clear plastic available on request (1000-packs only).

**2.0mL Screw-Thread Vials, 12 x 32mm, 10mm/425 Thread, Big Mouth Step™ Design**

- 40% larger opening than other vials.
- Step™ profile automatically centers glass flange limited volume inserts.
- Preassembled caps with septa, with or without vials.
- Designed for Waters Alliance® autosamplers.

The Big Mouth Step™ Vial System has a larger ID than conventional vials and incorporates a neck finish that is uniquely designed to allow the insert to be precisely aligned in the center of the vial. This precise alignment provides maximum sample withdrawal and eliminates any chance of missed injections. All vials with the large opening are designed with the Step™ Vial System. (See page 262.)

**2.0mL Big Mouth Step™ Screw-Thread Vials (12 x 32mm, 10mm/425 Thread)**

Description	100-pk.	1000-pk.
2.0mL Clear Step™ Vial, White Graduated Marking Spot	24626	24627
2.0mL Amber Step™ Vial, White Graduated Marking Spot	24628	24629

**2.0mL, 10mm Preassembled Big Mouth Step™ Vial Kits (w/Black Cap)**

Caps attached to vials.

Description	100-pk.	1000-pk.
2.0mL Clear Vial, PTFE/Silicone/Red PTFE Septa, 0.040"	24675	24676
2.0mL Clear Vial, Red PTFE/Silicone Septa, 0.065"	24642	24643
2.0mL Amber Vial, Red PTFE/Silicone Septa, 0.065"	24644	24645



Limited Volume Insert for 8mm Vial



8mm/425 Thread Limited Volume Vial

also **available**

See [page 272](#) for 10mm caps, septa, and limited volume inserts.

**instrument reference****For 2.0mL, 10mm Screw-Thread Vials**

The following instruments are compatible with 2.0mL, 10mm screw-thread vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #
Alcott	738
Alltech	570
Altex	
ASC	
Beckman	501, 502, 507
L.E.A.P Technologies	CTC A200S
Shimadzu	SIL-10A, 10Ai, 10AxL
Varian	8100/8200
Waters	Alliance 2690

**tech tip****Compatibility concerns?**

Refer to the Septum Selection Guide on [page 263](#).

# Caps for Big Mouth Vials, 4.0mL Crimp-Top WISP™ 48 Style Vials

## Caps, Septa, and Limited Volume Inserts for Big Mouth Screw-Thread Vials, 2.0mL, 10mm/425 Thread, Step™ Design



### 10mm Caps and Septa for 2.0mL Vials

Description	1000-pk.
Caps w/Septa, Pre-Assembled, Red PTFE/White Silicone, 0.060"	24677
Septa Only, Red PTFE/White Silicone, 0.060"	21148
Cap w/Septa, Pre-Assembled, PTFE/Silicone/PTFE, 0.040"	21723



Glass Limited Volume Insert with Polypropylene Bottom Spring (left). Flat Bottom Insert with ID Ring (right).

### Limited Volume Inserts

Description	100-pk.	1000-pk.
250µL Glass, Big Mouth Insert w/ Bottom Spring	21776	21777
350µL Glass, Flat Bottom Insert	21780	24517
350µL Glass, Flat Bottom Insert w/ ID Ring	24692	24693
250µL Glass, Big Mouth Insert w/ Glass Flange (Step™ Design)*	24516	21779

Polypropylene inserts available on request (1000-packs only).

\*Not to be used with 9mm screw-thread vials.

## 4.0mL Crimp-Top WISP™ 48 Style Vials, 15 x 45mm Snap Seal™

### 4.0mL WISP™ 48 Crimp-Top Vial (15 x 45mm Snap Seal™ Vial, 13mm Crimp-Top)

Description	100-pk.	1000-pk.
4.0mL Clear Vial, White Graduated Marking Spot	24658	24659



4.0mL WISP™ 48 Style Crimp-Top Vial

### 13mm Aluminum Seals w/Septa

Description	100-pk.	1000-pk.
Silver, PTFE/Natural Rubber	21753	21754
Silver, PTFE/Silicone	21755	21756

### 13mm Crimper and Decapper

Description	qty.	cat.#
13mm Crimper	ea.	21739
13mm Decapper	ea.	21740

## also available

For other crimpers/decappers, see page 275.



## instrument reference

### For 4.0mL WISP™ 48 Style Vials

The following instruments are compatible with 4.0mL WISP™ 48 style vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #	Manufacturer	Instrument/Model #
Bruker	LC 51	TosoHaas	TSK-6080, AS-8010, AS-8020
Hitachi	L-7200, L7250	Unicam	LC-XP
Phillips	LC-XP	Waters	48-pos. M700, 710, 717+
Shimadzu	AOC-14/1400, AOC-17, SIL-2AS		

## 4.0mL Screw-Thread Step™ WISP™ 48 Style Vials, 13mm/425 Screw-Thread

### 4.0mL WISP™ 48 Screw-Thread Step™ Vials (15 x 45mm, 13/425 Screw-Thread)

Description	100-pk.	1000-pk.
4.0mL Clear Step™ Vial, White Grad. Marking Spot	24654	24655
4.0mL Amber Step™ Vial, White Grad. Marking Spot	24656	24657



4.0mL Clear Step™ Vial

### Caps and Septa

Description	100-pk.	1000-pk.
Top Hat™, PTFE/Silicone Septa	21745	21746
Pre-Assembled, Red PTFE/Silicone, 0.065"	21743	21744
Caps, Black, Polypropylene, Open-Hole	21741	21742
Septa, Red PTFE/Silicone, 0.040"	21751	21752
Septa, Red PTFE/Silicone, 0.060"	21749	21750

### Limited Volume Inserts

Description	100-pk.	1000-pk.
500µL, Glass, WISP™, Flat Bottom**	21787	21788

Polypropylene inserts available on request (1000-packs only).

\*\*Also fit 4.0mL Snap Seal™ Vials (page 272).

## 1.0mL WISP™ 96 Style Shell Vials, 8 x 40mm

### 1.0mL WISP™ 96 Style, 8 x 40mm Shell Vials

Description	200-pk.	1000-pk.
1.0mL Clear Vial	24662	24663
1.0mL Amber Vial	24664	24665
1.0mL Polypropylene Vial	24678	24679
700µL Limited Volume Polypropylene Vial	24680	24681



1.0mL WISP™ 96 Style Vials

### 8mm Starburst Plugs

Description	200-pk.	1000-pk.
Snap Plug, Clear Polyethylene	21769	21770
Snap Plug, Conical, Clear Polyethylene	21771	21772
Snap Plug, Silicone-Lined, Clear Polyethylene	21773	21774

### Limited Volume Inserts for Shell Vials

Description	100-pk.	1000-pk.
250µL Glass, Big Mouth Insert w/ Bottom Spring	21776	21777



Limited Volume Insert for Shell Vials

## instrument reference

### For 1.0mL WISP™ 96 Style Vials

The following instruments are compatible with 1.0mL WISP™ 96 style vials. For further information or questions, please contact your Restek sales representative or technical service.

Manufacturer	Instrument/Model #
Hitachi	L-7200
Waters	96-position M-700, 710, 717+

## Electronic Crimpers and Decappers

### Hand-held Rechargeable Crimpers and Decappers

- Easy to use; comfortable grip.
- Hundreds of operations from one charge.
- Adjustable crimping force.
- New battery allows for faster charge cycle.
- All kits include a universal plug set for the battery charger.



### new and improved!

All electronic crimpers & decappers now come with a universal plug set, which includes U.S., European, UK, and Australian plug clips.

The newly re-designed electronic crimpers and decappers have a 4.8 volt battery already installed. The new battery allows for quick, powerful operation and a faster charge cycle, minimizing downtime. Charging the battery now only takes thirty minutes to two hours. Also, the power supply comes with a plug set for operation in most countries. The universal plug set includes U.S., European, UK and Australian plug clips.

These hand-held electronic tools for the 11mm and 20mm caps will cycle hundreds of times on a single charge. The cycle is controlled precisely, through an internal counter, and is adjusted with two buttons on the side of the case. The crimpers and decappers easily fit around vials in a standard autosampler tray. Each kit includes a tool, a 4.8v battery, which allows for a faster charge cycle, and a universal plug set for the battery charger.



**Capping**  
Easily crimp caps on standard crimp vials.

### Decapping has never been easier!

one...



two...



three!



Universal plug set for battery charger included in all kits.

Description	qty.	cat.#
11mm Electronic Crimper	kit	22338
11mm Electronic Decapper	kit	22340
20mm Electronic Crimper	kit	22339
20mm Electronic Decapper	kit	22341
Replacement Battery for Electronic Crimpers and Decappers	ea.	22342

### Aluminum Seal Crimpers and Decappers

The crimper is adjustable for optimized sealing performance and is comfortable enough for prolonged use. If you need to save, transfer, or dispose of your samples, our decapper allows you to remove a crimp-top cap safely and easily. Far safer than removing caps with pliers, knife or screwdriver blades, etc. If you aren't currently using a seal decapper, we recommend you order one today!

Description	qty.	cat.#
8mm Crimper	ea.	21735
8mm Decapper	ea.	21736
11mm Crimper	ea.	21170
11mm Decapper	ea.	21171
13mm Crimper	ea.	21739
13mm Decapper	ea.	21740
20mm Crimper	ea.	21737
20mm Decapper	ea.	21738



Safer than removing caps with pliers, knives or screwdriver blades!



Decapper



Crimper

### Snap Rack™ Storage Unit

The Snap Rack™ sample vial rack is an innovation that allows you to keep your vials and caps together. Constructed of tough polypropylene, the Snap Rack™ holds 50 12 x 32mm size vials. The Snap Rack™ is stackable too! Simply “snap” one rack on top of another. Double rack capacity by snapping a rack across another rack. With a standard vial rack, once the post breaks, a replacement rack is needed. The Snap Rack™ eliminates this problem!



Snap Rack™ vial racks are stackable for maximum storage of vials and caps!

Description	Capacity	qty.	cat.#
50 Position Snap Rack™ for 12 x 32mm Vials	50	ea.	24521

### Mininert® Precision Sampling Valves for Vials

Mininert® valves are on/off valves that are very convenient for repetitive sampling, while limiting sample exposure to the silicon septum. Models are available for screw-cap and crimp-top vials. The screw-cap Mininert® valve is available in 13, 15, 18, 20, and 24mm cap sizes. The crimp-top valve for 20mm ID glassware slides into the neck of the vial. Turn the threaded flange to secure a tight fit.

Description	Thread Size	qty.	cat.#
13mm Mininert® Screw Cap	13mm-425	12-pk.	24900
15mm Mininert® Screw Cap	15mm-425	12-pk.	24901
18mm Mininert® Screw Cap	18mm-400	12-pk.	24902
20mm Mininert® Screw Cap	20mm-400	12-pk.	24903
24mm Mininert® Screw Cap	24mm-400	12-pk.	24904
20mm Mininert® Crimp Top	—	12-pk.	24905
Replacement Septa	—	50-pk.	24906
Septum Insertion Tool	—	ea.	24907



Mininert® Screw Cap



Mininert® Crimp Top

also available

See page 269 for Accuform Micro-Vials to use with Mininert® caps & valves.

# Syringes



Top: Amanda Rigdon and Michelle Long,  
Innovations Chemists

Bottom: Jack Cochran, Director of New Business  
& Technology



**Restek offers complementing lines of syringes from Hamilton & SGE.**

If you don't find the syringe you're looking for on the following pages, contact us.

**Needle Gauge Chart**

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

did you know?

Syringes and needles manufactured by Hamilton Company and SGE are intended for scientific research and laboratory use only and are not intended for human *in vivo* use.

**Needle Point Style**

Restek offers several different point styles on syringe and needle products. Choose one based on your application.



**Point Style 2, BV:** beveled needle tip. Recommended for optimum septum penetration and prevention of septum coring.



**Point Style 3, LC:** square/blunt needle tip. For use with HPLC injection valves and for sample pipetting.



**Point Style 5:** conical needle with side hole. Liquid samples are filled and dispensed through the side hole.



**Point Style H:** domed needle tip with side hole. Liquid samples are filled and dispensed through the side hole. The solid tip minimizes septum damage.



**Point Style Agilent/Cone:** special conical style needle point used exclusively on syringes for autosamplers.

**Guide to Needle Termination Codes**

**Hamilton:**

- (N) Cemented Needle
- (RN) Removable Needle
- (ASN) Autosampler Cemented Needle
- (ASRN) Autosampler Removable Needle
- (TLL) Teflon® Luer Lock
- (KH) Knurled Hub
- (LT) Luer Tip
- (LTN) Luer Tip Cemented Needle

**SGE:**

- (F) Fixed Needle
- (R) Removable Needle
- (LL) Luer Lock
- (LT) Luer Tip

**Syringe Termination**

From cemented to removable needles and from Teflon® luer-lock to special syringe fittings, syringe barrel terminations create the interface between a syringe and its mating connection. For your reference, we describe the most common Hamilton/SGE terminations below.



**N, Cemented Needle / F, Fixed:**

Needle cemented into the glass syringe barrel at a point corresponding to the zero graduation mark. Not autoclavable.



**KH, Knurled Hub / R, Removable:**

Used on 7000 Series Hamilton syringes, exclusively. Knurled hub enables 6000 psig maximum injection pressures and the attachment of a spacer for repeatable injections. Autoclavable when disassembled.



SuperfleX Flexible Plunger Syringe page 287



Agilent Autosampler Syringes page 278



**RN, Removable Needle / R, Removable:**

Needle seats precisely to the zero graduation mark of the syringe. Allows the use of different specification needles on the same syringe barrel. Autoclavable when disassembled.



**TLL, Teflon® Luer-Lock / LL, Luer Lock / LT, Luer Tip:**

Male luer taper with nickel-plated brass hub accepts and locks into place luer hub needles and connectors. Autoclavable when disassembled.



Gas-Tight Luer-Lock Syringe page 291

# Autosampler Syringes for Agilent GCs

## Standard Microliter Syringes for Agilent 7673, 7683, and 6850 Autosamplers

- Hamilton and SGE syringes are designed and tested to meet critical autosampler performance.
- Needle point styles are designed to withstand multiple, rapid injections through a septum.



Hamilton 10µL, Autosampler Cemented Needle for Agilent 7673, 7683, 6850 Autosamplers

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek cat.#
					Model	cat.#	
0.5µL	ASRN	23s	1.71"	Agilent	7000.5	86276	24895
0.5µL	ASRN	26s	1.71"	Agilent	7000.5	86274	21221
5µL	ASRN	23s	1.71"	Agilent	75	87957	20172
5µL	ASN	23s	1.71"	Agilent	75	87987	20168
5µL	ASN	23s	1.71"	Agilent	75	87990	20170
5µL	ASN	26s	1.71"	Agilent	75	87988	24592
5µL	ASN	26s	1.71"	Agilent	75	87989	21230
5µL	ASRN	23s-26s	1.71"	Agilent	75	87959	21223
5µL	ASN	23s-26s	1.71"	Agilent	75	87993	24593
5µL	ASN	23s-26s	1.71"	Agilent	75	87994	24594
10µL	ASRN	23s	1.71"	Agilent	701	80357	20171
10µL	ASN	23s	1.71"	Agilent	701	80387	20167
10µL	ASN	23s	1.71"	Agilent	701	80390	20169
10µL	ASRN	26s	1.71"	Agilent	701	80358	24597
10µL	ASN	26s	1.71"	Agilent	701	80388	24595
10µL	ASN	26s	1.71"	Agilent	701	80389	24599
10µL	ASRN	23s-26s	1.71"	Agilent	701	80359	24598
10µL	ASN	23s-26s	1.71"	Agilent	701	80393	24596
10µL	ASN	23s-26s	1.71"	Agilent	701	80391	24600



SGE Removable Needle for Agilent 7673, 7683, 6850 Autosamplers

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek cat.#
					Model	cat.#	
0.5µL	R	23	42mm	Cone	0.5BR-HP-0.63	000410	24791
0.5µL	R	26	42mm	Cone	0.5BR-HP-0.47	000400	24790
5µL	R	23	42mm	Cone	5R-HP-0.63	001815	24793
5µL	F	23	42mm	Cone	5F-HP-0.63	001810	24781
5µL	F	23	42mm	Cone	SK-5F-HP-0.63	001814	24783
5µL	R	26	42mm	Cone	5R-HP-0.47	001805	24792
5µL	F	26	42mm	Cone	5F-HP-0.47	001800	24780
5µL	F	26	42mm	Cone	SK-5F-HP-0.47	001804	24782
5µL	R	23-26s	42mm	Cone	5R-HP-0.63/0.47	001825	21211
5µL	F	23-26s	42mm	Cone	5F-HP-0.63/0.47	001821	21210
5µL	F	23-26s	42mm	Cone	SK-5F-HP-0.63/0.47	001822	21214
10µL	R	23	42mm	Cone	10R-HP-0.63	002815	24795
10µL	F	23	42mm	Cone	10F-HP-0.63	002810	24785
10µL	F	23	42mm	Cone	SK-10F-HP-0.63	002814	24787
10µL	R	26	42mm	Cone	10R-HP-0.47	002805	24794
10µL	F	26	42mm	Cone	10F-HP-0.47	002800	24784
10µL	F	26	42mm	Cone	SK-10F-HP-0.47	002804	24786
10µL	R	23-26s	42mm	Cone	10R-HP-0.63/0.47	002825	21213
10µL	F	23-26s	42mm	Cone	10F-HP-0.63/0.47	002821	21212
10µL	F	23-26s	42mm	Cone	SK-10F-HP-0.63/0.47	002822	21215

#### Guide to Needle Termination Codes

#### Hamilton:

(N) Cemented Needle  
 (RN) Removable Needle  
 (ASN) Autosampler Cemented Needle  
 (ASRN) Autosampler Removable Needle  
 (TLL) Teflon® Luer Lock  
 (KH) Knurled Hub  
 (LT) Luer Tip  
 (LTN) Luer Tip Cemented Needle

#### SGE:

(F) Fixed Needle  
 (R) Removable Needle  
 (LL) Luer Lock  
 (LT) Luer Tip

## Gas-Tight Teflon®-Tipped Syringes for Agilent 7673, 7683, and 6850 Autosamplers



Hamilton 10µL Gas-Tight Syringe



**David Facey**  
Customer Service  
Representative  
4+ years of service!

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek cat.#
					Model	cat.#	
5µL	ASN	23s	1.71"	Agilent	175	80074	ea. 24893
10µL	ASN	23s	1.71"	Agilent	1701	80080	ea. 24894
10µL	ASRN	23s	1.71"	Agilent	1701	80087	ea. 21224
10µL	ASRN	26s	1.71"	Agilent	1701	80088	ea. 21228
10µL	ASRN	23s-26s	1.71"	Agilent	1701	80089	ea. 21229

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek cat.#
					Model	cat.#	
10µL	F	23	42mm	Cone	10F-HP-GT-0.63	002812	ea. 24789
10µL	R	23	42mm	Cone	10R-HP-GT-0.63	002818	ea. 24797
10µL	R	23-26	42mm	Cone	10R-HP-GT-0.63/0.47	002829	ea. 21220

## Large Volume Syringes for Agilent 7673, 7683, and 6850 Autosamplers

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek cat.#
					Model	cat.#	
25µL	R	23	42mm	Cone	25R-HP-0.63	003665	ea. 24798
50µL	R	23	42mm	Cone	50R-HP-0.63	004665	ea. 24799
100µL	R	23	42mm	Cone	100R-HP-0.63	005665	ea. 24800
250µL	R	23	42mm	Cone	250R-HP-0.63	006665	ea. 24801

## Replacement Needles for Agilent 7673, 7683, and 6850 Autosampler Syringes



### Needles for Hamilton Syringes

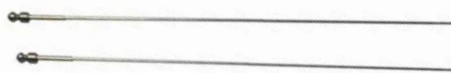
Syringe Volume	Needle Gauge	Needle Length	Point Style	Hamilton cat.#	Restek cat.#
5-10µL	23s	1.71"	Agilent	7786-01	6-pk. 20164
5-10µL	26s	1.71"	Agilent	7786-02	6-pk. 20165
5-10µL	23s-26s	1.71"	Agilent	7785-01	6-pk. 20166

### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	Restek cat.#
0.5µL	23	42mm	Cone	033715	ea. 24821
0.5µL	26	42mm	Cone	033708	ea. 24820
5µL	23	42mm	Cone	036720	2-pk. 24823
5µL	26	42mm	Cone	036710	2-pk. 24822
10µL	23	42mm	Cone	037717	2-pk. 24825
10µL	26	42mm	Cone	037715	2-pk. 24824
25-250µL	23	42mm	Cone	038717	2-pk. 24826

# Autosampler Syringes for Agilent GCs

## Replacement Teflon®-Tipped Plunger Assembly for Agilent 7673, 7683, and 6850 Autosampler Syringes



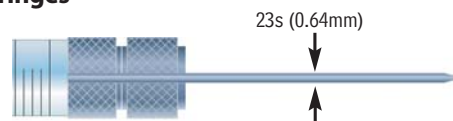
### SGE

Syringe Volume	Needle Term.	SGE cat. #	qty.	Restek cat. #
10 $\mu$ L	F	031808	2-pk.	21218
10 $\mu$ L	R	031809	2-pk.	21284

### Needle Gauge for Agilent 7673, 7683, 6850 Syringes

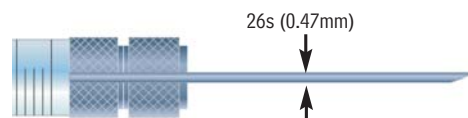
#### Single Gauge Needle

- The most popular gauge for Agilent 7673.
- Best for Merlin Microseal septum and standard septum-equipped GCs.
- Packed column injection ports.
- Split/splitless injection ports.



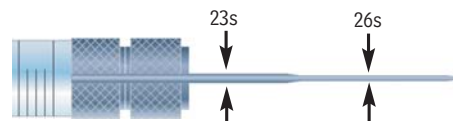
#### Single Gauge Needle

- On-column injection ports.
- Split/splitless injection ports.



#### 23s-26s—Dual Gauge (tapered)

- Durability of a 23s gauge needle.
- Ability of a 26s gauge needle to perform split/splitless and on-column injections.



## CROSS-reference

### For Agilent Syringes

Listed below are some Hamilton and SGE syringes, cross-referenced to Agilent part numbers for your convenience. For further information or questions, contact your Restek sales representative or technical service.

Similar to Agilent Part #	Restek Part #	Description	Page
5181-1267	21212, 24596	10 $\mu$ L Standard Syringe, Fixed Needle, 23-26 Gauge	278
5181-1273	21210, 24593	5 $\mu$ L Standard Syringe, Fixed Needle, 23-26 Gauge	278
5181-3319	20166	Needle for 10 $\mu$ L Standard Syringe, 23-26 Gauge	279
5181-3321	21213, 24598	10 $\mu$ L Standard Syringe, Removable Needle, 23-26 Gauge	278
5181-3356	21218	Replacement Teflon®-Tipped Plunger for 10 $\mu$ L Fixed Needle Syringe	280
5181-3358	24919	Teflon®-Tipped Plunger for 10 $\mu$ L Standard Syringe, Removable Needle	290
5181-3360	21215, 24600	10 $\mu$ L Standard Syringe, Fixed Needle, 23-26 Gauge (6-pk.)	278
5181-3365	21218	Teflon®-Tipped Plunger for 10 $\mu$ L Standard Syringe, Fixed Needle	280
5181-8809	24894, 24789	10 $\mu$ L Gas-tight Syringe, Fixed Needle, 23 Gauge	279
5181-8811	20164, 24825	Needle for 10 $\mu$ L Gas-tight Syringe, 23 Gauge	279
5181-8813	21224, 24797	10 $\mu$ L Gas-tight Syringe, Removable Needle, 23 Gauge	279
5182-0830	24821	Needle for 0.5 $\mu$ L Standard Syringe, 23 Gauge	279
5182-0832	20166	Needle for 5-10 $\mu$ L Autosampler Syringe, 23-26 Gauge	279
5182-0834	20172, 24793	5 $\mu$ L Standard Syringe, Removable Needle, 23 Gauge	278
5182-0835	21223, 21211	5 $\mu$ L Standard Syringe, Removable Needle, 23-26 Gauge	278
5182-0875	20170, 24783	5 $\mu$ L Standard Syringe, Fixed Needle, 23 Gauge (6-pk.)	278
9301-0713	20167, 24785	10 $\mu$ L Standard Syringe, Fixed Needle, 23 Gauge	278
9301-0714	24595, 24784	10 $\mu$ L Standard Syringe, Fixed Needle, 26 Gauge	278
9301-0725	20169, 24787	10 $\mu$ L Standard Syringe, Fixed Needle, 23 Gauge (6-pk.)	278
9301-0891	24592, 24780	5 $\mu$ L Standard Syringe, Fixed Needle, 26 Gauge	278
9301-0892	20168, 24781	5 $\mu$ L Standard Syringe, Fixed Needle, 23 Gauge	278

## Autosampler Syringes for PerkinElmer Autosystem™ and Clarus 500 GCs

- Hamilton syringes are designed and tested to meet critical autosampler performance.
- Needle point styles are developed to withstand multiple and rapid injections through a septum.



Hamilton 5µL Autosampler Syringe

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton			Restek cat.#
					Model	cat.#	qty.	
5µL	ASN	23	2.756"	3	75ASN/PE	88035	ea.	24953
5µL	ASN	26	2.756"	3	75ASN/PE	88040	ea.	24952



SGE 5µL Autosampler Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE			Restek cat.#
					Model	cat.#	qty.	
0.5µL	R	23	70mm	Cone	0.5BR-PE-0.63	000478	ea.	24811
0.5µL	R	26	70mm	Cone	0.5BR-PE-0.47	000475	ea.	24810
5µL	F	23	70mm	Cone	5F-PE-0.63	001954	ea.	24813
5µL*	F	23	70mm	Cone	5F-PE-GT-0.63	001957	ea.	24815
5µL	F	26	70mm	Cone	5F-PE-0.47	001953	ea.	24812
5µL*	F	26	70mm	Cone	5F-PE-GT-0.47	001955	ea.	24814
50µL	F	23	70mm	Cone	50F-PE-0.63	004670	ea.	24816

\*Gas-tight.

### Guide to Needle Termination Codes

#### Hamilton:

- (N) Cemented Needle
- (RN) Removable Needle
- (ASN) Autosampler Cemented Needle
- (ASRN) Autosampler Removable Needle
- (TLL) Teflon® Luer Lock
- (KH) Knurled Hub
- (LT) Luer Tip
- (LTN) Luer Tip Cemented Needle

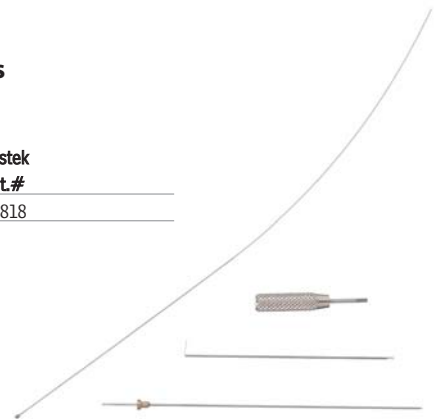
#### SGE:

- (F) Fixed Needle
- (R) Removable Needle
- (LL) Luer Lock
- (LT) Luer Tip

## Replacement Needle and Plunger Kit for PerkinElmer Autosampler Syringes

### SGE Needle and Plunger Kit

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
0.5µL	23	70mm	Cone	033765	kit	24818



Needle and Plunger Kit

also available

#### Looking for septa?

Restek carries a full line of septa for every type of application and instrument. See [pages 134-135](#).



# Autosampler Syringes for Varian GCs

## Autosampler Syringes for Varian 8000 Series GCs



**Steve Kozel**

U.S. Sales & Distribution  
Manager  
1+ year of service!



Hamilton 10µL Autosampler Syringe

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton Model	Hamilton cat.#	qty.	Restek cat.#
<b>Varian 8100/8200 Syringes</b>								
10µL	RN	26s	1.99"	5	701 Varian	202880	ea.	24956



SGE 10µL Autosampler Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	SGE cat.#	qty.	Restek cat.#
<b>Varian 8000 Syringes</b>								
10µL	R	25	50mm	Dome	10R-VA80-II	002926	ea.	24850
<b>Varian 8035, 8100, &amp; 8200 Syringes</b>								
10µL*	F	25	53mm	S/Hole	10F-VA8X-11	002923	ea.	24851
10µL*	R	25	53mm	S/Hole	10R-VA8X-II	002924	ea.	24852
100µL	R	25	53mm	S/Hole	100R-VA8X	005921	ea.	24853
<b>Varian CP 8400, CP8410 Syringes</b>								
10µL	F	26	50mm	Cone	10F-C/F-5/0.47C	002980	ea.	24922
10µL	F	26	50mm	Bevel	10F-VA8400-5/0.47	002950	ea.	21202

\*Gas-tight syringe.

## Replacement Needles for Varian 8000 Series Autosampler Syringes

### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
10µL	23	53mm	S/Hole	037779	2-pk.	24857
10µL*	25	53mm	S/Hole	037780	ea.	24858
10µL**	25	53mm	S/Hole	037777	ea.	24854
10µL	25	53mm	2	037776	2-pk.	24855

\*straight needle shaft, 0.20mm ID needle, for use with viscous samples

\*\*tapered needle shaft, 0.12mm ID needle

Searching for a product?

[www.restek.com](http://www.restek.com)

## Autosampler Syringes for Shimadzu GCs

- Hamilton syringes are designed and tested to meet critical autosampler performance.
- Needle point styles are developed to withstand multiple and rapid injections through a septum.



Hamilton 10µL Autosampler Syringe

### Hamilton Syringes for Shimadzu AOC 9 GCs

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek
					Model	cat.#	
5µL	RN	26s	2"/51mm	2	75RN	87930	ea. 24617
5µL	N	26s	2"/51mm	2	75N	87900	ea. 24938
10µL	RN	26s	2"/51mm	2	701RN	80330	ea. 24530



SGE 5µL Autosampler Syringe

### SGE Syringes for Shimadzu AOC 14, 17, 20, and 20i GCs

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek
					Model	cat.#	
0.5µL	R	23	42mm	Cone	0.5BR-S-0.63	000445	ea. 24841
0.5µL	R	26	42mm	Cone	0.5BR-S-0.47	000440	ea. 24840
5µL	F	23	42mm	Cone	5F-S-0.63	001988	ea. 24843
5µL	F	26	42mm	Cone	5F-S-0.47	001987	ea. 24842
10µL	R	23	42mm	Cone	10R-S-0.63	002898	ea. 24845
10µL*	R	23	42mm	Cone	10R-S-GT-0.63	002902	ea. 24846
10µL	R	26	42mm	Cone	10R-S-0.47	002897	ea. 24844
250µL*	F	23	42mm	Cone	250F-S-GT-0.63	006682	ea. 24847

\*Gas-tight syringe.

#### Guide to Needle Termination Codes

##### Hamilton:

(N) Cemented Needle  
 (RN) Removable Needle  
 (ASN) Autosampler Cemented Needle  
 (ASRN) Autosampler Removable Needle  
 (TLL) Teflon® Luer Lock  
 (KH) Knurled Hub  
 (LT) Luer Tip  
 (LTN) Luer Tip Cemented Needle

##### SGE:

(F) Fixed Needle  
 (R) Removable Needle  
 (LL) Luer Lock  
 (LT) Luer Tip

## Replacement Needles for Shimadzu Autosampler Syringes



### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	Restek cat.#
0.5µL	23	42mm	Cone	033745	24747
0.5µL	26	42mm	Cone	033738	24746
10µL	23	42mm	Cone	037747	24749
10µL	26	42mm	Cone	037745	24748

# Autosampler Syringes for Thermo Scientific GCs

## Autosampler Syringes for Thermo Scientific GCs

- Hamilton syringes are designed and tested to meet critical autosampler performance.
- Needle point styles are developed to withstand multiple and rapid injections through a septum.



**Al Carusone**  
Technical Service  
Specialist  
4+ years of service!

### Guide to Needle Termination Codes

#### Hamilton:

(N) Cemented Needle  
(RN) Removable Needle  
(ASN) Autosampler  
Cemented Needle  
(ASRN) Autosampler  
Removable Needle  
(TLL) Teflon® Luer Lock  
(KH) Knurled Hub  
(LT) Luer Tip  
(LTN) Luer Tip Cemented  
Needle

#### SGE:

(F) Fixed Needle  
(R) Removable Needle  
(LL) Luer Lock  
(LT) Luer Tip



Hamilton 10µL Autosampler Syringe

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek cat.#
					Model	cat.#	
10µL	N	26s	3.15"	AS	701SN	80318	ea. 24962



SGE 10µL Autosampler Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek cat.#
					Model	cat.#	
10µL	F	26	80mm	Cone	10F-C/F-8/0.47C	002992	ea. 24924
10µL	R	26	80mm	Cone	10R-C/F-8/0-0.47C	002993	ea. 24934

## Replacement Needles for Thermo Scientific Autosampler Syringes



### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	Restek cat.#
0.5µL	26	50mm	Cone	033770	ea. 24927
10µL	26	80mm	Cone	031535	3-pk. 24935

## instrument reference

### Autosampler Syringes for Thermo Scientific GCs

Autosampler syringes for TriPlus, AS3000, AS2000, AS200/800 GCs. The following autosamplers are compatible with the respective SGE and Hamilton syringes. For further information or questions, contact your Restek sales representative or technical service.

#### SGE Syringes

TriPlus	AS3000	AS2000	AS200/800	Restek cat.#	Page
•	•			24928	285
•	•			24926	285
•	•	•	•	24923	285
•	•	•	•	24932	285
•	•	•	•	24924	284
•	•	•	•	24934	284
•	•	•	•	24922	285
•	•	•	•	24930	285

#### Replacement Needles for SGE Syringes for Thermo Scientific GCs

TriPlus	AS3000	AS2000	AS200/800	Restek cat.#	Page
•	•			24929	285
•	•			24927	284
•	•	•	•	24933	285
•	•	•	•	24931	285
•	•	•	•	24935	284

#### Hamilton Syringes

TriPlus	AS3000	AS2000	AS200/800	Restek cat.#	Page
			•	24962	284

## Autosampler Syringes for CTC/LEAP GCs

- Hamilton syringes are designed and tested to meet critical autosampler performance.
- Needle point styles are developed to withstand multiple and rapid injections through a septum.



Hamilton 10µL Autosampler Syringe

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton			Restek cat.#
					Model	cat.#	qty.	
1.2µL	N	26	2"/51mm	AS	7701.2N	203185	ea.	22755
5µL	N	26s	2"/51mm	AS	75N	203189	ea.	22756
10µL	N	23s	2"/51mm	AS	701N	203361	ea.	22757
10µL	N	23s-26s	2"/51mm	AS	701N	203362	ea.	22758
10µL	N	23s	2"/51mm	2	701N	203363	ea.	22759
10µL	N	26s	2"/51mm	2	701N Slim Line	203072	ea.	22760
10µL	N	26s	2"/51mm	AS	701N	203205	ea.	22761
10µL	N	26s	2"/51mm	2	701N	203269	6-pk.	22762
25µL*	N	26s	2"/51mm	AS	1702N	203043	ea.	22763
25µL*	N	26s	2"/51mm	AS	1702N Slim Line**	203074	ea.	22764
100µL*	N	26s	2"/51mm	AS	1710N Slim Line**	203076	ea.	22765

\*Gas-tight syringe.

\*\*Barrel OD = 6.7mm; all other 25µL and 100µL syringes have a 7.9mm barrel OD.



SGE 10µL Autosampler Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE			Restek cat.#
					Model	cat.#	qty.	
0.5µL	R	23	50mm	Cone	0.5BNR-C/F-0.63	000492	ea.	24928
0.5µL	R	26	50mm	Cone	0.5BNR-C/F-0.47	000490	ea.	24926
5µL	F	23	50mm	Cone	5F-C/F-5/0.63	001981	ea.	24921
5µL	F	26	50mm	Cone	5F-C/F-5/0.47	001982	ea.	24920
10µL	F	23	50mm	Cone	10F-C/F-0.63	002981	ea.	24923
10µL	R	23	50mm	Cone	10R-C/F-0.63	002984	ea.	24932
10µL	F	26	50mm	Cone	10F-C/F-5/0.47C	002980	ea.	24922
10µL	F	26	50mm	Cone	SK10F-C/F-5/0.47C	002986	6-pk.	24925
10µL	R	26	50mm	Cone	10R-C/F-5/0-0.47C	002982	ea.	24930
10µL*	F	23	50mm	Cone	10F-C/T-GT-5/0.63C	002987	ea.	22749
25µL	F	26	50mm	Cone	25F-C/T-5/0.47C	003980	ea.	22750
25µL*	F	23	50mm	Cone	25F-C/T-GT-5/0.63C	003987	ea.	22751
25µL*	R	26	50mm	S-hole	25R-C/T-GT-5/0.47H	003988	ea.	22752
100µL*	F	23	50mm	Cone	100F-C/T-GT-5/0.63C	005335	ea.	22753
100µL*	R	26	50mm	Cone	100R-C/T-GT-5/0.47C	005333	ea.	22754

\*Gas-tight syringe.

also **available**

Replacement plunger assemblies for these syringes are available on request.

## Replacement Needles for CTC/LEAP Autosampler Syringes



### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
0.5µL	23	50mm	Cone	033772	ea.	24929
10µL	23	50mm	Cone	037787	2-pk.	24933
10µL	26	50mm	Cone	037785	2-pk.	24931

# Standard Microliter Volume Syringes

## Standard Microliter Volume Syringes

- Economical.
- Available with cemented needles (N/F) or removable needles (RN/R).
- Each syringe plunger and barrel assembly is manufactured as one working unit; components are not interchangeable or individually replaceable.



Hamilton 700 Series Microliter Syringe

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		qty.	Restek cat.#
					Model	cat.#		
5 $\mu$ L	N	26s	2"/51mm	2	75N	87900	ea.	24938
5 $\mu$ L	RN	26s	2"/51mm	2	75RN	87930	ea.	24617
10 $\mu$ L	N	26s	2"/51mm	2	701N	80300	ea.	20174
10 $\mu$ L	N	26s	2"/51mm	2	701N	80366	6-pk.	20175
10 $\mu$ L	RN	26s	2"/51mm	2	701RN	80330	ea.	24530
25 $\mu$ L	N	22s	2"/51mm	2	702N	80400	ea.	24531
10 $\mu$ L	N	26s	2"/51mm	5	701NPT5	80339	ea.	24967
25 $\mu$ L*	RN	22s	2"/51mm	2	702RN	80430	ea.	24532
50 $\mu$ L	N	22s	2"/51mm	2	705N	80500	ea.	24533
50 $\mu$ L*	RN	22s	2"/51mm	2	705RN	80530	ea.	24534
100 $\mu$ L	N	22s	2"/51mm	2	710N	80600	ea.	24535
100 $\mu$ L*	RN	22s	2"/51mm	2	710RN	80630	ea.	24536
250 $\mu$ L	N	22s	2"/51mm	2	725N	80700	ea.	24537
250 $\mu$ L*	RN	22s	2"/51mm	2	725RN	80730	ea.	24538
500 $\mu$ L	N	22	2"/51mm	2	750N	80800	ea.	24539
500 $\mu$ L*	RN	22	2"/51mm	2	750RN	80830	ea.	24540



SGE Standard Microliter Volume Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		qty.	Restek cat.#
					Model	cat.#		
5 $\mu$ L	F	26	50mm	2	5F**	001000	ea.	24700
5 $\mu$ L*	R	26	50mm	2	5R**	001050	ea.	24701
10 $\mu$ L	F	26	50mm	2	10F**	002000	ea.	24702
10 $\mu$ L	F	26	50mm	2	SK-10F**	002030	6-pk.	24715
10 $\mu$ L*	R	26	50mm	2	10R**	002050	ea.	24703
10 $\mu$ L*	R	26	50mm	2	SK-10R**	002080	6-pk.	24716
25 $\mu$ L	F	25	50mm	2	25F	003000	ea.	24704
25 $\mu$ L*	R	25	50mm	2	25R	003050	ea.	24705
50 $\mu$ L	F	25	50mm	2	50F	004000	ea.	24706
50 $\mu$ L*	R	25	50mm	2	50R	004050	ea.	24707
100 $\mu$ L	F	25	50mm	2	100F	005000	ea.	24708
100 $\mu$ L*	R	25	50mm	2	100R	005050	ea.	24709
250 $\mu$ L	F	25	50mm	2	250F	006000	ea.	24710
250 $\mu$ L*	R	25	50mm	2	250R	006050	ea.	24711
500 $\mu$ L	F	25	50mm	2	500F	007000	ea.	24712
500 $\mu$ L*	R	25	50mm	2	500R	007050	ea.	24713

\*For replacement RN/R needles, see page 290.

\*\*With plunger protection.



## SuperfleX Flexible Plunger Syringes

- The SuperfleX syringe features a super-elastic plunger that returns to its original shape if twisted or bent.



SGE SuperfleX Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek
					Model	cat.#	
5µL	F	26	50mm	2	5FX	001100	ea. 24720
5µL	R	26	50mm	2	5RX	001150	ea. 24721
10µL	F	26	50mm	2	10FX	002100	ea. 24722
10µL	F	26	50mm	2	SK-10FX	002130	6-pk. 24718
10µL	R	26	50mm	2	10RX	002150	ea. 24723
10µL*	R	26	50mm	2	SK-10RX	002180	6-pk. 24719

## Reinforced Plunger Microliter Volume Syringes

- Reinforcing extends the life of fragile, small diameter plungers.
- Economical because of longer life—even in rugged applications.
- Hand-lapped plunger ensures a perfect seal with the barrel.



Hamilton 900 Series Microliter Syringe

### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek
					Model	cat.#	
5µL	N	26s	2"/51mm	2	95	87920	ea. 24541
5µL*	RN	26s	2"/51mm	2	95	87925	ea. 24542
10µL	N	26s	2"/51mm	2	901	80360	ea. 24543
10µL*	RN	26s	2"/51mm	2	901	80370	ea. 24544

### Guide to Needle Termination Codes

#### Hamilton:

- (N) Cemented Needle
- (RN) Removable Needle
- (ASN) Autosampler Cemented Needle
- (ASRN) Autosampler Removable Needle
- (TLL) Teflon® Luer Lock
- (KH) Knurled Hub
- (LT) Luer Tip
- (LTN) Luer Tip Cemented Needle

#### SGE:

- (F) Fixed Needle
- (R) Removable Needle
- (LL) Luer Lock
- (LT) Luer Tip



SGE Guided Plunger Syringe

### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek
					Model	cat.#	
5µL	F	26	50mm	2	5F-GP	001400	ea. 24769
5µL*	R	26	50mm	2	5R-GP	001450	ea. 24766
10µL	F	26	50mm	2	10F-GP	002400	ea. 24767
10µL*	R	26	50mm	2	10R-GP	002450	ea. 24768

\*For replacement RN/R needles, see page 290.

# Micro-Volume Syringes



**Sabah Dabby**  
Chief Innovations Officer  
6+ years of service!

## Micro-Volume, Positive Displacement Syringes

- Sample is contained in the needle with full plunger displacement, ensuring no dead volume.
- High precision and accuracy down to 0.1µL.
- Seal between the plunger and the needle can be tightened for high-pressure injection.
- Replaceable needle/plunger kits and barrels (available on request).



Hamilton 7001 Series Micro-Volume Syringe

## Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek cat.#
					Model	cat.#	
0.5µL	KH	25	2.75"/70mm	2	7000.5	86259	24545
0.5µL	KH	25	2.75"/70mm	3	7000.5	86250	24546
1.0µL	KH	22s	2.75"/70mm	2	7101	86211	24549
1.0µL	KH	25s	2.75"/70mm	2	7001	80135	24547
1.0µL	KH	25s	2.75"/70mm	3	7001	80100	24548
2.0µL	KH	25	2.75"/70mm	2	7002	88411	24551
5.0µL	KH	24	2.75"/70mm	2	7105	88011	24555
5.0µL	KH	24	2.75"/70mm	3	7105	88000	24556



SGE Micro-Volume Plunger-in-Needle Syringe

## SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek cat.#
					Model	cat.#	
0.5µL	R	23	70mm	2	0.5BR-7BV	000311	24771
0.5µL	R	23	70mm	Cone	0.5BR-7	000310	24772
0.5µL	R	26	70mm	Cone	0.5BR-OC-7/0.47*	000376	24770
1.0µL	R	23	70mm	2	1BR-7BV	000506	24775
1.0µL	R	23	70mm	Cone	1BR-7	000505	24774
1.0µL	R	23	50mm	Cone	1BR-5	000500	24773
1.0µL	R	26	70mm	Cone	1BR-7/0.47*	000570	24776
5.0µL	R	23	70mm	2	5BR-7BV	000803	24779
5.0µL	R	23	70mm	Cone	5BR-7	000802	24778
5.0µL	R	23	50mm	Cone	5BR-5	000800	24777

\*70mm needle length, 0.47mm OD, on-column syringe.

## tech tip

### Reinserting Teflon®-tipped Plungers

After disassembling and cleaning a syringe with a Teflon®-tipped plunger, wet the Teflon® plunger tip prior to reinserting it into the barrel. Always avoid touching the plunger—any abrasions, scratches or oil from fingers could interfere with proper plunger operation.

## SGE Replacement Plunger-in-Needle Kits

- Kits are supplied with both a plunger and a needle.
- Plunger and needle must be replaced together.

Volume	Needle Gauge	Needle Length	Point Style	SGE Model	SGE cat.#	For Syringe		Restek cat.#
						cat.#	qty.	
0.5µL	23	70mm	2	NP0.5B-7BV	033060	24771	kit	24831
0.5µL	23	70mm	Cone	NP0.5B-7C	033057	24772	kit	24830
0.5µL	26	70mm	Cone	NP0.5B-OC-7	033630	24770	kit	24832
1.0µL	23	70mm	2	NP1B-7BV	034060	24775	kit	24835
1.0µL	23	70mm	Cone	NP1B-7C	034057	24774	kit	24834
1.0µL	23	50mm	Cone	NP1B-5C	034055	24773	kit	24833
1.0µL	26	70mm	Cone	NP1B-OC-7/0.47	034610	24776	kit	24836
5.0µL	23	70mm	2	NP5B-7BV	035058	24779	kit	24839
5.0µL	23	70mm	Cone	NP5B-7C	035057	24778	kit	24838
5.0µL	23	50mm	Cone	NP5B-5C	035055	24777	kit	24837

**Teflon® Tip, Gas-Tight Syringes**

- Suitable for gases or liquids for maximum inertness.
- High accuracy of dispensed volumes.
- Interchangeable barrels, plungers, and tips extend performance and increase cost-effectiveness.



Hamilton 1700/1000 Series Gas-Tight Syringe

**Hamilton Syringes**

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		qty.	Restek cat.#
					Model	cat.#		
10µL	N	26s	2"/51mm	2	1701	80000	ea.	24557
10µL	RN	26s	2"/51mm	2	1701	80030	ea.	24558
25µL	N	22s	2"/51mm	2	1702	80200	ea.	24559
25µL	RN	22s	2"/51mm	2	1702	80230	ea.	24560
50µL	N	22s	2"/51mm	2	1705	80900	ea.	24561
50µL	RN	22s	2"/51mm	2	1705	80930	ea.	24562
100µL	N	22s	2"/51mm	2	1710	81000	ea.	24563
100µL	RN	22s	2"/51mm	2	1710	81030	ea.	24564
250µL	N	22s	2"/51mm	2	1725	81100	ea.	24567
250µL	RN	22s	2"/51mm	2	1725	81130	ea.	24568
500µL	LTN	22	2"/51mm	2	1750	81217	ea.	24571
500µL	RN	22	2"/51mm	2	1750	81230	ea.	24572
1mL	LTN	22	2"/51mm	2	1001	81317	ea.	24575
1mL	RN	22	2"/51mm	2	1001	81330	ea.	24576
1mL	TLL	*	—	w/out slots	1001	81320	ea.	24578
2.5mL	TLL	*	—	w/out slots	1002	81420	ea.	24584
2.5mL	RN	22	2"/51mm	2	1002	81430	ea.	24582
2.5mL	N	22	2"/51mm	2	1002	81417	ea.	24581
5mL	TLL	*	—	w/out slots	1005	81520	ea.	20178
10mL	TLL	*	—	w/out slots	1010	81620	ea.	20179
25mL	TLL	*	—	w/out slots	1025	82520	ea.	24591
50mL	TLL	*	—	w/out slots	1050	85020	ea.	24717



SGE Gas-Tight Syringe

**SGE Syringes**

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		qty.	Restek cat.#
					Model	cat.#		
10µL	F	26	50mm	2	10F-GT	002200	ea.	24725
10µL	R	26	50mm	2	10R-GT	002250	ea.	24726
25µL	F	25	50mm	2	25F-GT	003200	ea.	24727
25µL	R	25	50mm	2	25R-GT	003250	ea.	24728
50µL	F	25	50mm	2	50F-GT	004200	ea.	24729
50µL	R	25	50mm	2	50R-GT	004250	ea.	24730
100µL	F	25	50mm	2	100F-GT	005200	ea.	24734
100µL	R	25	50mm	2	100R-GT	005250	ea.	24735
100µL	LL	*	—	—	100F-LL-GT	005230	ea.	24737
250µL	F	25	50mm	2	250F-GT	006200	ea.	24738
250µL	R	25	50mm	2	250R-GT	006250	ea.	24739
250µL	LL	*	—	—	250F-LL-GT	006230	ea.	24741
500µL	F	25	50mm	2	500F-GT	007200	ea.	24742
500µL	R	25	50mm	2	500R-GT	007250	ea.	24743
1mL	R	23	50mm	2	1MR-GT	008100	ea.	24750
1mL	LL	*	—	—	1MDF-LL-GT	008025	ea.	24752
2.5mL	LL	*	—	—	2.5MDF-LL-GT	008425	ea.	24755
5mL	LL	*	—	—	5MDR-LL-GT	008760	ea.	24757
10mL	LL	*	—	—	10MDR-LL-GT	008960	ea.	24759
25mL	LL	*	—	—	25MDR-LL-GT	009462	ea.	24760
50mL	LL	*	—	—	50MR-LL-GT	009660	ea.	24761
100mL	LL	*	—	—	100MR-LL-GT	009760	ea.	24762

\*Needles sold separately. See page 290.

**Guide to Needle Termination Codes**

**Hamilton:**  
 (N) Cemented Needle  
 (RN) Removable Needle  
 (ASN) Autosampler Cemented Needle  
 (ASRN) Autosampler Removable Needle  
 (TLL) Teflon® Luer Lock  
 (KH) Knurled Hub  
 (LT) Luer Tip  
 (LTN) Luer Tip Cemented Needle

**SGE:**  
 (F) Fixed Needle  
 (R) Removable Needle  
 (LL) Luer Lock  
 (LT) Luer Tip

# Gas-Tight Syringe Replacement Needles

## Teflon® Tip, Gas-Tight Syringe Replacement Needles for Removable Needle Syringes

Materials: stainless steel needle, nickel-plated brass hub

### Needles for Hamilton Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	Hamilton cat.#	qty.	Restek cat.#
5–100 $\mu$ L	26s	2"	2	7758-02	6-pk.	24939
5–100 $\mu$ L	22s	2"	2	7758-03	6-pk.	24940
250 $\mu$ L–10mL	22	2"	2	7779-01	6-pk.	24942
250 $\mu$ L–10mL	26s	2"	2	7779-02	6-pk.	24943
250 $\mu$ L–10mL	22s	2"	2	7779-03	6-pk.	24944

### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
5 $\mu$ L	26	50mm	2	036110	5-pk.	24802
10 $\mu$ L	23	50mm	2	037111	5-pk.	24804
10 $\mu$ L	26	50mm	2	037110	5-pk.	24803
25–500 $\mu$ L	23	50mm	2	038111	5-pk.	24806
25–500 $\mu$ L	25	50mm	2	038110	5-pk.	24805
1–2.5mL	23	50mm	2	039110	5-pk.	24807

## Replacement Teflon®-Tipped Plunger Assembly

### Hamilton

Syringe Volume	Needle Term.	Hamilton cat.#	qty.	Restek cat.#
10 $\mu$ L	N, RN, LT/LTN	13205	ea.	24919

## Gas-Tight Syringe Replacement Needles for Luer-Lock Syringes

### Needles for Hamilton Syringes

Hub Material	Needle Gauge	Needle Length	Point Style	Hamilton cat.#	qty.	Restek cat.#
metal	26s	2"/51mm	2	90053	6-pk.	20133
metal	25s	1.97"	3	90049*	6-pk.	24605
metal	22s	2"/51mm	2	90051	6-pk.	24606
Kel-F® (Teflon® tip)	26s	2"/51mm	2	90153	6-pk.	24607
Kel-F® (Teflon® tip)	25s	1.97"	3	90149*	6-pk.	24608
Kel-F® (Teflon® tip)	22s	2"/51mm	2	90151	6-pk.	24609

\*For Waters U6K injection valve.

### Needles for SGE Syringes

Hub Material	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
metal	23	50mm	2	039802	5-pk.	24763
metal	22	2"/51mm	3	039895**	2-pk.	24765
metal	18	50mm	2	039842	5-pk.	24764

\*\*For Rheodyne®/Valco® valves.

## SGE Gas-Tight Syringes with Shut-off Valves

- Ideal for sample storage and transportation.
- Push-pull shut-off valve.



**Lori Sheppard**  
Sales Support Specialist  
1+ year of service!

### Syringe Fitted with Removable Needle and Valve

Volume	Model	SGE		Restek	
		cat.#	qty.	cat.#	qty.
50µL	50R-V-GT	004279	ea.	24880	
100µL	100R-V-GT	005279	ea.	24881	
250µL	250R-V-GT	006279	ea.	24882	
500µL	500R-V-GT	007279	ea.	24883	
1mL	1MDR-V-GT	008110	ea.	24884	
2.5mL	2.5MDR-V-GT	008510	ea.	24885	

### Syringe Fitted with Luer-Lock Valve\*



Volume	Model	SGE		Restek	
		cat.#	qty.	cat.#	qty.
1mL	1MR-VLL-GT	008160	ea.	24886	
2.5mL	2.5MDR-VLL-GT	008560	ea.	24887	

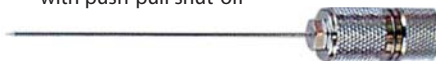


5mL	5MDR-VLLMA-GT	008770	ea.	24888	
10mL	10MDR-VLLMA-GT	008970	ea.	24889	
25mL	25MDR-VLLMA-GT	009472	ea.	24890	
50mL	50MR-VLLMA-GT	009670	ea.	24891	
100mL	100MR-VLLMA-GT	009770	ea.	24892	

\*Order needles separately.

## Replacement Needles for SGE Gas-Tight Syringes with Shut-off Valves

Model V Syringe Valve  
with push-pull shut-off



### Model V Syringe Valve: fits any SGE removable needle syringe, 25µL-2.5mL

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE			Restek cat.#
				Model	cat.#	qty.	
25µL-2.5mL	23	50mm	Cone	V	031905	ea.	24898

### Luer-Lock Needles

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE			Restek cat.#
				Model	cat.#	qty.	
1mL-100mL	23	50mm	2	NLL-5/23	039802	5-pk.	24763
1mL-100mL	18	50mm	2	NLL-5/18	039842	5-pk.	24764
1mL-100mL	22	2"/51mm	3	NLL-LC	039895**	2-pk.	24765

\*\*Fits Rheodyne® & Valco® injection valves

## Economical Hamilton Syringe Guide\*\*\*

- Prevents syringe plunger from bending.
- Adjustable stop prevents plunger damage.
- Easily installed.



Hamilton Syringe Guide

Syringe Volume	Used with Syringe Series	Hamilton cat.#	Restek cat.#
25-500µL	700/1700/1000	14906	24615
5-10µL	700/1700/1000	14806	24616

\*\*\*Order syringe separately.

# Precision Sampling Syringes, Air Monitoring Syringes



**Alan Sensus**  
Technical Service  
Specialist  
6+ years of service!

## A-2 Luer Gas-Tight Syringes\*

- For use with VOA-CYL 4 standards.
- Push-style on-off button valve.

Use to withdraw a gas sample from a high-pressure cylinder through a high-purity VOC single-stage regulator after attaching the appropriate adaptor to the regulator. Use with luer syringe needles listed.



100µL Luer Syringe

Description	qty.	cat.#
100µL Luer Syringe	ea.	20162
500µL Luer Syringe	ea.	20163
Luer Syringe Needles (26s gauge)	6-pk.	20133

\*Restek's A-2 syringes have a luer tip.

## Heavy Duty Purge & Trap Syringe (Dynatech Precision Sampling)

- Heavy-duty glass barrel with metal front and rear flanges.
- Teflon® luer-lock tip.
- Can fill and empty sparge tubes.
- Sample-Lok valve accepts standard luer-lock needles.
- Suitable for purge & trap applications.



Precision Sampling Syringe  
with Sample-Lok Valve

Syringe	cat.#	2mL	cat.#	5mL	cat.#	10mL
without Sample-Lok	21205		21206		21209	
with Sample-Lok	—		21208		21207	



## Luer-Lock Valve Adaptors

Description	SGE cat. #	qty.	Restek cat.#
Luer-Lock Valve Adaptors	200010	2-pk.	21283

## Jumbo Syringe

Clear acrylic syringes, ideal for holding and dispensing large volumes of gas. An adjustable plunger on the O-ring ensures that the syringe is gas-tight over a long period of time. The central port is supplied with a luer-lock fitting; the secondary port is supplied with a septum nut. This enables access to the gas sample for adding standards or removing a sub-sample. The plunger stem is detachable, making sample storage easy.



1000mL Jumbo Syringe



O-Rings for 1000mL & 500mL Syringes

## Jumbo Syringe

Volume	Model	SGE cat.#	qty.	Restek cat.#
500mL	500MAR-LL-GT	009910	ea.	21275
1000mL	1000MAR-LL-GT	009920	ea.	21276
2000mL	2000MAR-LL-GT	009930	ea.	21277

## Syringe O-Rings

Syringe Volume	SGE cat.#	qty.	Restek cat.#
500mL	032527	ea.	21278
1000mL	032532	ea.	21279

**Syringes for Waters U6K Valves**

- Reinforced plungers.
- Removable needles.
- Replaceable plunger/barrel assemblies.
- Barrel stop prevents plunger blowout.



Hamilton 50µL Syringe for Waters U6K Valves

**Hamilton Syringes**

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		Restek cat.#
					Model	cat.#	
10µL	RN	25s	1.97"	3	801	84815	ea. 21255
25µL	RN	25s	1.97"	3	802	84816	ea. 21256
50µL	RN	25s	1.97"	3	805	84817	ea. 21257
100µL	RN	25s	1.97"	3	810	84818	ea. 21258
250µL	RN	25s	1.97"	3	825	84819	ea. 21259



SGE 50µL Syringe for Waters U6K Valves

**SGE Syringes**

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		Restek cat.#
					Model	cat.#	
25µL	R	25	50mm	3	25R-WLC-RA8	003375	ea. 24873
50µL	R	25	50mm	3	50R-WLC-RA8	004375	ea. 24874
100µL	R	25	50mm	3	100R-WLC-RA8	005375	ea. 24875
250µL	R	25	50mm	3	250R-WLC-RA8	006375	ea. 24876
500µL	R	25	50mm	3	500R-WLC-RA8	007375	ea. 24877

**Guide to Needle Termination Codes**

**Hamilton:**

- (N) Cemented Needle
- (RN) Removable Needle
- (ASN) Autosampler Cemented Needle
- (ASRN) Autosampler Removable Needle
- (TLL) Teflon® Luer Lock
- (KH) Knurled Hub
- (LT) Luer Tip
- (LTN) Luer Tip Cemented Needle

**SGE:**

- (F) Fixed Needle
- (R) Removable Needle
- (LL) Luer Lock
- (LT) Luer Tip

**Replacement Needles for Syringes for Waters U6K Valves**

**Needles for Hamilton Syringes**



Syringe Volume	Needle Gauge	Needle Length	Point Style	Hamilton cat.#	Restek cat.#
10-100µL	25s	1.97"	3	8647-01	6-pk. 21270
250µL-10mL	25s	1.97"	3	8648-01	6-pk. 21271

**Matt Matis**

Northeast States Sales  
Representative  
4+ years of service!

### Gas-Tight Syringes for Rheodyne® & Valco® Valves

- Teflon®-tipped plungers.
- Removable needles.
- Replaceable syringe barrels, plungers, and plunger tips.



Hamilton 10µL Gas-Tight Syringe for  
Rheodyne® and Valco® Valves

#### Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		qty.	Restek cat.#
					Model	cat.#		
10µL	RN	26s	2"/51mm	3	1701	80065	ea.	21260
25µL	RN	22s	2"/51mm	3	1702	80265	ea.	21261
50µL	RN	22s	2"/51mm	3	1705	80965	ea.	21262
100µL	RN	22s	2"/51mm	3	1710	81065	ea.	21263
250µL	RN	22s	2"/51mm	3	1725	81165	ea.	21264



SGE 50µL Gas-Tight Syringe for Rheodyne® and Valco® Valves

#### SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		qty.	Restek cat.#
					Model	cat.#		
10µL	R	22	2"	3	10R-GT-LC	002313	ea.	24866
25µL	R	22	2"	3	25R-GT-LC	003312	ea.	24867
50µL	R	22	2"	3	50R-GT-LC	004312	ea.	24868
100µL	R	22	2"	3	100R-GT-LC	005312	ea.	24869
250µL	R	22	2"	3	250R-GT-LC	006312	ea.	24870
500µL	R	22	2"	3	500R-GT-LC	007312	ea.	24871

### Replacement Needles for Gas-Tight Syringes for Rheodyne® & Valco® Valves



#### Needles for Hamilton Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	Hamilton cat.#	qty.	Restek cat.#
5–100µL	22s	2"	3	7770-01	6-pk.	24941
250µL–10mL	22	2"	3	7780-04	6-pk.	24945

#### Needles for SGE Syringes

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
10µL	22	2"	3	037250	5-pk.	24808
25–500µL	22	2"	3	038250	5-pk.	24809

**Economical Microliter Liquid-Type Syringes for Rheodyne® & Valco® Valves**

- Cemented/fixed needles.
- Plungers and barrels are not interchangeable or replaceable.



Hamilton 50µL Microliter Syringe for Rheodyne® and Valco® Valves

**Hamilton Syringes**

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		qty.	Restek cat.#
					Model	cat.#		
10µL	N	22s	2"	3	701	80365	ea.	21250
25µL	N	22s	2"	3	702	80465	ea.	21251
50µL	N	22s	2"	3	705	80565	ea.	21252
100µL	N	22s	2"	3	710	80665	ea.	21253
250µL	N	22s	2"	3	725	80765	ea.	21254



SGE 50µL Microliter Syringe for Rheodyne® and Valco® Valves

**SGE Syringes**

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		qty.	Restek cat.#
					Model	cat.#		
10µL	F	22	2"	3	10F-LC	002301	ea.	24860
25µL	F	22	2"	3	25F-LC	003300	ea.	24861
50µL	F	22	2"	3	50F-LC	004300	ea.	24862
100µL	F	22	2"	3	100F-LC	005300	ea.	24863
250µL	F	22	2"	3	250F-LC	006300	ea.	24864
500µL	F	22	2"	3	500F-LC	007300	ea.	24865

**Guide to Needle Termination Codes****Hamilton:**

(N) Cemented Needle  
 (RN) Removable Needle  
 (ASN) Autosampler Cemented Needle  
 (ASRN) Autosampler Removable Needle  
 (TLL) Teflon® Luer Lock  
 (KH) Knurled Hub  
 (LT) Luer Tip  
 (LTN) Luer Tip Cemented Needle

**SGE:**

(F) Fixed Needle  
 (R) Removable Needle  
 (LL) Luer Lock  
 (LT) Luer Tip

**Priming Syringes for Waters 6000, 6000A, 501, 510, 590, 610 and 610E HPLC Pumps**

- Designed for maximum safety with metal flange and luer-lock (LL) hub.
- Teflon®-tipped plunger.

**Hamilton Syringe**

Volume	Needle Term.	Hamilton		Pressure Tested to	qty.	Restek cat.#
		Model	cat.#			
10mL	TLL	1010W	81610	700 psig	ea.	21265

**SGE Syringe**

Volume	Needle Term.	SGE		Pressure Tested to	qty.	Restek cat.#
		Model	cat.#			
10mL	LL	10MDR-LL-GT	008960	100 psig	ea.	24759

## Syringes for Agilent 1090 &amp; 1100 LC Autosamplers



25µL, 1/4-32 UNEF Thread

## SGE Syringes

Volume	SGE		qty.	Restek cat.#
	Model	cat.#		
25µL	25D-HP1090-GT	003670	ea.	22290
250µL	250D-HP1090-GT	006670	ea.	22291

## Syringe for Hitachi LC Autosamplers



500µL, M10 X1 Thread

## SGE Syringe

Volume	SGE		qty.	Restek cat.#
	Model	cat.#		
500µL	500C-HITACH1	007660	ea.	22292

## Syringes for PerkinElmer LC Autosamplers



250µL, 1/4-28 UNF Thread

## SGE Syringes

Volume	SGE		qty.	Restek cat.#
	Model	cat.#		
50µL	50D-CX-GT	004995	ea.	22295
100µL	100D-CX-GT	005990	ea.	22296
250µL	250D-CX-GT	006995	ea.	22297
500µL	500D-CX-GT	007995	ea.	22298
1mL	1MD-C-GT	008185	ea.	22299

## Syringes for Waters WISP™ LC Autosamplers



250µL, 1/4-28 UNF Thread

## SGE Syringes

Volume	SGE		qty.	Restek cat.#
	Model	cat.#		
25µL	25D-WISP	003990	ea.	22293
250µL	250D-WISP	006690	ea.	22294



## Hamilton Syringes

- Teflon® PTFE-tipped plungers

Volume	Hamilton		qty.	Restek cat.#
	Model	cat.#		
25µL	1702	80020	ea.	24528
250µL	1725	80024	ea.	24529

## Syringes for CTC/LEAP LC Autosamplers



Hamilton 100µL LC Autosampler Syringe

## Hamilton Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton		qty.	Restek cat.#
					Model	cat.#		
10µL	N	22s	2"/51mm	3	701N	203073	ea.	22743
25µL	N	22s	2"/51mm	3	1702N	203075	ea.	22744
100µL	N	22s	2"/51mm	3	1710N Slim Line*	203077	ea.	22745
100µL	N	22	2"/51mm	3	1710N	203235	ea.	22746
250µL	N	22	2"/51mm	3	1725N	203079	ea.	22747
500µL	N	22	2"/51mm	3	1750N	203349	ea.	22748

\*Barrel OD = 6.7mm; all other 25µL and 100µL syringes have a 7.9mm barrel OD.

also **available**

Replacement plunger assemblies for these syringes are available on request.



SGE 25µL LC Autosampler Syringe

## SGE Syringes

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE		qty.	Restek cat.#
					Model	cat.#		
10µL	F	22s	2"/51mm	LC	10F-CTC-LC	002710	ea.	22737
25µL	F	22s	2"/51mm	LC	25F-C/TLC	003984	ea.	22738
25µL*	R	22s	2"/51mm	LC	25R-C/T-GT-LC	003985	ea.	22739
50µL*	F	22s	2"/51mm	LC	50F-C/T-GT-LC	004810	ea.	22740
100µL*	R	22s	2"/51mm	LC	100R-C/T-GT-LC	005330	ea.	22741
500µL*	F	22s	2"/51mm	LC	500F-CTC-GT-LC(0.41)	007720	ea.	22742

\*Gas-tight syringe.

did you **know**?

Restek sells nitrogen generators from Parker for LC/MS systems. See [page 245](#).



## Guide to Needle Termination Codes

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(F) Fixed Needle  
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(LL) Luer Lock  
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