

## Microliter™ Syringes

Congratulations! You have purchased the finest quality precision syringe available today. We combine the highest quality materials with skilled workmanship, ensuring the highest possible performance level of every precision fluid device we manufacture. With proper care and handling, Microliter syringes will provide unsurpassed performance in precision liquid 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.**

Hamilton Microliter syringes are precision measuring instruments. For prolonged syringe life and to obtain the maximum benefits of use, a few helpful tips should be observed:

### Assured Accuracy and Precision

- When using a Microliter 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 liquid to be transferred. This will expel any trapped air in the needle and syringe. Minimize the use of a “dry” syringe.
- Every Microliter syringe is handcrafted with its own unique plunger to insure only the highest precision liquid transfers. Plungers are not interchangeable.
- If the plunger is accidentally withdrawn completely from the syringe barrel, wipe it carefully with a lint-free tissue before reinserting into the barrel. Avoid touching the plunger since oil from one’s fingers will often interfere with proper plunger operation.

### Cleaning

- The life of your Microliter 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 that are non-alkaline, non-phosphate, and non-detergent based. A biodegradable, non-phosphate, organic Cleaning Solution Concentrate is available from Hamilton; order P/N 18311.
- High quality grade 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.

### Solvent Compatibility

- The adhesive used to affix needles in Hamilton Gastight and Microliter syringes is the most chemically resistant available. However, some solvents with prolonged exposure on particular halogenated hydrocarbons, may attack and deteriorate this highly resistive adhesive. For applications using such solvents, removable needle model syringes are recommended; no adhesive is present in the fluid path of this type of syringe. Avoid prolonged immersion of the syringe in any solvent while cleaning. Rinse the syringe thoroughly after use with deionized water, acetone, or another solvent compatible with the sample. Allow to air dry.

## Pressure Parameters

- Microliter syringes will withstand pressures of 2000 psig for volumes ranging from 5–100  $\mu$ L and 1000 psig for volumes of 250 and 500  $\mu$ L.
- Plugged needles can produce back-pressure on the plunger resulting in internal syringe pressures exceeding recommended levels. Use only cleaning wires or dissolution methods to dislodge any residue plugging the needle. A complete Needle Cleaning Kit is available from Hamilton; order P/N 76620.

## Temperature Parameters

- For best results, Microliter syringes are intended for use above 10°C (50°F).
- Microliter syringes with cemented needles should not be heated above 50°C (122°F). For applications requiring elevated temperatures up to 115°C (239°F), removable needle Microliter syringes should be used.
- Even though only the highest quality glass is used for Microliter syringe barrels, rapid changes in temperature should be avoided.

## WARRANTY STATEMENT

Hamilton Company unconditionally guarantees its products to be free of defects in materials and workmanship. Any product that fails due to such a defect will be repaired or replaced at our discretion without cost, provided the device is returned on a Return Materials Authorization (RMA). It is the responsibility of the purchaser to determine the suitability of application and material compatibility of the product based on the published specifications of the product.

## 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 prove to be hazardous.

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