

PRECISION LIQUID HANDLING



Syringes



HAMILTON 
THE MEASURE OF EXCELLENCE™

The Measure of Excellence

Highest Quality Materials. From our pioneering efforts in designing and producing the first precision MICROLITER syringe, we have crafted our products from the finest materials and have controlled them with the same meticulous care and attention to detail that have become the hallmark of Hamilton products.

Unsurpassed Accuracy and Precision. Every one of our syringes is subjected to extensive quality control procedures and tested to make sure we meet the high expectations of precision and accuracy that you have come to expect from all Hamilton products.

Hamilton syringes are manufactured to be accurate within $\pm 1\%$ of nominal volume, and with precision within 1%, measured at 80% of total scale volume. The design of our barrel and plunger dimensions assures high levels of accuracy and precision. The Hamilton Company Quality System is ISO 9001 certified.



Quality Accuracy Precision



For nearly 50 years, Hamilton Company has been satisfying customer needs in the field of precision fluid measuring. It all started with syringes. Not commercial, mass-produced medical syringes, but precision measuring instruments. We at Hamilton Company combine top quality materials with skilled workmanship, ensuring the highest possible performance level of every precision fluid device we manufacture. With proper care and handling, Hamilton syringes will provide unsurpassed performance in precision fluid handling year after year.

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

Selecting The Right Syringe

Choosing the Right Hamilton Syringe for Your Application



1.

Is your sample
a gas or a liquid?

For a gas sample, use a **GASTIGHT®** syringe.

GASTIGHT 1000, 1700 and 1800 Series

10 μ L to 100 mL

This type of syringe*, for use with liquids and gases, features a precision-machined PTFE plunger tip.

1000/1700 Series

- 1700 Series 10 μ L to 500 μ L
- 1000 Series 1 mL to 100 mL
- Also available: ground glass tip (luer tip, LT) or PTFE luer lock (TLL) terminations



1800 Series

- 10 μ L to 250 μ L
- Reinforced plunger prevents plunger blow-out and plunger bending
- Replaceable syringe barrels and plungers



*All syringes are offered with cemented needles or removable needles unless otherwise noted.

For a liquid sample, choose between a **MICROLITER™**, **MODIFIED MICROLITER™**, or a **GASTIGHT** syringe.

MICROLITER **600, 700, 800** **and 900 Series**

2.5 μ L to 500 μ L

This type of syringe*, for use with liquids, incorporates a stainless steel plunger that is individually fitted to its matching syringe barrel. The plunger is not interchangeable or replaceable.

600 Series

- 2.5 μ L and 5 μ L
- Reinforced plungers prevent plunger bending
- Rugged, durable and long lasting



700 Series

- 5 μ L to 500 μ L
- Economical; great for chromatography
- Also available: ground glass tip (luer tip, LT) termination



800 Series

- 5 μ L to 250 μ L
- Reinforced plungers
- Plunger stop prevents plunger blow-out



900 Series

- 5 μ L and 10 μ L
- Reinforced plungers
- Perfect for students: rugged and durable



MODIFIED **MICROLITER** **7000 Series**

0.5 μ L to 5 μ L

- Positive displacement syringe has a tungsten plunger wire that travels inside the needle
- The needle essentially acts as the glass syringe barrel; no dead volume
- Replaceable plunger wire and needle



*All syringes are offered with cemented needles or removable needles unless otherwise noted.

Selecting The Right Syringe

2.

What is your dispense or injection volume?



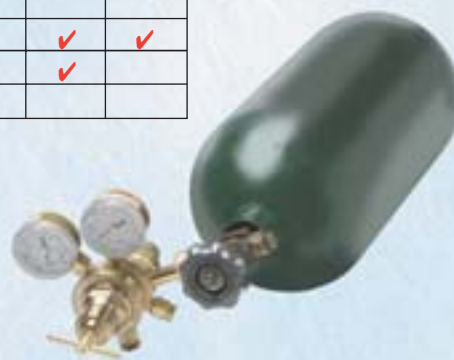
For a liquid sample:

Syringe size	600 Series	700 Series	800 Series	900 Series	7000 Series	1000 Series	1700 Series	1800 Series
0.5 µL - 5 µL					✓			
2.5 µL - 5 µL	✓							
5 µL - 10 µL				✓				
5 µL - 250 µL		✓	✓					
10 µL - 250 µL							✓	✓
10 µL - 500 µL		✓					✓	
1 mL - 100 mL						✓		



For a gas sample:

Syringe size	1000 Series	1700 Series	1800 Series
10 µL - 250 µL		✓	✓
10 µL - 500 µL		✓	
1 mL - 100 mL	✓		



3.

Which termination works best for your application?



- **Cemented**- not recommended for use with halogenated solvents, such as MeCl_2 ; not autoclavable
- **Removable**- advantageous for laboratories with multiple users; economical since you can replace the needle without having to purchase a new syringe
- **Luer Tip Cemented**- ground glass tip with a cemented needle; not recommended for use with halogenated solvents, such as MeCl_2 ; not autoclavable
- **Luer Tip**- ground glass tip can be used with most hypodermic needles; Kel-F® hub needles, PTFE tubing assemblies and connectors can also be used; offers flexibility
- **PTFE Luer Lock**- can be used with luer (Metal or Kel-F) hub needles, PTFE tubing assemblies and connectors can be used; offers flexibility
- **Knurled Hub**- replaceable needles; used only with the 7000 Series syringes

4.

Which needle point style works best?



Point Style AS: special conical style needle point designed to withstand the demands of multiple injections; exclusively used on autosampler syringes

Point Style 2: beveled non-coring needle point recommended for septum penetration; only needle gauges 26s – 22 are recommended for optimum septum penetration

Point Style 3: blunt needle point for use with HPLC injection valves and for sample pipetting

Point Style 4: 10 – 12° beveled needle point recommended for life science applications; special point styles such as 12°, 30°, and 45° are available on request

Point Style 5: conical needle with side port for penetration of septa, thin-gauged vinyls and plastics without coring; minimizes septum damage

5.

Do you need a rugged syringe?



- **Syringe Guide** – easily installed on a syringe to prevent the plunger from bending or from being pulled out
- **Reproducibility (Chaney) Adapter** – easily installed on a syringe for consistent, reproducible injections; also prevents plunger damage
- **Reinforced Plungers** – Series 600, 800, 900 and 1800 syringes offer an extended barrel which prevents bent plungers



Special Syringes



Super Syringes .5 L to 2 L

For air sampling, preparing gas standards; or calibrating reservoirs, pneumographs, and spirometers. Used in industries such as: mining, chemical production, grinding and mineral processing. Syringe barrel is made of a clear acrylic material.



Purge & Trap Syringes 5 mL and 25 mL

These syringes are designed for the analysis of drinking water samples according to EPA purge and trap concentration techniques.



Carbon Analyzer Syringes 50 μ L to 250 μ L

For water analysis with Total Organic Carbon (TOC) analyzers. Wetted parts are stainless steel and borosilicate glass. Syringes have a metal luer tapered hub cemented over a MICROLITER 700 Series N syringe. The luer hub fits precisely into the inlet of a total carbon analyzer.



PB600 Repeating Dispensers 10 μ L to 10 mL

Consistently dispense sample up to 50 times with the push of a button. The repeating dispenser works with MICROLITER or GASTIGHT syringes from 10 μ L to 10 mL.

Use this Syringe Volume

μ L Per Dispense

10 μ L	.2 μ L
25 μ L	.5 μ L
50 μ L	1 μ L
100 μ L	2 μ L
250 μ L	5 μ L
500 μ L	10 μ L
1 mL	20 μ L
1.25 mL	25 μ L
2.5 mL	50 μ L
5 mL	100 μ L
10 mL	200 μ L



SampleLock™ Syringes 50 µL to 100 mL

Lock your sample in the SampleLock syringe with the easy-to-use twist valve. An internal standard can be injected through the valve port into samples contained in the SampleLock syringe. Also, pre-pressurize gaseous samples prior to GC injection. The positive rear plunger stop prevents loss of sample and plunger blowout at elevated pressures.



Digital Syringe™ .5 µL to 500 µL

- The only N.I.S.T. traceable, calibrated syringe device available
- Comes completely calibrated with its own "Certificate of Calibration"
- Easy-to-read LCD screen displays volume dispensed within $\pm 0.5\%$ of the syringe volume
- Used with Hamilton syringes with total volumes of 0.5 to 500 µL

Get the best accuracy and precision data possible from a manually operated syringe with the Digital Syringe!

Unsurpassed Accuracy and Precision

Syringes operated manually require visual positioning of the plunger tip to the desired volume mark on the barrel of the syringe. Proper and consistent positioning of the plunger is often difficult due to subjective and personal mechanical errors. With the Digital Syringe, these problems are eliminated! Achieve accurate and precise injections or dispenses time after time.

Hamilton Certified

The easy-to-read LCD screen displays volumetric information in microliters within $\pm 0.5\%$ of the full scale volume of the syringe. That's at least twice as accurate and precise as compared to the normally published specifications of $\pm 1\%$ for manual syringes. And, Hamilton certifies the specification! The Digital Syringe is the only N.I.S.T. traceable, calibrated syringe device available. You receive a complete measuring instrument:

- A digital display device
- A serialized syringe of your choice
- A Certificate of Calibration



Optimized Plunger Movement

Not only is the Digital Syringe ergonomically pleasing and practical, the plunger movement is optimized for precise measuring.

- A "fine adjustment thumbwheel" allows you to easily dial-in specific syringe volumes.
- A "plunger drag adjustment" optimizes the rate of plunger movement to your personal preference.
- A "plunger brake" prevents premature dispensing of sample from the syringe.
- A built-in "plunger stop" assures you of repetitive, accurate volume displacements every time.

So to achieve unsurpassed accuracy and precision with manual syringe injections or dispenses, ask for a Digital Syringe!

OTHER SYRINGES AVAILABLE

Please call our Customer Service Department to request any of the following syringe catalogs:

- **LIFE SCIENCE SYRINGES**
- **CHROMATOGRAPHY SYRINGES**
- **INSTRUMENT SYRINGES**

Syringe Accessories



Reproducibility (Chaney) Adapter

For consistent, reproducible injections. It also prevents the plunger from bending. The adjustable stop prevents plunger damage. Easily installed. Available for the 700, 800, 900, 1700, 1800 and 7000 series.



Syringe Guide

Prevents the plunger from bending. It also prevents the plunger from being pulled out. Easily installed. Available for the 700, 1700 and 7000 series.



MTB Sampling Valve

This lever-actuated on/off valve is used for storing and transporting samples in any GASTIGHT TLL syringe.



Septum Adapter

Store and sample syringe contents with this adapter. It attaches to any TLL syringe or luer lock fitting. The septum is replaceable.



Removable (RN) Adapters

There are three different removable (RN) adapters for 250 μ L and larger removable needle (RN) syringes. The port I.D. of .039" allows sample spiking with a 701N syringe. It provides connection to threaded fittings, tubing assemblies, tees, and crosses.



Syringe Calibration Service

Hamilton Company offers a calibration service for precision syringes and Digital Syringes. A Certificate of Calibration is provided with the product and the procedure is performed with an unbroken chain of calibrations traceable to N.I.S.T.

How to Order a Calibrated Syringe

Calibrated precision syringes are available only at the time of purchase. To order a calibrated syringe, add the prefix "CAL" to the beginning of the syringe's part number.

For example, to order a 701N, 10 μ L syringe (part # 80300), but calibrated, request part # CAL80300.

Digital Syringes are automatically calibrated prior to shipment. A recalibration service is available for the Digital Syringe. Simply contact Hamilton's Customer Service Department to obtain an RGA # (returned goods authorization number). Only return the digital unit without the syringe. Customer will be charged the calibration fee plus the cost of a syringe.

Tips to Assure Accuracy and Precision

- When using a Hamilton syringe, grasp only the syringe flange and plunger button. By doing so, variations in liquid measurement due to body heat are avoided.
- Pump the plunger with the syringe needle immersed in the fluid to be transferred. This will expel any trapped air in the needle and syringe. Minimize the use of a dry syringe.
- If the plunger is accidentally removed from the syringe barrel, wipe it carefully with a lint-free tissue. Reinsert the plunger into the barrel and pump deionized water or acetone through the needle and syringe. In the case of GASTIGHT plungers, re-wet the PTFE plunger tip prior to reinserting it into the barrel. Avoid touching the plunger since any abrasions, scratches, or oil from one's fingers will often interfere with proper plunger operation.

Syringe Lubrication

A clean syringe does not require any lubricating grease. Grease may cause a variety of problems including: sample cross contamination, seizing of the plunger in the barrel or barrel damage.

Syringe Terminations

Syringe terminations are offered in a number of different configurations designed to accommodate a broad range of applications. From cemented to removable needles, and luer taper/PTFE luer lock to special syringe fittings, syringe barrel terminations serve a key function at the interface of a syringe and its mating connection.



N, Cemented Needle

Needles are cemented into the glass syringe barrel at a point corresponding to the zero graduation mark; not autoclavable.



LTN, Luer Tip Cemented Needle

Needles are cemented into the glass syringe barrel at a point corresponding to the zero graduation mark; not autoclavable.



RN, Removable Needle

Removable needles seat precisely to the zero graduation mark of the syringe; autoclavable when disassembled. Allows the use of different specification needles on the same syringe barrel.



LT, Luer Tip

Ground glass syringe barrel with a male luer taper accepts most hypodermic needles; autoclavable when disassembled. Use Kel-F hub needles and connectors for a tight seal.



TLL, PTFE Luer Lock (with or without slots)

Male luer taper with nickel-plated brass hub accepts, and locks in place, luer hub needles and connectors; autoclavable when disassembled. Used with Hamilton diluters/dispensers, in OEM applications and in manual operations.



KH, Knurled Hub

Removable needle, knurled hub is used on 7000 Series syringes, exclusively; autoclavable when disassembled. Knurled hub enables 6000 psig maximum injection pressures and the attachment of a spacer for repeatable depth injections.



CA, Carbon Analyzer

Special male luer tapered hub is cemented on the syringe barrel; not autoclavable. Used with TOC (total organic carbon) analyzers.



SL, SampleLock™

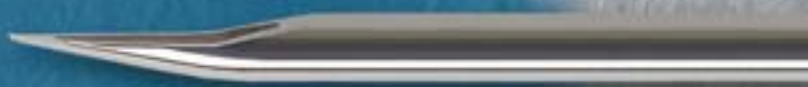
On/Off syringe valve with RN needle is cemented to a syringe barrel; not autoclavable. Used for headspace, environmental sample collection and storage, pre-pressurization of gaseous samples for GC analysis, and sample spiking.

Needle Point Styles

Several different needle point styles are offered on Hamilton syringe and needle products depending upon the application. Syringes and needles manufactured by Hamilton Company are intended for scientific research and laboratory use only and are not intended for human *in vivo* use.

Point Style 2:

Beveled, non-coring needle point recommended for septum penetration.



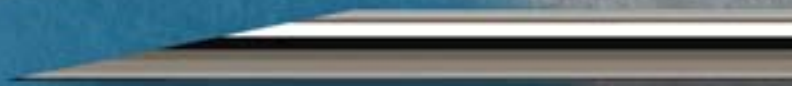
Point Style 3:

Blunt needle point for use with HPLC injection valves and for sample pipetting.



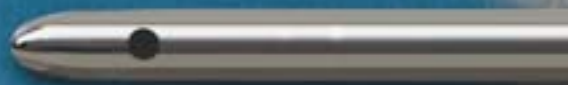
Point Style 4:

10° – 12° beveled needle point recommended for life science applications. Special point styles such as 12°, 30°, and 45° are available on request.



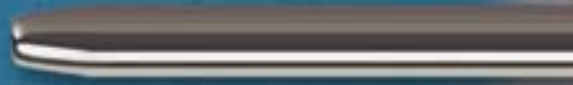
Point Style 5:

Conical needle with side port for penetration of septa, thin-gauged vinyls and plastics without coring.



Point Style AS:

Special conical style needle point used exclusively on autosampler syringes.



700 Series MICROLITER Syringes

5 μ L - 500 μ L

- Cemented needles (N), removable needles (RN), or luer tip (LT)
- Plungers and syringe barrels are not interchangeable or replaceable
- Tight tolerances between the plunger and the barrel



- For use with liquids
- All syringes are autoclavable when disassembled except for the cemented needle (N) syringes















700 Series MICROLITER Six Pack Syringes

10 μ L Six Packs

- Savings! Syringes cost less in six packs
- Convenience! Packaging container lets you keep syringes close at hand
- Identification! Six numbered Ident-A-Dots provide quick syringe identification



Ordering Information

		Volume	5 µL	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
		Model	75	701	702	705	710	725	750
		Gauge**	26s	26s	22s	22s	22s	22s	22
N (Cemented Needle)			87900	80300	80400	80500	80600	80700	80800
N (Cemented Needle)			87919	80383	80465	80565	80665	80765	80865
SN (Cemented Needle) (Specify needle gauge, length, and point style)			87908	80308	80408	80508	80608	80708	80808
RN (Removable Needle)			87930	80330	80430	80530	80630	80730	80830
RN (Removable Needle) Syringe (Needle not included)			7634-01	7635-01	7636-01	7637-01	7638-01	7639-01	7640-01
LT (Luer Tip) (Needle not included)				80301	80401	80501	80601	80701	80801
PB600 Repeating Dispenser (Syringe not included)					83700	83700	83700	83700	83700
Reproducibility (Chaney) Adapter (Syringe not included)			14700	14700	14725	14725	14725	14725	14725
Syringe Guide (Syringe not included)			14806	14806	14906	14906	14906	14906	14906
Digital Base Unit (Syringe not included)			Add the prefix "DS" to the beginning of the syringe's part number. (Base unit not sold separately)						



Syringe Calibration Service

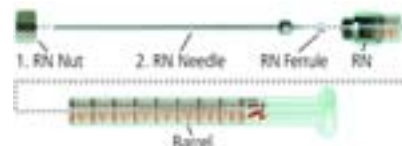
Add the prefix "CAL" to the beginning of the syringe's part number.

Typical Operating Parameters





- Maximum temperature for Cemented Needle 50° C (122° F) and all others 115°C (239° F).
- Maximum pressure rating is 2000 psig for 5 µL to 100 µL, all others are 1000 psig.

Replacement Parts

	Volume	5 µL	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
Description	Model	75	701	702	705	710	725	750
1. RN Nut		30902	30902	30902	30902	30902	30902	30902
2. RN Needle, see page 31								



Ordering Information

		Volume	10 µL
		Model	701
		Gauge**	26s
N (Cemented Needle)			80366
RN (Removable Needle)			80336

600 Series MICROLITER Syringes

2.5 μ L - 5 μ L

- Removable needles (RN)
- Reinforced plungers
- Plungers and syringe barrels are not interchangeable or replaceable



- For use with liquids
- Syringes are autoclavable when disassembled

7000 Series MODIFIED MICROLITER Syringes




.5 μ L - 5 μ L

- Removable needles (KH)
- Positive displacement
- Sample contained in the needle
- No dead volume
- Replaceable syringe parts



- For use with liquids
- Syringes are autoclavable when disassembled

Ordering Information

		Volume	2.5 µL	5 µL
		Model	62	65
		Gauge**	22s	22s
RN (Removable Needle)			87942	87943
RN (Removable Needle) Syringe (Needle not included)			7632-01	7633-01



Syringe Calibration Service

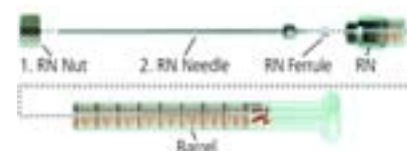
Add the prefix "CAL" to the beginning of the syringe's part number.

Typical Operating Parameters






- Maximum temperature 115°C (239°F).
- Maximum pressure rating is 2000 psig.

Replacement Parts

Description	Volume Model	2.5 µL	5 µL
1. RN Nut		30902	30902
2. RN Needle, see page 31			



Ordering Information

		Volume	.5 µL	.5 µL	1 µL	1 µL	2 µL	2 µL	5 µL
		Model	7000.50C	7000.5	7001	7101	7002	7102	7105
		Gauge**	32	25	25s	22s	25	23	24
KH (Knurled Hub)				86259	80135	86211	88411	88511	88011
KH (Knurled Hub)			86257*	86250	80100	86200	88400	88500	88000
Digital Base Unit (Syringe not included)			Add the prefix "DS" to the beginning of the syringe's part number. (Base unit not sold separately)						



Syringe Calibration Service

Add the prefix "CAL" to the beginning of the syringe's part number.

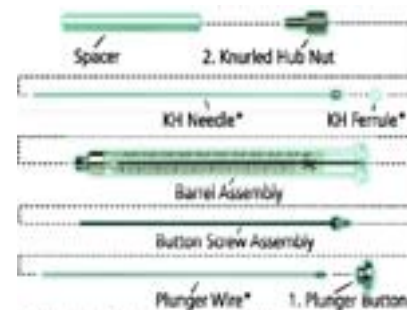
* Needle length is 3.94"

Typical Operating Parameters

- Maximum temperature 50°C (122°F).
- Maximum pressure rating is 6000 psig.

Replacement Parts

Description	Volume Model	.5 µL	.5 µL	1 µL	1 µL	2 µL	2 µL	5 µL
1. Plunger Button		17778	17778	17778	17778	17778	17778	17778
2. Knurled Hub Nut		17658	17789	17789	17789	17789	17789	17789
3. Repair Kit Point Style 2			17887	17888	17890	17891	17892	17893
Repair Kit Point Style 3		86258	17187	17188	17190	17191	17192	17193



*3. Repair kit includes KH needle, KH ferrule, plunger wire and instruction sheet.

800 Series MICROLITER Syringes

5 μ L - 250 μ L

- Removable needles (RN) or cemented needles (N)
- Reinforced plungers
- Plunger assemblies are replaceable
- Plunger stop prevents plunger blowout









- For use with liquids
- Syringes are autoclavable when disassembled except for cemented needle (N) syringes

800 Series MULTI-PAK™ Syringes

- Contains one handle and a selection of syringe barrel/plunger combinations
- Removable needles (RN)
- Reinforced plunger



Ordering Information

		Volume Model	5 μ L 85	10 μ L 801	25 μ L 802	50 μ L 805	100 μ L 810	250 μ L 825
		Gauge**	26s	26s	22s	22s	22s	22s
N (Cemented Needle)			84850	84852	84854	84856	84858	
RN (Removable Needle)			84851	84853	84855	84857	84859	84861
RN (Removable Needle) Syringe (Needle not included)			7641-01	7642-01	7643-01	7644-01	7645-01	7646-01
Reproducibility (Chaney) Adapter (Syringe not included)			32146	32146	32146	32146	32146	32146



Syringe Calibration Service

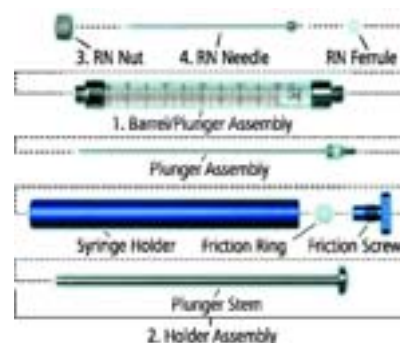
Add the prefix "CAL" to the beginning of the syringe's part number.

Typical Operating Parameters

- Maximum temperature for Cemented Needle 50°C (122°F) and Removable Needle 115°C (239°F).
- Maximum pressure rating is 2000 psig except for 250 μ L which is 1000 psig.

Replacement Parts

Description	Volume Model	5 μ L 85	10 μ L 801	25 μ L 802	50 μ L 805	100 μ L 810	250 μ L 825
1. Barrel/Plunger Assembly N		32150	32151	32152	32153	32154	32169
Barrel/Plunger Assembly RN		32134	32129	32117	32120	32123	32126
2. Holder Assembly		32135	32135	32135	32135	32135	32135
3. RN Nut		30902	30902	30902	30902	30902	30902
4. RN Needle, see page 31							



Ordering Information

Part Number	Description
84890	Standard MULTI-PAK (includes all items listed below)
32135	Handle for barrel/plunger
32129	801RN barrel/plunger, 10 μ L
32117	802RN barrel/plunger, 25 μ L
32120	805RN barrel/plunger, 50 μ L
32123	810RN barrel/plunger, 100 μ L
32126	825RN barrel/plunger, 250 μ L
30902	RN Nut
7758-02	Removable needles (26s/2"/2), 6/pk for 10-100 μ L syringes
7758-03	Removable needles (22s/2"/2), 6/pk for 10-100 μ L syringes
7779-03	Removable needles (22s/2"/2), 6/pk for 250 μ L syringes

900 Series MICROLITER Syringes







5 μ L - 10 μ L

- Removable needles (RN) or cemented needles (N)
- Reinforced plungers



- For use with liquids
- Syringes are autoclavable when disassembled except for cemented needle (N) syringes

Ordering Information

		Volume	5 μ L	10 μ L
		Model	95	901
		Gauge**	26s	26s
N (Cemented Needle)			87920	80360
RN (Removable Needle)			87925	80370
RN (Removable Needle) Syringe (Needle not included)			7647-01	7648-01
Reproducibility (Chaney) Adapter (Syringe not included)			32148	32148



Syringe Calibration Service

Add the prefix "CAL" to the beginning of the syringe's part number.

Typical Operating Parameters

- Maximum temperature for Cemented Needle 50°C (122°F) and Removable Needle 115°C (239°F).
- Maximum pressure rating is 2000 psig.

Replacement Parts

Description	Volume	5 μ L	10 μ L
	Model	95	901
1. RN Nut		30902	30902
2. RN Needle, see page 31			



Syringe Problems and Solutions

Problem	Syringe Solution	Syringe Series
Bending plungers	Reinforced plunger syringes Use a reproducibility adapter or syringe guide	600, 800, 900, 1800 700, 800, 900, 7000, 1000, 1700, 1800
Breaking syringe barrels	Replaceable barrel syringes	800, 1800
Bending needles	Removable needle (RN) syringes	600, 700, 800, 900, 1000, 1700, 1800, 7000
Syringe balance	Syringes with handles	800, 900, 1800
Plungers pulling or blowing-out of syringe barrel	Pull or blow-out prevention syringes	800, 1800
Plungers slide too easily	Adjustable plunger drag syringes	800, 1000, 1700, 1800

DON'T FORGET: (for GASTIGHT syringes)

Wet the PTFE plunger tip before inserting the plunger into the glass barrel.

1700 Series GASTIGHT Syringes





















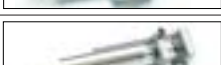

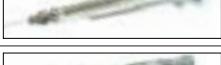
10 μ L - 500 μ L

- Cemented needles (N, LTN), removable needles (RN), luer tip (LT), PTFE luer lock (TLL), or PTFE luer lock w/ slots (TLL w/ slots)
- Precision-machined PTFE-tipped plungers
- Replaceable plungers



- For use with gases and liquids
- All syringes are autoclavable when disassembled except for the cemented needle (N, LTN) syringes and SampleLock syringes

Ordering Information

		Volume	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
		Model	1701	1702	1705	1710	1725	1750
		Gauge**	26s	22s	22s	22s	22s	22
LT (Luer Tip) (Needle not included)			80001	80201	80901	81001	81101	81201
LTN (Cemented Needle)	 							81217
LTSN (Cemented Needle) (Specify needle gauge, length, and point style)								81214
N (Cemented Needle)	 		80000	80200	80900	81000	81100	
SN (Cemented Needle) (Specify needle gauge, length, and point style)	 		80008	80208	80908	81008	81108	
N (Cemented Needle)	 		80075	80275	80975	81075	81175	
RN (Removable Needle)	 		80030	80230	80930	81030	81130	81230
RN (Removable Needle)	 		80065	80265	80965	81065	81165	81265
RN (Removable Needle) Syringe (Needle not included)			7653-01	7654-01	7655-01	7656-01	7657-01	7658-01
SampleLock Syringe	 				80956	81056	81156	81256
TLL (PTFE Luer Lock) w/o slots (Needle not included)				80222†	80920	81020	81120	81220
TLL with slots (Needle not included)					80927	81027	81127	81227
PB600 Repeating Dispenser (Syringe not included)			83700	83700	83700	83700	83700	83700
Reproducibility (Chaney) Adapter (Syringe not included)			14700	14725	14725	14725	14725	14725
Syringe Guide (Syringe not included)			14806	14906	14906	14906	14906	14906
Digital Base Unit (Syringe not included)								

Add the prefix "DS" to the beginning of the syringe's part number.
(Base unit not sold separately)



Syringe Calibration Service

Add the prefix "CAL" to the beginning of the syringe's part number.

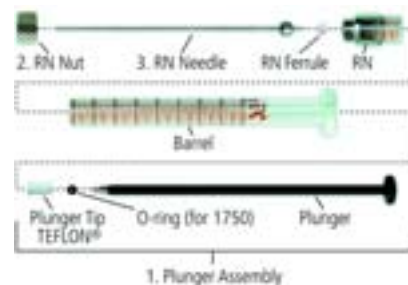
† TLL syringe plunger comes with stop.

Typical Operating Parameters

- Maximum temperature for Cemented Needle 50°C (122°F) and all others 115°C (239°F).
- Maximum pressure rating is 500 psig for 250 and 500 µL, 250 psig for SampleLock Syringes, and all others are 1000 psig.

Replacement Parts

Description	Volume Model	10 µL 1701	25 µL 1702	50 µL 1705	100 µL 1710	250 µL 1725	500 µL 1750
1. Plunger Assembly N		13205	1122-01	1162-01	1162-02	1162-03	
Plunger Assembly RN		13205	1122-01	1162-01	1162-02	1162-03	1169-01
Plunger Assembly LT/LTN		13205	1122-01	1162-01	1162-05	1162-03	1169-01
Plunger Assembly TLL/TLL w/Slots			13269†	1162-01	1162-02	1162-03	1169-01
Plunger Assembly SampleLock				1162-01	1162-02	1320-01	1321-01
2. RN Nut		30902	30902	30902	30902	30902	30902
3. RN Needle, see page 31							



1000 Series GASTIGHT Syringes

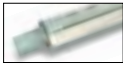




















1 mL - 100 mL

- Cemented needles (N, LTN), removable needles (RN), luer tip (LT), PTFE luer lock (TLL), or PTFE luer lock with slots (TLL w/ slots)
- Precision-machined PTFE-tipped plungers
- Replaceable plungers



- For use with gases and liquids
- All syringes are autoclavable when disassembled except for the cemented needle (N, LTN) syringes and SampleLock Syringes

Ordering Information

		Volume	1 mL	1.25 mL	2.5 mL	5 mL	10 mL	25 mL	50 mL	100 mL
		Model	1001	1001.25	1002	1005	1010	1025†	1050†	1100†
		Gauge**	22	22	22	22	22	22	22	22
LT (Luer Tip) (Needle not included)			81301	82001	81401	81501	81601			
LTN (Cemented Needle)		 (**1/2" / 2)	81317	82017	81417	81517	81617			
LTN (Cemented Needle)		 (**1/2" / 3)	81316		81416	81516				
LTN (Cemented Needle)		 (**1/2" / 5)	81343		81443	81543				
LTSN (Cemented Needle) (Specify needle gauge, length, and point style)		 (*1/2" / *)	81314	82014	81414	81514	81614			
RN (Removable Needle)		 (**1/2" / 2)	81330		81430	81530	81630			
RN (Removable Needle)		 (**1/2" / 3)	81365							
RN (Removable Needle) Syringe (Needle not included)			7649-01		7650-01	7651-01	7652-01			
SampleLock Syringe		 (**1/2" / 2)	81356		81456	81556	81656	86326	86336	86346
TLL (PTFE Luer Lock) w/o slots (Needle not included)			81320		81420	81520	81620	82520	85020	86020
TLL with slots (Needle not included)			81327		81427	81527	81627	82527	85027	
TLL w/out flange, w/out slots (Needle not included)								82521	85021	
TLL w/out flange, w/ slots (Needle not included)								82525	85025	
PB600 Repeating Dispenser (Syringe not included)			83700	83700	83700	83701	83701			



Syringe Calibration Service

Add the prefix "CAL" to the beginning of the syringe's part number.

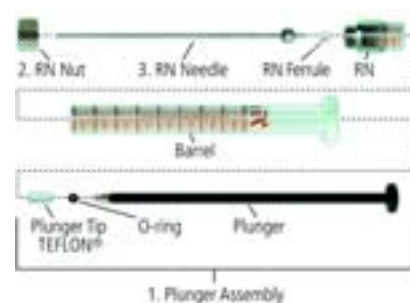
† TLL male luer fitting is made of Kel-F (CTFE) material, not PTFE.

Typical Operating Parameters

- Maximum temperature for Cemented Needle 50° C (122° F) and Removable Needle 115° C (239° F).
- Maximum pressure rating is 200 psig for 1 mL to 10 mL, all others are 100 psig.

Replacement Parts

	Volume	1 mL	2.5 mL	5 mL	10 mL	25 mL	50 mL	100 mL
Description	Model	1001	1002	1005	1010	1025	1050	1100
1. Plunger Assembly LT/LTN/RN		1359-01	1360-01	13230	13231			
Plunger Assembly TLL w/ & w/o slots		1359-01	1360-01	13230	13231	13271	13272	13240
2. RN Nut		30902	30902	30902	30902	30902	30902	30902
3. RN Needle, see page 31								



1800 Series GASTIGHT Syringes

10 μ L - 250 μ L

- Cemented needles (N) or removable needles (RN)
- Precision-machined PTFE-tipped plungers
- Reinforced plungers
- Plunger assemblies are replaceable



- For use with gases and liquids
- Removable needle (RN) syringes are autoclavable when disassembled







Tubing Assemblies

- For use with LT or TLL Hamilton syringes and connectors
- PTFE tubing with Kel-F hub on one end or both ends when specified
- Also available: Stainless steel tubing (see page 32)



- Standard 12" length
- Kel-F hub maximum temperature 200° C
- PTFE Tubing maximum temperature 260° C

Ordering Information

		Volume	10 µL	25µL	50 µL	100 µL	250 µL
		Model	1801	1802	1805	1810	1825
		Gauge**	26s	22s	22s	22s	22s
N (Cemented Needle)			84875	84878	84881	84884	84887
RN (Removable Needle)			84877	84880	84883	84886	84889
RN (Removable Needle) Syringe (Needle not included)			7659-01	7660-01	7661-01	7662-01	7663-01
Reproducibility (Chaney) Adapter (Syringe not included)			32146	32146	32146	32146	32146



Syringe Calibration Service

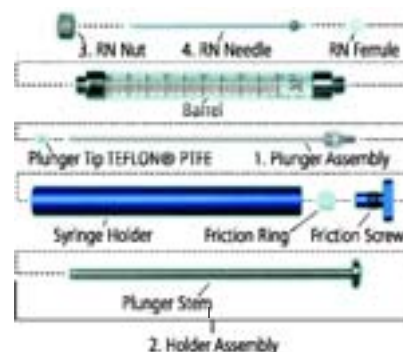
Add the prefix "CAL" to the beginning of the syringe's part number.

Typical Operating Parameters



- Maximum temperature for Cemented Needle 50°C (122°F) and Removable Needle 115°C (239°F).
- Maximum pressure rating is 1000 psig for all volumes except for 250 µL which is 500 psig.

Replacement Parts

Description	Volume Model	10 µL 1801	25 µL 1802	50 µL 1805	100 µL 1810	250 µL 1825
1. Plunger Assembly N		32193	1160-01	1161-01	1161-02	4871-01
Plunger Assembly RN		32193	1160-01	1161-01	1161-02	1161-03
2. Holder Assembly		32135	32135	32135	32135	32135
3. RN Nut		30902	30902	30902	30902	30902
4. RN Needle, see page 31						



Ordering Information

Gauge	Tubing Only			
30	20930	90630	90680	86510
28	20928	90628	90678	86510
26	20926	90626	90676	86510
24	20924	90624	90674	86510
22	20922	90622	90672	86510
20	20920	90620	90670	86510
19	20919	90619	90669	86510
18	20918	90618	90668	86510
17	20917	90617	90667	86510
16	20916	90616	90666	86510
15	20915	90615	90665	86510
14	20914	90614	90664	86510
13	20913	90613	90663	86510
12	20912	90612	90662	86510
11	20911	90611	90661	86510
10	20910	90610	90660	86510
9	20909	90609	90659	86510
8	20908	90608	90658	86510
7	20907	90607	90657	86510
1/8"	20941	90641	90691	86510

* Specify length. ** Specify length and gauge.

Tubing with a hub is charged by the foot. Tubing Only is sold by the inch.

Environmental Syringes

Super Syringes

.5 L - 2 L

- PTFE luer lock (TLL) or tracheal adapter (accepts 5/8" I.D. flexible tubing)
- Clear acrylic syringe barrels



- For use with gases and liquids
- For air sampling, preparing gas standards, calibrating reservoirs, and pneumographs

Purge and Trap Syringes

5 mL - 10 mL

- SampleLock Purge & Trap GASTIGHT syringe with an easy-to-use twist valve



- For the analysis of drinking water samples according to EPA purge and trap concentration techniques (see EPA method 502.1, 502.2, 503.1, 524.1, and 524.2)

Carbon Analyzer Syringes



50 μ L - 250 μ L

- Metal luer tapered hub cemented over a MICROLITER 700 Series N syringe
- Plungers are not interchangeable or replaceable



- For water analysis with Total Organic Carbon (TOC)
- Wetted parts are stainless steel and borosilicate glass
- Luer hub fits precisely into the inlet of a total organic carbon analyzer

Ordering Information

		Volume Model	.5 L S0500	1 L S1000	1.5 L S1500	2 L S2000
TLL (PTFE luer lock)			86311	86312	86313	86314
Tracheal Adapter			86301	86302		



Syringe Calibration Service

Add the prefix "CAL" to the beginning of the syringe's part number.

Typical Operating Parameters

- Maximum temperature is 80°C (176°F)
- Maximum pressure rating is 30 psig.

Optional Accessories

- Septum Adapter, see page 29
- MTB Sampling Valve, see page 29
- Needles, see page 31

Ordering Information

Part Number	Model	Description
81570	1005SLPT	5 mL Purge & Trap Syringe
82570	1025SLPT	25 mL Purge & Trap Syringe
80300	701N	10 µL Syringe (26s/2"/2) for adding an internal calibration standard or surrogate sample to the Purge & Trap syringe
86789	HVDP 2-5	Purge & Trap Valve with female luer fitting for use with Tekmar™ and O-I purge and trap concentrators



Easily remove the syringe plunger and load water sample into the syringe barrel



Add an internal standard or surrogate sample directly to your sample through the twist valve with a 10 µL syringe



Connect the sample syringe directly to the purge and trap valve via the integral male luer fitting

Ordering Information

Part Number	Model	Volume	Gauge/Length/Point Style
80550	705CA	50 µL	(24/2"/I3)
80551	705CA	50 µL	(26/2.5"/I3)
80660	710CA	100 µL	(24/2"/I3)
80770	725CA	250 µL	(24/2"/I3)

Typical Operating Parameters

- Maximum temperature is 50°C (122°F).
- Maximum pressure rating is 2000 psig except for 250 µL which is 1000 psig.

Syringe Accessories

MTB Sampling Valve

- Lever-actuated on/off valve for storing and transporting samples in any GASTIGHT TLL syringe
- Kel-F hub needles attach to the valve
- Pressure tested to 100 psig; autoclavable
- Bore I.D., .039"



Septum Adapter

- Store and sample syringe contents through the Septum Adapter
- Attaches to any TLL syringe or luer lock fitting
- Replaceable septum



Removable (RN) Adapters

- For 250 μ L and larger removable needle (RN) syringes
- Port I.D. of .039" allows sample spiking with a 701N syringe
- Provides connection to threaded fittings, tubing assemblies, tees and crosses



Ordering Information

Part Number	Description
86580	MTB Sampling Valve

Ordering Information

Part Number	Description
31335	Septum Adapter (TLL), includes 12 septa
75810	Replacement Septa, 7 mm dia., 12/pk

Ordering Information

Part Number	Description
35081	Female Luer/Removable Needle Hub (L)
35080	Male Luer/Removable Needle Hub (L)
35083	Male Luer Lock/Removable Needle Hub (L)

Needles

Hub Needles (Gauge Index on page 35)

- Metal hub (N) or Kel-F hub (KF) needles in convenient six packs
- Metal hub (nickel plated brass) for use with TLL syringes and LT or TLL connectors
- Kel-F hub for use with LT and TLL syringes and connectors
- 304 stainless steel (sst.) needle
- Standard needle length: 2"/51 mm



Metal Hub Needles



Kel-F Hub Needles

Removable Needles (Gauge Index on page 35)

- For use with RN-style syringes and connectors
- 304 stainless steel (sst.) needles
- Convenient six packs



Small Gauge Needles
27-33







Large Gauge Needles
26s-22

Ordering Information

All needles sold in 6 packs.

Metal Hub (N)

Gauge	SST* Tubing No Hub	 Point Style 2	 Point Style 3	 Point Style 5	Custom Needles* Pt. Styles 2, 3, 4	 Custom Needles**
33	21033	90033	91033		7747-01	
32	21032					
31		90031	91031		7748-17	
30	21030	90030	91030		7748-16	
29	21029					
28	21028	90028	91028		7748-14	
27	21027	90027	91027		7748-13	
26s	21039	90039	91039	7729-01	7748-19	7751-19
26	21026	90026	91026	7729-03	7748-12	7751-17
25	21025	90025	91025	7729-04	7748-11	7751-16
24		90024	91024	7729-05	7748-10	7751-15
23	21023	90023	91023	7729-06	7748-09	7751-14
22s		90038	91038	7729-02	7748-18	7751-18
22	21022	90022	91022	7729-07	7748-08	7751-13
21	21021	90021	91021	7729-08	7748-07	7751-12
20	21020	90020	91020	7729-09	7748-06	7751-11
19	21019					
18	21018	90018	91018	7729-10	7748-04	7751-09
17	21017	90017	91017	7729-11	7748-03	7751-08
16	21016	90016	91016	7729-12	7748-02	7751-07
15	21015					
14	21014	90014	91014		7749-05	
13	21013	90013	91013		7749-04	
12	21012	90012	91012		7749-03	
11	21011	90011	91011		7749-02	
10	21010	90010	91010		7749-01	

* Please specify length and point style. ** Please specify length. (Point style 5)





Kel-F Hub (KF)

Point Style 2	Point Style 3	Point Style 5	Custom Needles* Pt. Styles 2, 3, 4	Custom Needles**
90131	90531		7750-22	
90130	90530		7750-21	
90128	90528		7750-19	
90127	90532		7750-18	
90139	90539	7746-12	7750-24	7752-19
90126	90533	7746-10	7750-17	7752-17
90125	90525	7746-09	7750-16	7752-16
90124	90524	7746-08	7750-15	7752-15
90123	90523	7746-07	7750-14	7752-14
90138	90534	7746-11	7750-23	7752-18
90122	90134	7746-06	7750-13	7752-13
90121	90521	7746-05	7750-12	7752-12
90120	90520	7746-04	7750-11	7752-11
90118	90535	7746-03	7750-09	7752-09
90117	90517	7746-02	7750-08	7752-08
90116	90516	7746-01	7750-07	7752-07
			7750-05	7752-05
			7750-04	7752-04
			7750-03	7752-03
			7750-02	7752-02
			7750-01	7752-01

Ordering Information

All needles sold in 6 packs.

For 2.5-100 µL Syringes

Gauge	 Point Style 2	 Point Style 3	 Point Style 5	Custom Needles* Pt. Styles 2, 3, 4	 Custom Needles**
33		7762-06		7803-05	
32		7762-05		7803-04	
31		7762-04		7803-03	
30		7762-03		7803-07	
28		7762-02		7803-02	
27		7762-01		7803-01	
26s	7758-02	7768-01	7784-07	7804-04	7731-02
26	7758-04	7768-02	7784-08	7804-03	7731-01
22s	7758-03	7770-01	7784-05	7804-02	7731-04
22	7758-01	7770-02	7784-06	7804-01	7731-03

* Please specify length and point style. ** Please specify length. (Point style 5)

For 250 µL-10 mL Syringes

Point Style 2	Point Style 3	Point Style 5	Custom Needles* Pt. Styles 2, 3, 4	Custom Needles**
7779-02	7780-01	7784-03	7806-04	7732-04
7779-04	7780-02	7784-04	7806-03	7732-03
7779-03	7780-03	7784-01	7806-02	7732-02
7779-01	7780-04	7784-02	7806-01	7732-01

Syringe Cleaning and Maintenance

Syringe Cleaner

- Clean 7000 Series MODIFIED MICROLITER syringes with only heat (370°C) or add a vacuum source (.1 mm mercury) to remove suspected residuals
- MICROLITER and GASTIGHT syringes may be cleaned when a voltage rheostat* is added to reduce the chamber temperature to 50°C; a vacuum source (.1 mm mercury) can be added to remove suspected residuals
- Not effective for frozen plungers or plugged needles



Needle Cleaning Kit

- Contains a selection of various diameter tungsten wires for cleaning plugged needles
- Biodegradable cleaning concentrate helps to remove tenacious residues



Ordering Information

Part Number	Description
76610	Syringe Cleaner, 120VAC
76615	Syringe Cleaner, 220VAC
76022	Replacement Septa, 5 mm diameter, 12/pk

* Note: Voltage rheostat and vacuum source must be purchased separately

Syringe Cleaning Tips

- The life of your MICROLITER, MODIFIED MICROLITER or GASTIGHT syringe is directly related to its cleanliness!
- To clean syringes, it is best to use solvents known to be effective in solvating the sample and preferably are non-alkaline, non-phosphate and non-detergent based. A biodegradeable, non-phosphate, organic Cleaning Concentrate is available from Hamilton; order part # 18311.
- High quality water and acetone prove to be good rinses.
- To clean the plunger, remove it from the syringe barrel and gently wipe with a lint-free tissue. Reinsert the plunger into the barrel and pump deionized water or acetone through the needle and syringe. Air dry the syringe for storage.

Note: When reinserting a PTFE-tipped plunger into a syringe barrel, wet (lubricate) the tip with deionized water or another solvent compatible with the sample.

Sterilizing Syringes

Sterilize your Hamilton syringe using an appropriate chemical sterilizer. Rinse the syringe thoroughly after sterilization. In general, Hamilton Company does not recommend autoclaving syringes. Stainless steel expands faster than glass upon heating. Heating a syringe with a cemented, stainless steel needle may cause the glass barrel to split. Heating a syringe with cemented stainless steel hubs may result in adhesive deterioration and leakage. It is the responsibility of the user to determine the suitability of application and material compatibility of the products based on published specifications.

Ordering Information

Part Number	Description		
76620	Needle Cleaning Kit (includes cleaning wires and 70 mL of cleaning concentrate listed below)		
	Cleaning Wire Part #	Cleaning Wires (7" in length)	Use to Clean Needle Gauges
	18306	.00300" O.D., 10/pk	23s, 26s, 31-33
	18300	.00350" O.D., 10/pk	26s, 31-33
	18301	.00497" O.D., 10/pk	22s, 25s, 28-30
	18302	.00659" O.D., 10/pk	27
	18303	.00815" O.D., 10/pk	24-26
	18304	.01207" O.D., 10/pk	22, 23 (and larger)
18311	Cleaning Concentrate, 500 mL (not included in cleaning kit)		

Cleaning Needles

Should a needle become clogged, do not attempt to clean it by forcing liquid or compressed air through the syringe. Excessive pressure will split the glass barrel. Order Hamilton's Needle Cleaning Kit, part # 76620, to prevent clogging of needles. Remove the plunger from the syringe before cleaning the needle. Cleaning wires are used to dislodge any foreign material or residue build-up. Use deionized water or acetone to thoroughly rinse the syringe.

Gauge Index

Needle Gauge Table

Gauge	O.D. Tolerance		I.D. Tolerance		Wall Thickness		Volume μL/inch
	in	mm‡	in	mm‡	in	mm‡	
33	.0080-.0085	0.21	.0035-.0050	0.11	.002	.05	.20
32	.0090-.0095	0.24	.0035-.0050	0.11	.002	.05	.20
31	.0100-.0105	0.26	.0045-.0060	0.13	.0025	.06	.34
30	.0120-.0125	0.31	.0055-.0070	0.16	.003	.08	.45
28	.0140-.0145	0.36	.0065-.0080	0.18	.0035	.09	.63
27	.0160-.0165	0.41	.0075-.0090	0.21	.004	.10	.80
26s	.0184-.0189	0.47	.0045-.0055	0.13	.007	.18	.26
26	.0180-.0185	0.46	.0095-.0110	0.26	.004	.10	1.25
25	.0200-.0205	0.51	.0095-.0110	0.26	.005	.13	1.25
24	.0220-.0225	0.57	.0115-.0130	0.31	.005	.13	1.80
23	.0250-.0255	0.64	.0125-.0140	0.34	.006	.15	2.17
22s	.0280-.0285	0.72	.0055-.0065	0.15	.011	.28	.45
22	.0280-.0285	0.72	.0155-.0170	0.41	.006	.15	3.35
21	.0320-.0325	0.82	.0195-.0210	0.51	.006	.15	5.19
20	.0355-.0360	0.91	.0230-.0245	0.60	.006	.15	6.71
18	.0495-.0505	1.27	.0315-.0345	0.84	.0085	.22	14.08
17	.0575-.0580	1.47	.0405-.0435	1.07	.008	.20	22.84
16	.0645-.0655	1.65	.0455-.0485	1.19	.009	.23	28.25
14	.0820-.0840	2.11	.0610-.0650	1.60	.010	.25	51.07
13	.0940-.0960	2.41	.0690-.0730	1.80	.012	.31	64.63
12	.1080-.1100	2.77	.0830-.0870	2.16	.012	.31	93.07
11	.1190-.1210	3.05	.0920-.0960	2.39	.013	.33	113.00
10	.1330-.1350	3.40	.1040-.1080	2.69	.014	.36	143.28

‡ mm are nominal

PTFE Tubing Gauge Table

Gauge	Nominal O.D.		Nominal I.D.		Wall Thickness	Volume μL/inch
	in	mm	in	mm	in	
30	.030	.76	.012	.30	.009±.002	2.17
28	.033	.84	.015	.38	.009±.002	2.88
26	.036	.91	.018	.46	.009±.002	4.22
24	.040	1.02	.022	.56	.009±.002	6.26
22	.046	1.17	.028	.71	.009±.002	9.50
20	.058	1.47	.034	.86	.012±.003	14.75
19	.062	1.57	.038	.97	.012±.003	18.77
18	.066	1.68	.042	1.07	.012±.003	22.84
17	.071	1.80	.047	1.19	.012±.003	28.25
16	.077	1.96	.053	1.35	.012±.003	36.36
15	.083	2.11	.059	1.50	.012±.003	44.89
14	.090	2.29	.066	1.68	.012±.003	56.30
13	.100	2.54	.076	1.93	.012±.003	74.31
12	.109	2.77	.085	2.16	.012±.003	93.07
11	.119	3.02	.095	2.41	.012±.003	115.87
10	.130	3.30	.106	2.69	.012±.003	143.28
9	.148	3.76	.118	3.00	.015±.004	179.54
8	.163	4.14	.133	3.38	.015±.004	227.91
7	.178	4.52	.148	3.76	.015±.004	282.03
1/8"	.155	3.94	.125	3.18	.015±.004	201.73

Syringe Graduations

Syringe Graduations

100 line screens

7000 Series MODIFIED MICROLITER Syringes

	.5 µL	1 µL	2 µL	5 µL
	7000.5	7001, 7101	7002, 7102	7105
Scale length, cm	6	6	6	6
Total scale divisions	100	100	100	100
Major graduations, µL	0.05	0.1	0.2	0.5
Minor graduations, µL	0.01	0.02	0.04	0.1
Sub-minor graduations, µL	0.005	0.01	0.02	0.05

600, 700, 800 & 900 Series MICROLITER Syringes

	2.5 µL	5 µL	5 µL	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
	62	65	75, 85, 95	701, 801, 901	702, 802	705, 805	710, 810	725, 825	750
Scale length, cm	2.7	2.7	5.41	5.41	6	6	6	6	6
Total scale divisions	50	50	100	100	100	100	100	100	100
Major graduations, µL	0.5	1	0.5	1	2.5	5	10	25	50
Minor graduations, µL	0.1	0.2	0.1	0.2	0.5	1	2	5	10
Sub-minor graduations, µL	0.05	0.1	0.05	0.1	0.25	0.5	1	2.5	5

1700 & 1800 Series GASTIGHT Syringes

	10 µL	25 µL	50 µL	100 µL	250 µL	500 µL
	1701, 1801	1702, 1802	1705, 1805	1710, 1810	1725, 1825	1750
Scale length, cm	6	6	6	6	6	6
Total scale divisions	100	100	100	100	100	100
Major graduations, µL	1	2.5	5	10	25	50
Minor graduations, µL	0.2	0.5	1	2	5	10
Sub-minor graduations, µL	0.1	0.25	0.5	1	2.5	5

1000 Series GASTIGHT Syringes

	1 mL	1.25 mL	2.5 mL	5 mL	10 mL	25 mL	50 mL	100 mL
	1001	1001.25	1002	1005	1010	1025	1050	1100
Scale length, cm	6	6	6	6	6	6	6	12
Total scale divisions	100	100	100	100	100	100	100	200
Major graduations, mL	0.1	0.125	0.25	0.5	1	2.5	5	5
Minor graduations, mL	0.02	0.025	0.05	0.1	0.2	0.5	1	1
Sub-minor graduations, mL	0.01	0.0125	0.025	0.05	0.1	0.25	0.5	0.5

Super Syringes

	500 mL	1000 mL	1500 mL	2000 mL
	S0500	S1000	S1500	S2000
Scale length, in.	6.53	6.57	9.85	13.13
Total scale divisions	25	50	75	100
Major graduations, mL	100	100	100	100
Minor graduations, mL	20	20	20	20



HAMILTON
THE MEASURE OF EXCELLENCE

Sales information:

Microlab Technologies Ltd.

Tel: 01702 208044

e-mail: sales@microlabtech.co.uk

www.microlabtech.co.uk

TRADEMARKS:

The following are trademarks of Hamilton Company

Digital Syringe™

GASTIGHT®

MICROLITER™

MODIFIED MICROLITER™

MULTI-PAK™

SampleLock™

The following company trademarks have been used in this catalog

Kel-F® - 3M Company

Tekmar™ - Tekmar-Dohrmann

Quality Hamilton Products:

MICROLITER® Syringes

GASTIGHT® Syringes

Chromatography Syringes

Syringes for Life Science

Instrument Syringes

SoftGrip™ Pipettes

Miniature Valves

Modular Valve Positioner

Laboratory Fittings, Adapters & Tubing

Precision Syringe Pumps

Diluters & Dispensers

MICROLAB® Robotic Workstations

Electrochemical Sensors

DURACAL™ Buffer Solutions

HPLC Columns & Resins