

RNFS SYRINGE SPECIFICATIONS

Syringe

- Deactivated fused silica tubing, with a polyimide-coated exterior; no interior coating.
- Optional spacer with sleeve: sleeve is 0.34 mm O.D. and covers 7.6 cm of the standard 10 cm long needle.
- RNFS syringes can be autoclaved when disassembled.

Fused Silica Needle

- Stock 0.17 mm O.D. x 10 cm (standard length) needle suitable for capillary columns with 0.20 mm–25 mm I.D.'s.
- Optional 0.23 mm O.D. x 10 cm (standard length) needle suitable for capillary columns with 0.28 mm–35 mm I.D.'s.
- Maximum operable temperature for the fused silica needle is 360 °C (680 °F). Syringe specifications may vary from this.

RETURN OF GOODS

Hamilton Company's return and repair policy is written to protect its employees from potentially hazardous materials (e.g., serum, radioactive materials, carcinogenic chemicals, etc.) or any substance that may cause them partial or permanent disability during the inspection or repair process. In returning a product, the customer acknowledges that the product is free from any hazardous materials. Furthermore, the customer assumes responsibility should the returned product be determined to be hazardous.

Trademarks:

GASTIGHT is a trademark of Hamilton Company.

MICROLITER is a trademark of Hamilton Company.

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Hamilton Company manufactures products for precision fluid measuring: syringes, valves, diluter/dispensers, and robotic sample processors, as well as polymeric HPLC columns and resins. For additional information any of these product lines, please contact Hamilton Company or your local Hamilton representative.

<http://www.hamiltoncompany.com> 

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FUSED SILICA NEEDLE SYRINGES FOR ON-COLUMN INJECTION*

Congratulations! You have purchased the finest quality precision syringe available today. 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, fused silica needle syringes will provide unsurpassed performance in precision liquid handling year after year.

Hamilton Company's on-column syringes use external polyimide-coated, fused silica needles. Needles are available with 0.17 or 0.23 mm OD. The standard needle length is 10 cm, but optional lengths can be fabricated on site by purchasing the fused silica material in 1 meter lengths. The 0.17 mm OD needle is recommended for capillary columns with 0.20 to 0.25 mm I.D.; the 0.23 mm needle is for 0.28 to 0.35 mm I.D. capillary columns. The maximum operating temperature for the fused silica needle is 360 °C (680 °F). An optional spacer with sleeve is used to sheath 7.6 cm of the standard 10 cm length, providing stability.

A choice of MICROLITER™ 700, 800, or 900 series, or GASTIGHT[®] 1700 and 1800 series syringes provides you with a variety of products for most applications. Use the GASTIGHT 1700 and 1800 series syringes for totally inert sample handling.

*NOTE: Syringes for on-column injection are also available with stainless steel needles. Part numbers are provided in this document.

WARRANTY STATEMENT

Hamilton Company unconditionally guarantees its products to be free of defects in materials and workmanship. Any product which fails due to such defects will be repaired or replaced at our discretion without cost, provided the device is returned with an explanation. It is the responsibility of the purchaser to determine the suitability of application and material compatibility of the products based on the published specifications of the products.

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.

Installing a Fused Silica Needle

1. Unscrew the RN Nut (5), fused silica needle (4), spacer (3), or spacer with sleeve (8) if used.
2. Insert the needle ferrule (2) cone-shaped end first, into the spacer (3), or spacer with sleeve (8).
3. Pass the needle through the hole in the spacer (3), or spacer with sleeve (8).
4. Position the plunger tip at about half the syringe volume.
5. Install the assembled needle, ferrule, and spacer into the syringe. Install the RN Nut (5) loosely enough that the needle will slide freely into the syringe barrel.
6. Gently feed the needle into the syringe barrel. Slowly push the plunger forward to meet the needle. Continue to push the plunger forward until the plunger stops at zero.
7. Without disturbing the position of the needle, tighten the knurled hub finger tight. Carefully test to see if the needle will move. If it does, re-tighten the knurled nut. Make sure the needle is inserted far enough to come in contact with the plunger tip.

NOTE: Do not over-tighten the knurled hub. Tighten it firmly enough to hold the needle in place. Over-tightening may damage the syringe or the fused silica needle.

MAINTAINING THE FUSED SILICA NEEDLE SYRINGE

All Hamilton RNFS syringes can be field-repaired. A list of replacement parts is provided. Maintenance of the MICROLITER RNFS syringes is limited to the replacement of the fused silica needle, ferrule (or stainless steel needle and ferrule), spacer (or spacer/sleeve assemblies). The GASTIGHT RNFS syringes allow replacement of the syringe glass barrel, plunger assembly, fused silica needle, ferrule, spacer and spacer/sleeve assemblies.

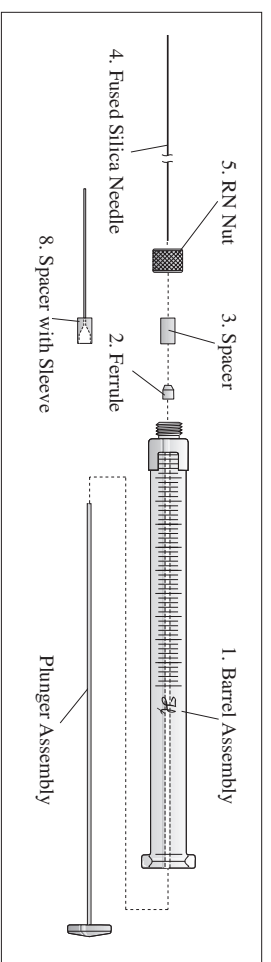


Figure 1 700 Series MICROLITER RNFS Syringe with fused silica needle.

SYRINGES AND REPLACEMENT PARTS

Numbers in parentheses refer to part numbers in Figure 1.

700/800/900 Series MICROLITER RNFS Syringe

Description	Part No.
75 RNFS 5µL (0.17 mm/10 cm)	200260
75 RNFS 5µL (0.23 mm/10 cm)	200270
701 RNFS 10 µL (0.17 mm/10 cm)	87402
701 RNFS 10 µL (0.17 mm/11.5 cm)	80331
801 RNFS 10 µL (0.17 mm/10 cm)	87403
95 RNFS 10 µL (0.17 mm/10 cm)	0159663

1700/1800 Series GASTIGHT RNFS Syringe

Description	Part No.
1701 RNFS 10 µL (0.17mm/10 cm)	87404
1801 RNFS 10 µL (0.17mm/10 cm)	87405

700 Series MICROLITER Syringe with Stainless Steel Needle

Description	Part No.
701 SN 10 µL (32 ga /7.5 cm)	80351
701 RN 10 µL (32 ga/12.5 cm)	80386

7000 Modified MICROLITER with Stainless Steel Needle

Description	Part No.
7000.5 KHOC 5 µL (0.23 mm/10 cm)	86257

Replacement Parts for RNFS Syringes

Description	Part No.
(5) RN Nut	30902
(4) Fused Silica Needle (0.17 mm x 10 cm)	17737
(4) Fused Silica Needle (0.17 mm x 11.5 cm)	17076
(4) Fused Silica Needle (0.17 mm x 1 m)	0133410
(4) Fused Silica Needle (0.23 mm x 10 cm)	17739
(4) Fused Silica Needle (0.23 mm x 1 m)	0133432
(2) Ferrule for 0.17 mm Fused Silica Needle	30947
(2) Ferrule for 0.23 mm Fused Silica Needle	30949
(3) Spacer for 0.17 and 0.23 mm Fused Silica Needle	30946
(8) Spacer with Sleeve for 0.17 and 0.23 mm Fused Silica Needle	30948
701 RN 10 µL Syringe w/o Needle	0139010
1701 RN 10 µL Barrel w/o Needle	10373
1701 RN Plunger Assembly	13205
801 RN 10 µL Barrel/Plunger Assembly w/o Needle	32129
1801 RN 10 µL Barrel w/o Needle	32187
1801 RN Plunger Assembly	32193
RN Needle (0.23 mm/12.5 cm/2) S	79625
7000.5 OC, 0.5 µL Needle/Plunger Assembly (0.23 mm/10 cm/3)	86258

Please reference Hamilton Company's general Product Catalog for additional items.