



# Life Science Syringes

Hamilton Company offers a wide variety of syringes for life science applications. From gel-loading syringes to custom needles and specialized syringes for animal injections, Hamilton has a solution for many precision liquid handling applications.





## Neuros Syringes

Designed specifically for lab animal neuroscience injections. Neuros precisely delivers sample to the target with minimal damage.



Neuros Syringes

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## Syringes Connected to:

A variety of different connections are available for connecting small gauge needles, glass capillaries, and PEEK tubing to Hamilton small hub removable needle syringes.



Syringes Connected to:

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## Specialty Syringes

Specialty syringes include Threaded Plunger Syringes, Gel-Loading Syringes, and Micro Pipetting Syringes



Specialty Syringes

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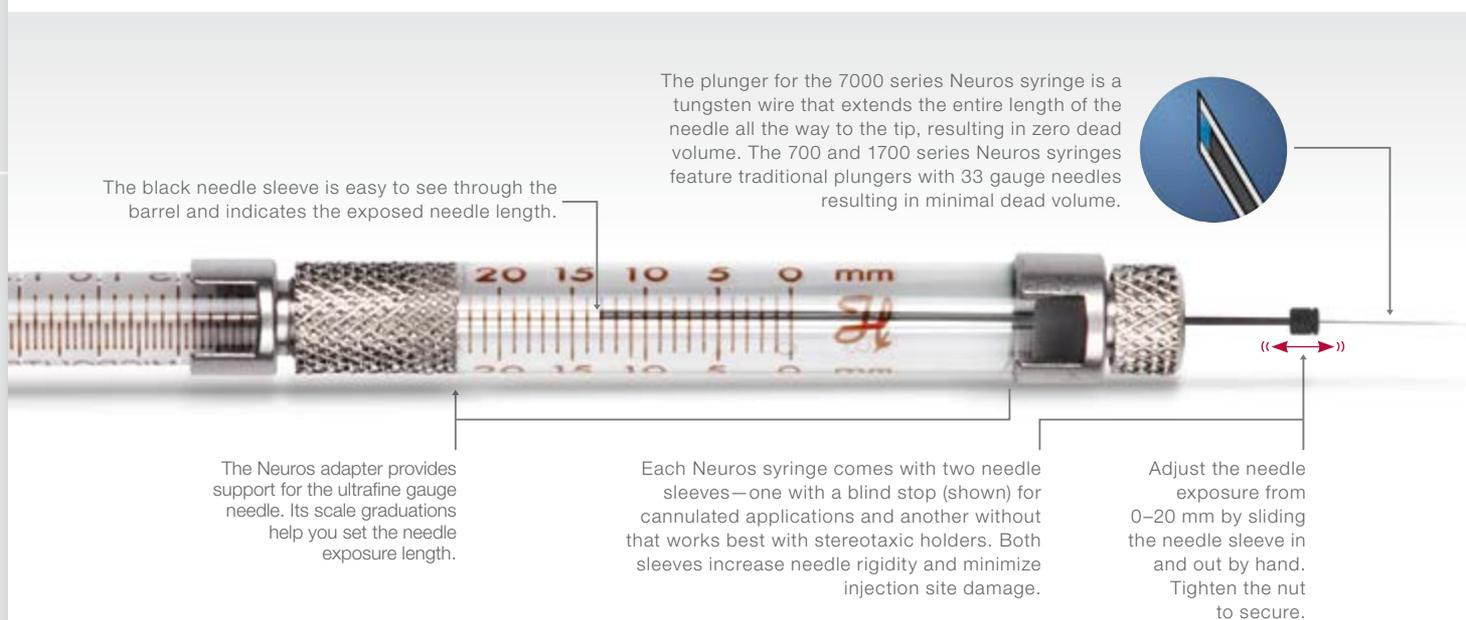


# Neuros Syringes

Hamilton Neuros syringe technology provides unprecedented functionality for controlled animal injections. The Neuros accurately dispenses volumes between 50 nL and 100  $\mu$ L through an ultrafine needle. Developed specifically for neuroscience applications, the Neuros enables the delivery of microvolumes to an exact location while minimizing injection site damage. Neuros syringes come with two types of protective needle sleeves. The sleeve with a blind stop is perfect for cannulated applications and ensures targeted

administration with an adjustable penetration depth. The version without a blind stop works best with stereotaxic holders. Both models provide an adjustable needle exposure of 0 to 20 mm.

- Needle rigidity improves insertion path accuracy
- Minimal tissue damage reduces injection variability
- Reduced sample loss saves money and materials
- A fine gauge needle creates smaller injection sites
- Compatibility with most infusion pumps and stereotaxic holders means an easy integration into existing processes





## Neuros Syringe Assemblies

P/N	Volume	Gauge	Point	Series
65457-01	0.5 µL	32 ga	3	7000
65457-02	0.5 µL	32 ga	4	7000
65458-01	1.0 µL	32 ga	3	7000
65458-02	1.0 µL	32 ga	4	7000
65459-01	2.0 µL	30 ga	3	7000
65459-02	2.0 µL	30 ga	4	7000
65460-02	5 µL	33 ga	3	700
65460-03	5 µL	33 ga	4	700
65460-05	10 µL	33 ga	3	1700
65460-06	10 µL	33 ga	4	1700
65460-10	25 µL	33 ga	3	1700
65460-11	25 µL	33 ga	4	1700
65460-15	50 µL	33 ga	3	1700
65460-16	50 µL	33 ga	4	1700
65460-20	100 µL	33 ga	3	1700
65460-21	100 µL	33 ga	4	1700

## Neuros Replacement Parts

P/N	Volume	Gauge	Point
65461-01	Needle 5 – 100 µL – 6pk	33 ga	3
65461-02	Needle 5 – 100 µL – 6pk	33 ga	4
65460-01	Adapter Kit for 5 – 100 µL RN syringes	33 ga	3
65460-04	Adapter Kit for 5 – 100 µL RN syringes	33 ga	4





## Syringes Connected to:

### Small Gauge Needles, Glass Micro Pipettes, PE Tubing, and PEEK Tubing

Life science applications often require connection of syringes to a variety of different needle and tubing options. The accessories in this section enable a robust and low dead volume connection to any RN syringe 100  $\mu$ L and smaller.

#### Adapters

Small Gauge Needle



PEEK Tubing



Glass Micro Pipette



PE Tubing



#### Syringe with Small RN Termination



## Priming Your Tubing

Connecting a small volume syringe to tubing adds dead volume and makes the system difficult to prime. In these cases remove the plunger and use the priming kit to load buffer or mineral oil through the back of the syringe. Visit page 63 for more information on Priming Kits.



## Removeable Needle Syringes Without Needle

These syringes have a robust, low dead volume connection that can be used with all the needle and tubing connectors in this section.



P/N	Volume	Series
7632-01	2.5 µL	600
7633-01	5 µL	600
7634-01	5 µL	700
7635-01	10 µL	700
7653-01	10 µL	1700
7636-01	25 µL	700
7654-01	25 µL	1700
7637-01	50 µL	700
7655-01	50 µL	1700
7638-01	100 µL	700
7656-01	100 µL	1700

## Convert 7000 Series to Small RN Hub

For ultra-low dispense volumes the 7000 series syringes can be adapted to a removable needle termination using the adapters below.



## Knurled Hub Syringes

P/N	Volume	Series
86250	0.5 µL	7000
80100	1.0 µL	7000
88400	2.0 µL	7000





## Small Gauge Needles

Fine gauge needles are used for animal injections to limit tissue damage and sample loss. Removable needles have minimal dead volume and for this reason are recommended over a luer or luer lock connection. These needles are compatible with RN syringes 100  $\mu$ L and smaller. At the time of ordering specify the desired length and point style.



### Small Hub Removable Needles

P/N	Gauge	Length	Point
207434	34 ga	10, 13, 25, or 38 mm	3 or 4
7803-05	33 ga	10 – 304 mm	2, 3, or 4
7803-04	32 ga	10 – 304 mm	2, 3, or 4
7803-03	31 ga	10 – 304 mm	2, 3, or 4
7803-07	30 ga	10 – 304 mm	2, 3, or 4
7803-06	29 ga	10 – 304 mm	2, 3, or 4
7803-02	28 ga	10 – 304 mm	2, 3, or 4
7803-01	27 ga	10 – 304 mm	2, 3, or 4
7804-04	26s ga	10 – 304 mm	2, 3, or 4
7804-03	26 ga	10 – 304 mm	2, 3, or 4
7804-10	25s ga	10 – 304 mm	2, 3, or 4
7804-05	25 ga	10 – 304 mm	2, 3, or 4
7804-08	24 ga	10 – 304 mm	2, 3, or 4
7804-09	23s ga	10 – 304 mm	2, 3, or 4
7804-07	23 ga	10 – 304 mm	2, 3, or 4
7804-02	22s ga	10 – 304 mm	2, 3, or 4
7804-01	22 ga	10 – 304 mm	2, 3, or 4

## Glass Micro Pipettes

Glass micro pipettes are widely used in neuroscience because the point can be pulled to an incredibly small diameter and maintain the rigidity to penetrate tissue. Additionally, the dispense orifice exits from the very tip of the needle so the wound track can be minimized.

The 1 mm RN compression fitting allows for quick connection to standard 1 mm capillary glass. Pull your own needle and attach it to an RN syringe without wax or glue.

### 1 mm Compression Fitting



#### P/N Description

55750-01 RN Compression Fitting 1 mm

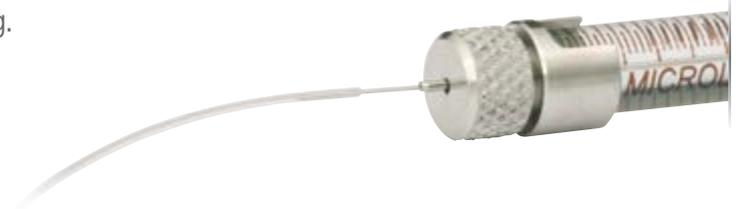
*Hamilton does not offer 1 mm glass capillary tubing.*

## PE Tubing

Polyethylene (PE) tubing is frequently used for lab animal applications. Connect PE tubing to a syringe by pressing the tubing onto the tip of a needle. The table shows the needle gauge that is properly sized for a press fit with PE 10, PE 20, and PE 50 tubing.

### Needle Gauges for PE Tubing

Tubing Size	Compatible Needle Gauge
PE 10	30 ga
PE 20	27 ga
PE 50	23 or 23s ga



Point Styles

Point 2

Point 3

Point 4

Point 5

Point AS

## PEEK Tubing

Polyether ether ketone (PEEK) tubing is widely used in chromatography for its small dead volume, chemical biocompatibility, and high pressure rating. These features also make it ideal for lab animal applications. Use the compression fitting to connect any 1/16th inch (1.6 mm) outer diameter PEEK tubing to a 100  $\mu$ L or smaller RN syringe.

### PEEK Compression Fittings



Part Number	Description
55751-01	RN Compression Fitting 1/16 inch

*Note: Hamilton does not sell PEEK tubing; it needs to be sourced through a third party.*

### Dual RN Coupler

Connect an RN needle to the end of PEEK tubing with the small RN to RN connector (P/N 55752-01).



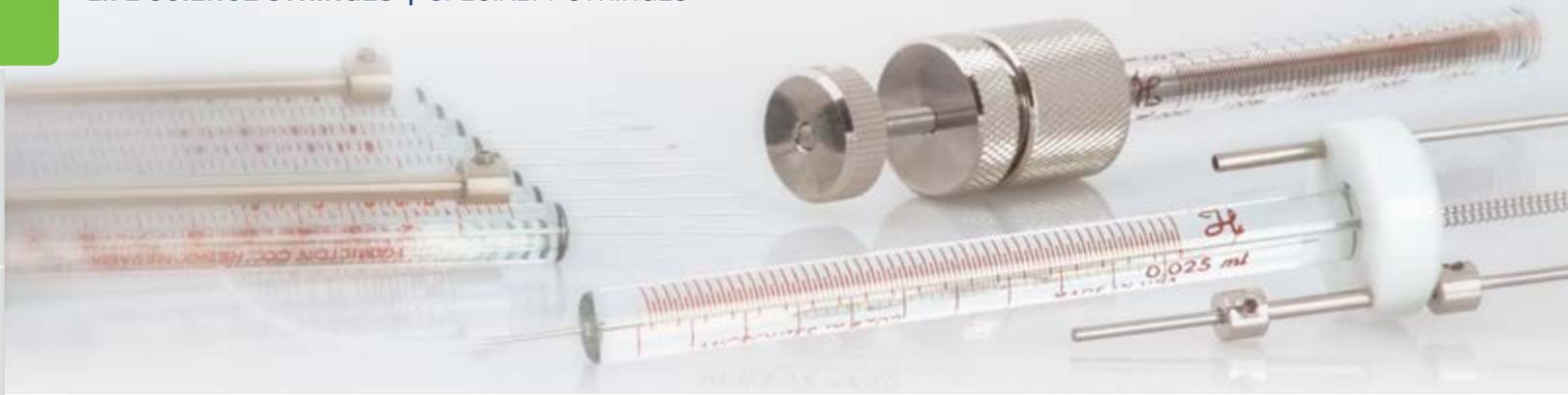
## Priming Kit

Connecting glass or plastic tubing to a syringe increases the dead volume and makes priming difficult. This can be overcome by removing the plunger and using the priming kit to load or fill the system from the back. The kit contains one 250  $\mu$ L syringe (P/N 81120), one six-pack of 30 gauge needles (P/N 90030), and one pack of 25 septa (P/N 75826).

### Priming Kit

P/N	Description
PRMKIT	Syringe Priming Kit





# Specialty Syringes

## Threaded Plunger Syringes

Threaded Plunger Syringes are used for precise manual positioning of the plunger. Rotation of the plunger aspirates or dispenses a defined volume of liquid. The Luer Tip connection is compatible with Kel-F Hub needles, tubing, and fittings.

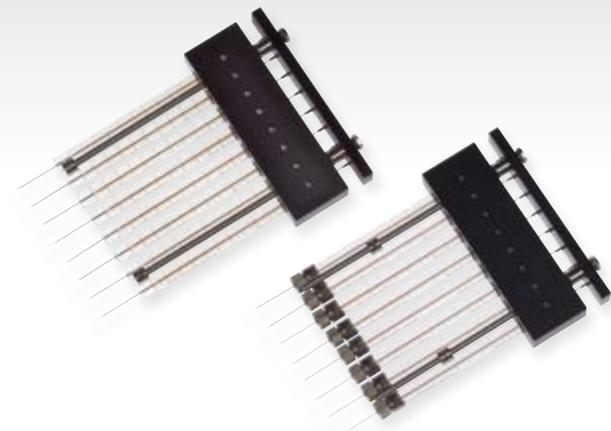
### Threaded Plunger Syringes

P/N	Volume	Plunger Type	$\mu\text{L}/\text{Revolution}$
80266	25 $\mu\text{L}$	Sleeve Type	0.33 $\mu\text{L}$
81041	100 $\mu\text{L}$	Sleeve Type	1.32 $\mu\text{L}$
81242	500 $\mu\text{L}$	Threaded Plunger	6.62 $\mu\text{L}$
81341	1 mL	Threaded Plunger	13.23 $\mu\text{L}$
81441	2.5 mL	Threaded Plunger	37.79 $\mu\text{L}$



## Gel-Loading Syringes

Multi-Channel Gel-Loading Syringes (GLS) are designed for multiplex DNA sequencing methodologies. Rapidly transfer 1, 8, or 12 samples to sequencing gels, 96-well plates, or nylon membranes. The fixed, 25 mm long, blunt needles are spaced 9 mm apart and are available with three needle outer diameters for optimized sample transfers. The adjustable volume stop allows faster, more accurate reloading and excellent reproducibility.



## Gel-Loading Syringes (Cont.)

## Cemented Needle Syringes



P/N	Description	Needle OD
80081	Single Channel	0.2 mm
84505	Single Channel	0.3 mm
84504	Single Channel	0.4 mm
84511	8-Channel	0.2 mm
84503	8-Channel	0.3 mm
84502	8-Channel	0.4 mm
84501	12-Channel	0.3 mm
84500	12-Channel	0.4 mm

## Removable Needle Syringes



P/N	Description	Needle OD
80091	Single Channel	0.2 mm
84711	8-Channel	0.2 mm
8651-01	Replacement Needle 6 pk	0.2 mm
8651-02	Replacement Needle	0.3 mm
8651-03	Replacement Needle	0.4 mm

## Adjustable Gel-Loading Syringes

Adjustable, Multi-Channel Gel-Loading Syringes (GLS) simplify and speed sample loading of 96-lane gels. They are compatible with a 96-lane ABI 377 DNA sequencing instrument. These syringes have an easy-to-use design for adjustment of needle spacing from 9 mm to 10.8 mm.

## Adjustable Gel Loading Syringes

P/N	Description	Needle OD	Termination
84611	8-Channel Adjustable	0.2 mm	RN
78633	Replacement Needle 4 pk	0.2 mm	RN



## Micro Syringe Pipette

Disposable tip pipetting for samples that are not compatible with traditional polypropylene pipette tips. The sample only wets the disposable PTFE tip, eliminating sample cross-contamination. The spring-loaded plunger and adjustable stops ensure excellent reproducibility of volumes from 0.2  $\mu$ L to 3  $\mu$ L. The 19 mm electro-tapered needle enables easy attachment of the PTFE tips.

## Micro Pipette and Tips

P/N	Description
84250	0.2 – 3 $\mu$ L, Model 701 N Micro Syringe Pipette
84255	Disposable PTFE Tip – 100 pk

