

Syringes

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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.

Syringe Basics

Needle Gauge Chart

Gauge	Nominal OD		Nominal ID	
26s	0.019 in	0.47 mm	0.0050 in	0.13 mm
26	0.018 in	0.46 mm	0.0102 in	0.26 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

s (after gauge) = smaller ID with thicker walls

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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

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 reduction of septum coring.



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



Point Style 5, S/Hole, Bevel: conical needle with side hole. Liquid samples are filled and dispensed through the side hole.



Point Style H, Dome: 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, AS: special conical style needle point used exclusively on syringes for autosamplers.

Syringe Termination Types

From cemented to removable needles, and from PTFE 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 6,000 psig maximum injection pressures and the attachment of a spacer for repeatable-depth injections. Autoclavable when disassembled.



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.

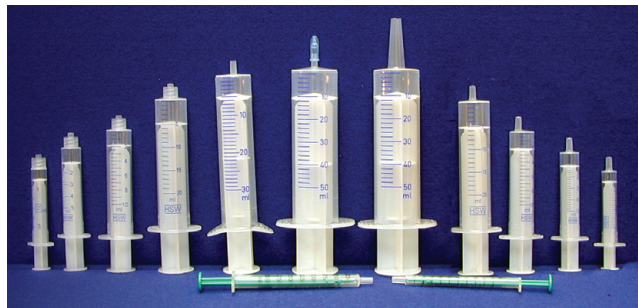


TLL, PTFE Luer Lock / LL, Luer Lock / LT, Luer Tip:

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

NORM-JECT® Plastic Syringes

NORM-JECT® syringes are latex-free, contain no rubber, no silicone oil, styrene or DEHP, and are DNA-free. These syringes are the choice for any situation needing an inert, nonreactive syringe. Because of their composition, they are ideal for chromatography and many other laboratory procedures. They are more chemically resistant than rubber-tipped syringes and are manufactured from only laboratory grade polypropylene and polyethylene. These unique plastic syringes have a positive safety stop to prevent accidental spills. NORM-JECT® syringes are individually sterile strip packed.

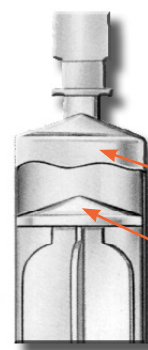


Not recommended for human use.

Description	qty.	cat. #
1 mL Luer Slip Tuberculin ¹	100-pk.	22766
3 mL Luer Slip Centric Tip	100-pk.	22767
5 mL Luer Slip Centric Tip ²	100-pk.	22768
10 mL Luer Slip Eccentric Tip ²	100-pk.	22769
20 mL Luer Slip Eccentric Tip ²	100-pk.	22770
30 mL Luer Slip Eccentric Tip	50-pk.	22771
50 mL Luer Slip Eccentric Tip ²	30-pk.	22772
3 mL Luer Lock Tip	100-pk.	22773
5 mL Luer Lock Tip ²	100-pk.	22774
10 mL Luer Lock Tip ²	100-pk.	22775
20 mL Luer Lock Tip ²	100-pk.	22776
30 mL Luer Lock Tip	50-pk.	22777
50 mL Luer Lock Tip ²	30-pk.	22778

¹Dose saver design with low dead space plug on the piston to minimize waste.

²The 5 mL has graduations to 6 mL, 10 mL has graduations to 12 mL, 20 mL has graduations to 24 mL, and 50 mL has graduations to 60 mL.



Great for use with Restek syringe filters!
See page 408.

Barrel - Polypropylene

Plunger - Polyethylene





20167



24785

Standard Microliter Syringes

for Agilent 7673, 7683, 7693A, and 6850 Autosamplers

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

Hamilton

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton Model	cat.#	qty.	Restek cat.#
0.5 µL	ASRN	23s	1.71"	Agilent	7000.5	86276	ea.	24895
0.5 µL	ASRN	26s	1.71"	Agilent	7000.5	86274	ea.	21221
5 µL	ASRN	23s	1.71"	Agilent	75	87957	ea.	20172
5 µL	ASN	23s	1.71"	Agilent	75	87987	ea.	20168
5 µL	ASN	23s	1.71"	Agilent	75	87990	6-pk.	20170
5 µL	ASN	26s	1.71"	Agilent	75	87988	ea.	24592
5 µL	ASN	26s	1.71"	Agilent	75	87989	6-pk.	21230
5 µL	ASRN	23s-26s	1.71"	Agilent	75	87959	ea.	21223
5 µL	ASN	23s-26s	1.71"	Agilent	75	87993	ea.	24593
5 µL	ASN	23s-26s	1.71"	Agilent	75	87994	6-pk.	24594
10 µL	ASRN	23s	1.71"	Agilent	701	80357	ea.	20171
10 µL	ASN	23s	1.71"	Agilent	701	80387	ea.	20167
10 µL	ASN	23s	1.71"	Agilent	701	80390	6-pk.	20169
10 µL	ASRN	26s	1.71"	Agilent	701	80358	ea.	24597
10 µL	ASN	26s	1.71"	Agilent	701	80388	ea.	24595
10 µL	ASN	26s	1.71"	Agilent	701	80389	6-pk.	24599
10 µL	ASRN	23s-26s	1.71"	Agilent	701	80359	ea.	24598
10 µL	ASN	23s-26s	1.71"	Agilent	701	80393	ea.	24596
10 µL	ASN	23s-26s	1.71"	Agilent	701	80391	6-pk.	24600

SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
0.5 µL	R	23	42 mm	Cone	0.5BR-HP-0.63	000410	ea.	24791
0.5 µL	R	26	42 mm	Cone	0.5BR-HP-0.47	000400	ea.	24790
5 µL	F	23	42 mm	Cone	5F-HP-0.63	001810	ea.	24781
5 µL	F	23	42 mm	Cone	SK-5F-HP-0.63	001814	6-pk.	24783
5 µL	F	26	42 mm	Cone	5F-HP-0.47	001800	ea.	24780
5 µL	F	26	42 mm	Cone	SK-5F-HP-0.47	001804	6-pk.	24782
5 µL	F	23-26s	42 mm	Cone	5F-HP-0.63/0.47	001821	ea.	21210
5 µL	F	23-26s	42 mm	Cone	SK-5F-HP-0.63/0.47	001822	6-pk.	21214
10 µL	R	23	42 mm	Cone	10R-HP-0.63	002815	ea.	24795
10 µL	F	23	42 mm	Cone	10F-HP-0.63	002810	ea.	24785
10 µL	F	23	42 mm	Cone	SK-10F-HP-0.63	002814	6-pk.	24787
10 µL	R	26	42 mm	Cone	10R-HP-0.47	002805	ea.	24794
10 µL	F	26	42 mm	Cone	10F-HP-0.47	002800	ea.	24784
10 µL	F	26	42 mm	Cone	SK-10F-HP-0.47	002804	6-pk.	24786
10 µL	F	23-26	42 mm	Cone	10F-HP-0.63/0.47	002821	ea.	21212
10 µL	F	23-26	42 mm	Cone	SK-10F-HP-0.63/0.47	002822	6-pk.	21215
Large Volume								
50 µL	R	23	42 mm	Cone	50R-HP-0.63	004665	ea.	24799

Gas-Tight PTFE-Tipped Syringes

for Agilent 7673, 7683, 7693A, and 6850 Autosamplers

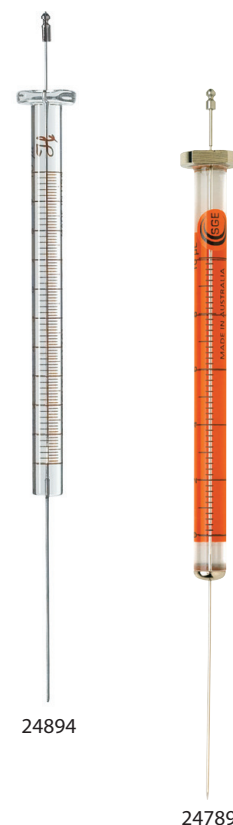
Hamilton

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

SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
10 µL	F	23	42 mm	Cone	10F-HP-GT-0.63	002812	ea.	24789
10 µL	F	23-26	42 mm	Cone	10F-AG-GT-0.63/0.47C	002826	ea.	22256
10 µL	R	23-26	42 mm	Cone	10R-HP-GT-0.63/0.47	002829	ea.	21220

NEW!



Replacement Needles

for Agilent 7673, 7683, 7693A, and 6850 Autosampler Syringes

Hamilton

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

SGE

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

Do not reuse PTFE washers.

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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 Plunger Assembly, PTFE-Tipped for Agilent 7673, 7683, 7693A, and 6850 Autosampler Syringes

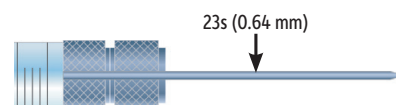
SGE

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

Needle Gauge for Agilent 7673, 7683, 7693A, and 6850 Syringes

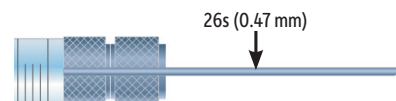
Single Gauge Needle (23s)

- 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.



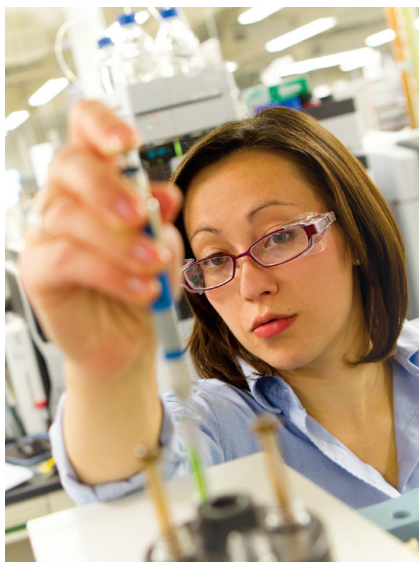
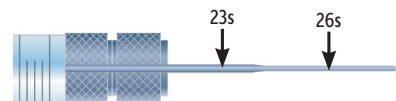
Single Gauge Needle (26s)

- 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.



Precision in all we do ensures quality for you.

Cross-Reference for Agilent Syringes

Similar to Agilent Part #	Restek Part #	Description	Page
5181-1267	21212, 24596	10 µL Standard Syringe, Fixed Needle, 23-26 Gauge	374
5181-1273	21210, 24593	5 µL Standard Syringe, Fixed Needle, 23-26 Gauge	374
5181-3319	20166	Needle for 10 µL Standard Syringe, 23-26 Gauge	375
5181-3321	24598	10 µL Standard Syringe, Removable Needle, 23-26 Gauge	374
5181-3358	24919	PTFE-Tipped Plunger for 10 µL Standard Syringe, Removable Needle	390
5181-3360	21215, 24600	10 µL Standard Syringe, Fixed Needle, 23-26 Gauge (6-pk.)	374
5181-3365	21218	PTFE-Tipped Plunger for 10 µL Standard Syringe, Fixed Needle	376
5181-8809	24894, 24789	10 µL Gas-tight Syringe, Fixed Needle, 23 Gauge	375
5181-8811	20164, 24825	Needle for 10 µL Gas-tight Syringe, 23 Gauge	375
5181-8813	21224	10 µL Gas-tight Syringe, Removable Needle, 23 Gauge	375
5182-0830	24821	Needle for 0.5 µL Standard Syringe, 23 Gauge	375
5182-0832	20166	Needle for 5-10 µL Autosampler Syringe, 23-26 Gauge	375
5182-0834	20172	5 µL Standard Syringe, Removable Needle, 23 Gauge	374
5182-0835	21223	5 µL Standard Syringe, Removable Needle, 23-26 Gauge	374
5182-0875	20170, 24783	5 µL Standard Syringe, Fixed Needle, 23 Gauge (6-pk.)	374
9301-0713	20167, 24785	10 µL Standard Syringe, Fixed Needle, 23 Gauge	374
9301-0714	24595, 24784	10 µL Standard Syringe, Fixed Needle, 26 Gauge	374
9301-0725	20169, 24787	10 µL Standard Syringe, Fixed Needle, 23 Gauge (6-pk.)	374
9301-0891	24592, 24780	5 µL Standard Syringe, Fixed Needle, 26 Gauge	374
9301-0892	20168, 24781	5 µL Standard Syringe, Fixed Needle, 23 Gauge	374

Merlin MicroShot Injector

- NIST traceability assures accurate injections.
- Fixed volume reduces sampling error.
- Saves time—no need to transfer to autosampler vials.
- Prevents bent syringe plungers.
- Five injection volumes available.*

Increase the accuracy and reproducibility of manual injections with the Merlin MicroShot injector. This new injector is calibrated to NIST reference standards to assure accurate and traceable displacement. Precise repeated injections of the preset volume can be made using a standard autosampler syringe with less variation than when injecting by hand. The trigger mechanism provides rapid sample delivery, which reduces needle residence time in the injection port and minimizes potential sample discrimination.

The Merlin MicroShot injector allows convenient sampling from a wide variety of containers, so you can save time by eliminating the need to transfer aliquots into autosampler vials. The design of this unit also includes a plunger support, which protects the syringe plunger and prevents it from bending.

Fits Agilent-style (ball-end plunger) autosampler syringes with either fixed or removable, 23- or 26-gauge needles.

Description	Merlin cat.#	qty.	Restek cat.#
0.1 µL injection volume	701-01	ea.	22226
0.2 µL injection volume	701-02	ea.	22227
0.5 µL injection volume	701-05	ea.	22228
1.0 µL injection volume	701-10	ea.	22229
2.0 µL injection volume	701-20	ea.	22230

*Syringe not included. Requires Agilent-style (ball-end plunger) autosampler syringe.



22226



Sky
Inlet Liners

True Blue Performance

Exceptionally inert Sky® inlet liners with state-of-the-art deactivation improve trace-level analysis—and now come with a 100% satisfaction guarantee!*

See page 193–202.

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* For details on our 100% satisfaction guarantee, visit www.restek.com/sky



24956

Autosampler Syringes for Bruker/Varian 8000 Series GCs

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

Hamilton

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

SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
Bruker/Varian 8035, 8100, & 8200 Syringes								
10 µL*	R	25	53 mm	S/Hole	10R-VA8X-II	002924	ea.	24852

Bruker/Varian CP 8400, CP8410 Syringes

10 µL	F	23	50 mm	Cone	10F-VA8400-5/0.63C	002951	ea.	24923
10 µL	F	26	50 mm	Bevel	10F-VA8400-5/0.47	002950	ea.	21202
10 µL	R	26	50 mm	Cone	10R-VA8400-5/0-0.47C	002952	ea.	24930

*Gas-tight syringe.



24857

Replacement Needles for Bruker/Varian 8000 Series Autosampler Syringes

SGE

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

*Straight needle shaft, 0.20 mm ID needle, for use with viscous samples.

**Tapered needle shaft, 0.12 mm ID needle.

High Dynamic (HD) Headspace Syringes

for CTC CombiPAL Autosamplers

- High Dynamic (HD) plunger optimized for higher throughput in the headspace technique.
- Excellent performance over a large range of temperatures and temperature gradients.
- Increased lifetime, as compared to traditional headspace syringes.
- Increased accuracy and reproducibility of headspace GC analysis.

Hamilton

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton Model	Hamilton cat.#	qty.	Restek cat.#
1.0 mL	N	23	2"/51 mm	5	1001	203082	ea.	26552
2.5 mL	N	23	2"/51 mm	5	1002	203084	ea.	26553
5.0 mL	N	23	2"/51 mm	5	1005	203086	ea.	26554
1.0 mL	N	26	2"/51 mm	5	1001	203141	ea.	26555
2.5 mL	N	26	2"/51 mm	5	1002	203181	ea.	26556
5.0 mL	N	26	2"/51 mm	5	1005	203182	ea.	26557

Replacement Plungers for HD-Type CTC CombiPAL AS Syringes

Hamilton

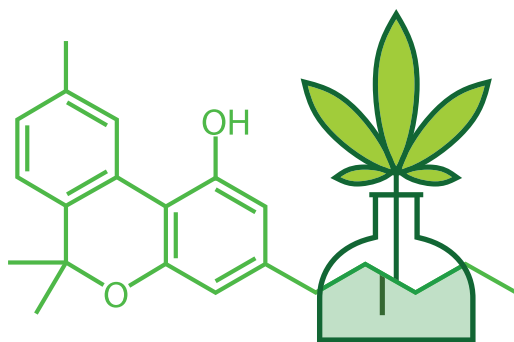
Volume	Hamilton Model	Hamilton cat.#	qty.	Restek cat.#
1.0 mL	1001	207114	ea.	26558
5.0 mL	1005	207116	ea.	26560



26554



26560



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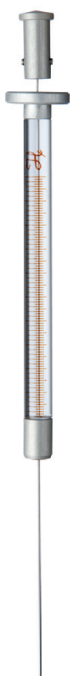
Guide to Needle Termination Codes

Hamilton:

- (N) Cemented Needle
- (RN) Removable Needle
- (ASN) Autosampler Cemented Needle
- (ASRN) Autosampler Removable Needle
- (TLL) PTFE 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



22757



24922

Autosampler Syringes for CTC GCs

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

Hamilton

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

Due to collar design, Hamilton syringes may not work with older generation LEAP autosamplers.

*Gas-tight syringe.

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

SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
0.5 µL	R	23	50 mm	Cone	0.5BNR-C/F-0.63	000492	ea.	24928
0.5 µL	R	26	50 mm	Cone	0.5BNR-C/F-0.47	000490	ea.	24926
5 µL	F	23	50 mm	Cone	5F-C/F-5/0.63	001981	ea.	24921
5 µL	F	26	50 mm	Cone	5F-BT-5/0.47	0019821	ea.	24920
10 µL*	F	23	50 mm	Cone	10F-BT-GT-5/0.63C	0029871	ea.	22749
10 µL	R	23	50 mm	Cone	10R-BT-0.63	0029841	ea.	24932
10 µL*	F	23	50 mm	Cone	10F-C/T-GT-5/0.63C	002987	ea.	22254
10 µL	F	23	50 mm	Cone	10F-C/T-5/0.63C	002981	ea.	22255
10 µL	F	26	50 mm	Cone	10F-BT-5/0.47C	0029801	ea.	24922
10 µL	F	26	50 mm	Cone	SK-10F-BT-5/0.47C	0029861	6-pk.	24925
10 µL	F	26	50 mm	Cone	10F-C/T-5/0.47C	002980	ea.	22252
10 µL	F	26	50 mm	Cone	10F-C/T-5/0.47C	002986	6-pk.	22253
25 µL*	F	23	50 mm	Cone	25F-C/T-GT-5/0.63C	003987	ea.	23897
25 µL*	F	23	50 mm	Cone	25F-BT-GT-5/0.63C	0039871	ea.	22751
25 µL*	R	26	50 mm	S	25R-C/T-GT-5/0.47H	003988	ea.	23899
100 µL*	F	23	50 mm	Cone	100F-C/T-GT-5/0.63C	005335	ea.	22753
100 µL*	R	26	50 mm	Cone	100R-C/T-GT-5/0.47C	005333	ea.	22754

*Gas-tight syringe.

Replacement Needles for CTC Autosampler Syringes

SGE

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

Replacement Plungers for CTC Autosampler Syringes

SGE

Syringe Volume	Needle Term.	Model	SGE cat.#	qty.	Restek cat.#
25 µL	F	P25F-C/T-GT	031817	ea.	23907
25 µL	F	25F-BT-GT	0318171	ea.	23900

Autosampler Syringes for PerkinElmer Autosystem and Clarus 500 GCs

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

Hamilton

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

SGE

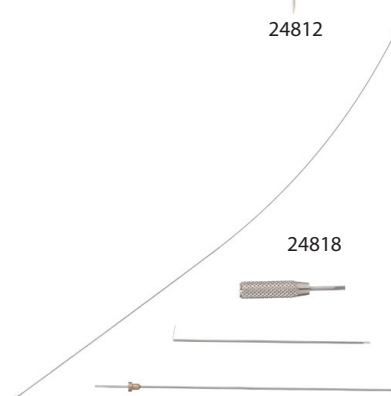
Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
0.5 µL	R	23	70 mm	Cone	0.5BR-PE-0.63	000478	ea.	24811
0.5 µL	R	26	70 mm	Cone	0.5BR-PE-0.47	000475	ea.	24810
5 µL	F	23	70 mm	Cone	5F-PE-0.63	001954	ea.	24813
5 µL*	F	23	70 mm	Cone	5F-PE-GT-0.63	001957	ea.	24815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

*Gas-tight.

Replacement Needle and Plunger Kit for PerkinElmer Autosampler Syringes

SGE

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



Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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



24530



24843

Autosampler Syringes for Shimadzu GCs

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

Hamilton

for Shimadzu AOC 9 GCs

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

SGE

for Shimadzu AOC 14, 17, 20, and 20i GCs

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

*Gas-tight syringe.



24749

Replacement Needles for Shimadzu Autosampler Syringes

SGE

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
0.5 µL	23	42 mm	Cone	033745	ea.	24747
10 µL	23	42 mm	Cone	037747	2-pk.	24749
10 µL	26	42 mm	Cone	037745	2-pk.	24748

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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

Syringes for Thermo Scientific RSH Autosampler

SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
5 µL	F	23	57 mm	Cone	5F-RTC/RSH-5.7/0.63C	001861	ea.	23908
5 µL	F	23	85 mm	Cone	5F-RTC/RSH-8.5/0.63C	001863	ea.	23909
5 µL	F	26	57 mm	Cone	5F-RTC/RSH-5.7/0.47C	001865	ea.	23910
5 µL	F	26	85 mm	Cone	5F-RTC/RSH-8.5/0.47C	001867	ea.	23911
5 µL	R	23	57 mm	Cone	5R-RTC/RSH-5.7/0.63C	001871	ea.	23912
5 µL	R	23	85 mm	Cone	5R-RTC/RSH-8.5/0.63C	001873	ea.	23913
5 µL	R	26	57 mm	Cone	5R-RTC/RSH-5.7/0.47C	001875	ea.	23914
5 µL	R	26	85 mm	Cone	5R-RTC/RSH-8.5/0.47C	001877	ea.	23915
10 µL	F	23	57 mm	Cone	10F-RTC/RSH-5.7/0.63C	002861	ea.	23916
10 µL*	F	23	57 mm	Cone	10F-RTC/RSH-GT-5.7/0.63C	002862	ea.	23917
10 µL	F	23	85 mm	Cone	10F-RTC/RSH-8.5/0.63C	002863	ea.	23918
10 µL*	F	23	85 mm	Cone	10F-RTC/RSH-GT-8.5/0.63C	002864	ea.	23919
10 µL	F	26	57 mm	Cone	10F-RTC/RSH-5.7/0.47C	002865	ea.	23920
10 µL*	F	26	57 mm	Cone	10F-RTC/RSH-GT-5.7/0.47C	002866	ea.	23921
10 µL	F	26	85 mm	Cone	10F-RTC/RSH-8.5/0.47C	002867	ea.	23922
10 µL*	F	26	85 mm	Cone	10F-RTC/RSH-GT-8.5/0.47C	002868	ea.	23923
10 µL	R	23	57 mm	Cone	10R-RTC/RSH-5.7/0.63C	002871	ea.	23924
10 µL*	R	23	57 mm	Cone	10R-RTC/RSH-GT-5.7/0.63C	002872	ea.	23925
10 µL	R	23	85 mm	Cone	10R-RTC/RSH-8.5/0.63C	002873	ea.	23926
10 µL*	R	23	85 mm	Cone	10R-RTC/RSH-GT-8.5/0.63C	002874	ea.	23927
10 µL	R	26	57 mm	Cone	10R-RTC/RSH-5.7/0.47C	002875	ea.	23928
10 µL*	R	26	57 mm	Cone	10R-RTC/RSH-GT-5.7/0.47C	002876	ea.	23929
10 µL	R	26	85 mm	Cone	10R-RTC/RSH-8.5/0.47C	002877	ea.	23930
10 µL*	R	26	85 mm	Cone	10R-RTC/RSH-GT-8.5/0.47C	002878	ea.	23931
25 µL*	F	26	57 mm	Cone	25F-RTC/RSH-GT-5.7/0.47C 2	003866	ea.	23932
50 µL*	F	26	57 mm	Cone	50F-RTC/RSH-GT-5.7/0.47C	004866	ea.	23933
100 µL*	F	26	57 mm	Cone	100F-RTC/RSH-GT-5.7/0.47(0.11)C	005866	ea.	23934
250 µL*	F	26	57 mm	Cone	250F-RTC/RSH-GT-5.7/0.47C	006866	ea.	23935

*Gas-tight syringe.



23909



23928

Replacement Needles for Thermo Scientific RSH Autosampler Syringes

SGE

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
5 µL	23	57 mm	Cone	N5-RSH-5.7/0.63C 2-pk	036871	2-pk.	23942
5 µL	23	85 mm	Cone	N5-RSH-8.5/0.63C 2-pk	036873	2-pk.	23943
5 µL	26	57 mm	Cone	N5-RSH-5.7/0.47C 2-pk	036875	2-pk.	23944
5 µL	26	85 mm	Cone	N5-RSH-8.5/0.47C 2-pk	036877	2-pk.	23945
10 µL	23	57 mm	Cone	N10-RSH-5.7/0.63C 2-pk	037871	2-pk.	23946
10 µL	23	85 mm	Cone	N10-RSH-8.5/0.63C 2-pk	037873	2-pk.	23947
10 µL	26	57 mm	Cone	N10-RSH-5.7/0.47C 2-pk	037875	2-pk.	23948
10 µL	26	85 mm	Cone	N10-RSH-8.5/0.47C 2-pk	037877	2-pk.	23949



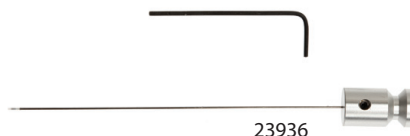
23945

Replacement Plungers for Thermo Scientific RSH Autosampler Syringes

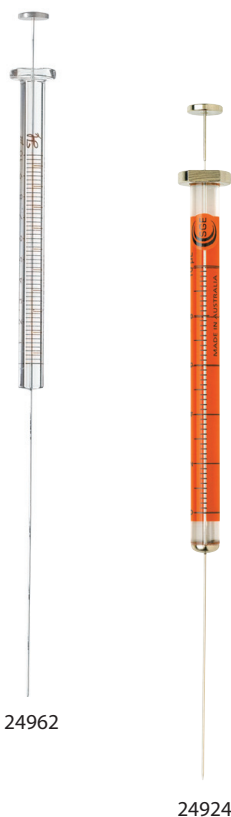
SGE

Syringe Volume	Needle Term.	SGE Model	cat.#	qty.	Restek cat.#
10 µL	F	P10F-RSH-GT	032810	ea.	23936
25 µL	F	P25F-RSH-GT	032815	ea.	23938
50 µL	F	P50F-RSH-GT	032821	ea.	23939
100 µL	F	P100F-RSH-GT	032825	ea.	23940
250 µL	F	P250F-RSH-GT	032831	ea.	23941

Note: Compatible with Thermo Scientific gas-tight syringes only.



23936



Autosampler Syringes for Thermo Scientific GCs

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

Hamilton

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton Model	cat.#	qty.	Restek cat.#
10 µL	N	25s	2"	2	701SN	80320	ea.	24961
10 µL	N	26s	3.15"	AS	701SN	80318	ea.	24962

SGE

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	SGE Model	cat.#	qty.	Restek cat.#
0.5 µL	R	23	50 mm	Cone	0.5BNR-C/F-0.63	000492	ea.	24928
0.5 µL	R	26	50 mm	Cone	0.5BNR-C/F-0.47	000490	ea.	24926
NEW! 5 µL	F	26	50 mm	Cone	5F-C/T-5/0.47C	001982	ea.	22251
NEW! 10 µL	F	23	50 mm	Cone	10F-C/T-5/0.63C	002981	ea.	22255
NEW! 10 µL	R	23	50 mm	Cone	10R-BT-0.63	0029841	ea.	24932
NEW! 10 µL	R	23	50 mm	Cone	10R-C/T-0.63C	002984	ea.	23903
NEW! 10 µL*	F	23	50 mm	Cone	10F-C/T-GT-5/0.63C	002987	ea.	22254
NEW! 10 µL	F	25	50 mm	Cone	10F-C/T-5/0.5C	002967	ea.	23902
NEW! 10 µL	F	26	50 mm	Cone	10F-C/T-5/0.47C	002980	ea.	22252
10 µL	F	26	50 mm	Cone	10F-BT-5/0.47C	0029801	ea.	24922
NEW! 10 µL	F	26	50 mm	Cone	10F-C/T-5/0.47C	002986	6-pk.	22253
10 µL	F	26	50 mm	Cone	SK-10F-BT-5/0.47C	0029861	6-pk.	24925
10 µL	F	26	80 mm	Cone	10F-BT-8/0.47C	0029921	ea.	24924
NEW! 10 µL	F	26	80 mm	Cone	10F-C/T-8/0.47C	002992	ea.	23904
10 µL	R	26	80 mm	Cone	10R-BT-8/0-0.47C	0029931	ea.	24934
NEW! 10 µL	R	26	80 mm	Cone	10R-C/T-8/0.47C	002993	ea.	23901

*Gas-tight syringe.

Replacement Needle and Plunger Kit for Thermo Scientific Autosampler Syringes

SGE

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
0.5 µL	26	50 mm	Cone	033770	kit	24927
0.5 µL	23	50 mm	Cone	033772	kit	24929

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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 Thermo Scientific Autosampler Syringes

SGE

Syringe Volume	Needle Gauge	Needle Length	Point Style	SGE cat.#	qty.	Restek cat.#
0.5 µL	26	50 mm	Cone	033770	kit	24927
0.5 µL	23	50 mm	Cone	033772	kit	24929
10 µL	26	80 mm	Cone	031535	3-pk.	24935
10 µL	23	50 mm	Cone	037787	2-pk.	24933

Replacement Plungers for Thermo Scientific Autosampler Syringes

SGE



Syringe Volume	Needle Term.	Model	SGE cat.#	qty.	Restek cat.#
10 µL	F	P10F-C/T-GT	0318120	2-pk.	23905

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	380, 384
•	•			24926	380, 384
•				23901	384
•				23902	384
•				23903	384
•				23904	384
•				22251	384
•				22252	384
•				22253	384
•				22254	384
•				22255	384
•				24921	380
	•	•	•	24922	380, 384
	•	•	•	24925	380, 384
	•	•	•	24932	380, 384
	•	•		24920	380
		•		22749	380
		•		24924	384
		•		24934	384

Replacement Needles for SGE Syringes for Thermo Scientific GCs

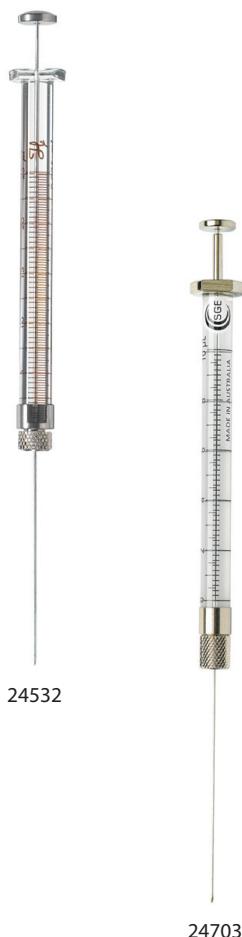
TriPlus	AS3000	AS2000	AS200/800	Restek cat.#	Page
•	•			24929	380, 384, 385
•	•			24927	384, 385
•	•	•	•	24933	380, 385
•		•	•	24935	385

Replacement Plungers for SGE Syringes for Thermo Scientific GCs

TriPlus	AS3000	AS2000	AS200/800	Restek cat.#	Page
•				23905	385

Hamilton Syringes

TriPlus	AS3000	AS2000	AS200/800	Restek cat.#	Page
		•	•	24962	384



24532

24703

Manual Microliter 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

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

*Replacement RN/R needles available. See page 390.

SGE

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

*Replacement RN/R needles available. See page 390.

**With plunger protection.

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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

SuperfleX Flexible Plunger Microliter Syringes

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

SGE

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

Reinforced Plunger Microliter 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

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

*Replacement RN/R needles available. See page 390.

SGE

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

*Replacement RN/R needles available. See page 390.



24542

24769



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 0.1 µL.
- Seal between the plunger and the needle can be tightened for high-pressure injection.
- Replaceable needle/plunger kits and barrels (available on request).

Hamilton

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

SGE

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

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

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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 Plunger-in-Needle Kits

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

SGE

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

PTFE Tip, Gas-Tight Syringes

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

Hamilton

Volume	Needle Term.	Needle Gauge	Needle Length	Point Style	Hamilton Model	cat.#	qty.	Restek cat.#
10 µL	N	26s	2"/51 mm	2	1701	80000	ea.	24557
10 µL	RN	26s	2"/51 mm	2	1701	80030	ea.	24558
25 µL	N	22s	2"/51 mm	2	1702	80200	ea.	24559
25 µL	RN	22s	2"/51 mm	2	1702	80230	ea.	24560
50 µL	N	22s	2"/51 mm	2	1705	80900	ea.	24561
50 µL	RN	22s	2"/51 mm	2	1705	80930	ea.	24562
100 µL	N	22s	2"/51 mm	2	1710	81000	ea.	24563
100 µL	RN	22s	2"/51 mm	2	1710	81030	ea.	24564
250 µL	N	22s	2"/51 mm	2	1725	81100	ea.	24567
250 µL	RN	22s	2"/51 mm	2	1725	81130	ea.	24568
500 µL	LTN	22	2"/51 mm	2	1750	81217	ea.	24571
500 µL	RN	22	2"/51 mm	2	1750	81230	ea.	24572
1 mL	LTN	22	2"/51 mm	2	1001	81317	ea.	24575
1 mL	RN	22	2"/51 mm	2	1001	81330	ea.	24576
1 mL	TLL	*		w/o slots	1001	81320	ea.	24578
2.5 mL	TLL	*		w/o slots	1002	81420	ea.	24584
2.5 mL	RN	22	2"/51 mm	2	1002	81430	ea.	24582
2.5 mL	N	22	2"/51 mm	2	1002	81417	ea.	24581
5 mL	TLL	*		w/o slots	1005	81520	ea.	20178
10 mL	TLL	*		w/o slots	1010	81620	ea.	20179
25 mL	TLL	*		w/o slots	1025	82520	ea.	24591
50 mL	TLL	*		w/o slots	1050	85020	ea.	24717
100 mL	TLL	*		w/o slots	1100	86020	ea.	24724

*Needles sold separately. See page 390.

SGE

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

*Needles sold separately. See page 390.



24558



24727



24761

PTFE Tip, Gas-Tight Syringe Replacement Needles

for Removable Needle Syringes

Materials: stainless steel needle, nickel-plated brass hub.

Hamilton

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

SGE

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



also available

Gas-Tight PTFE-Tipped Syringes for Agilent 7673, 7683, 7693A, and 6850 Autosamplers.

See **page 375**.

Replacement Plunger Assembly, PTFE-Tipped

for Agilent 7670, 7671, and 7672 ALS Autosampler Syringes

Hamilton

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



Gas-Tight Syringe Replacement Needles for Luer Lock Syringes

Hamilton

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

*For Waters U6K injection valve.

SGE

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

**For Rheodyne/Valco valves.

SGE Gas-Tight Syringes with Shut-off Valves

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

SGE

Syringe Fitted with Removable Needle and Valve

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

SGE

Syringe Fitted with Luer Lock Valve*

Volume	Model	SGE cat.#	qty.	Restek cat.#
1 mL	1MR-VLL-GT	008160	ea.	24886
2.5 mL	2.5MDR-VLL-GT	008560	ea.	24887
5 mL	5MDR-VLLMA-GT	008770	ea.	24888
10 mL	10MDR-VLLMA-GT	008970	ea.	24889
25 mL	25MDR-VLLMA-GT	009472	ea.	24890
50 mL	50MR-VLLMA-GT	009670	ea.	24891
100 mL	100MR-VLLMA-GT	009770	ea.	24892

*Order needles separately.

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

SGE

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

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

SGE

Luer Lock Needles

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

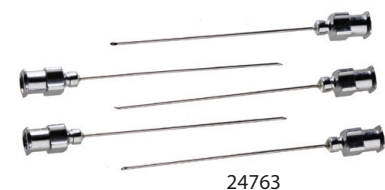
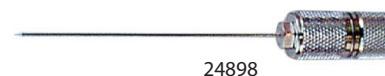
**Fits Rheodyne & Valco injection valves.

Economical Hamilton Syringe Guide*

- Prevents syringe plunger from bending.
- Adjustable stop prevents plunger damage.
- Easily installed.
- Used with syringe series 700/1700/1000.

Syringe Volume	Hamilton cat.#	qty.	Restek cat.#
25–500 µL	14906	ea.	24615
5–10 µL	14806	ea.	24616

*Syringe not included.



For complete loop-fill, the syringe capacity should be >2X the loop volume.



21260



24868



24941



24808

Guide to Needle Termination Codes

Hamilton:

(N) Cemented Needle
(RN) Removable Needle
(ASN) Autosampler Cemented Needle
(ASRN) Autosampler Removable Needle
(TLL) PTFE 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 Syringes for Rheodyne® & Valco® Valves

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

Hamilton

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

SGE

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

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

Hamilton

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

SGE

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

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 (cat.# 21118) to the regulator. Use with luer syringe needles.

Description	qty.	cat.#
100 µL Luer Syringe	ea.	20162
500 µL Luer Syringe	ea.	20163

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



20162

High-purity VOC single-stage regulator is described on page 453 of the Air Sampling Products section.

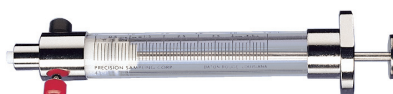
Replacement Needles for A-2 Luer Gas-Tight Syringes

Description	Needle Gauge	Size	qty.	cat.#
Luer Syringe Needles for 100 µL A2 Gas-Tight Syringes	22	0.028" OD x 0.006" ID x 2"	3-pk.	22783
Luer Syringe Needles for 500 µL A2 Gas-Tight Syringes	22	0.028" OD x 0.012" ID x 2"	3-pk.	22784

Heavy Duty Purge & Trap Syringe Dynatech Precision Sampling

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

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



21208

Luer Lock Valve Adaptors

Use a luer lock valve adaptor to connect a luer lock fitting to a Rheodyne® or Valco® valve.

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



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 subsample. The plunger stem is detachable, making sample storage easy.

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



21276

Syringe O-Rings

Syringe Volume	SGE cat.#	qty.	Restek cat.#
500 mL	032527	ea.	21278
1,000 mL	032532	ea.	21279

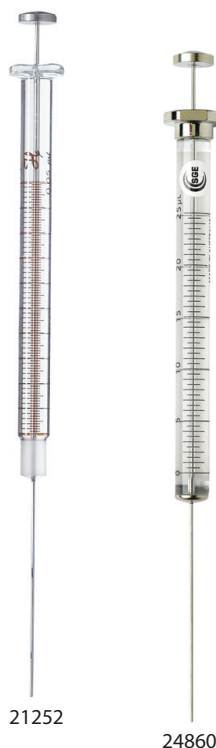


21279



21278

Septa also available (cat.# 27127, page 223).



Economical Microliter Liquid-Type Syringes

for Rheodyne® & Valco® Valves

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

Hamilton

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

SGE

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

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.
- PTFE-tipped plunger.

Hamilton

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

SGE

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

*Needles sold separately.

Syringes for Waters U6K Valves

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

Hamilton

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

Replacement Needles for Syringes for Waters U6K Valves

Hamilton

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



Syringes for LC Autosamplers

SGE
for Hitachi LC Autosamplers

Volume	SGE Model	cat. #	qty.	Restek cat. #
500 µL, M10 X1 Thread	500C-HITACH1	007660	ea.	22292



22292

SGE
for PerkinElmer LC Autosamplers

Volume	SGE Model	cat. #	qty.	Restek cat. #
250 µL, 1/4-28 UNF Thread	250D-CX-GT	006995	ea.	22297
500 µL, 1/4-28 UNF Thread	500D-CX-GT	007995	ea.	22298



22297

Syringes for Waters WISP LC Autosamplers

PTFE-tipped plungers

Hamilton

Volume	Hamilton Model	cat. #	qty.	Restek cat. #
250 µL, 1/4-28 UNF Thread	1725	80024	ea.	24529



SGE

Volume	SGE Model	cat. #	qty.	Restek cat. #
250 µL, 1/4-28 UNF Thread	250D-WISP	006690	ea.	22294



22294

Syringes for CTC LC Autosamplers

Hamilton

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

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



22746

SGE

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

*Gas-tight syringe.



22741