

User Guide

Millex[®]-GV₄ and Millex-HV₄ Filter Units

- Single use only
- Sterile
- Non-pyrogenic
- Do not use this product as an in-line filter for intravenous administration

SLGV 004 SL (0.22 μm, 100/box)

SLHV 004 SL (0.45 μm, 100/box)

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Notice

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Introduction

The sterile 4 millimeter (mm) Millex-GV₄ and Millex-HV₄ filter units are syringe-operated filter units for the sterilization (GV₄) or clarification (HV₄) of aqueous solutions (column eluates, tissue culture additives, HPLC samples, protein pharmaceuticals, etc.) in volumes up to 1 milliliter (1 mL). The single-use Millex-GV₄ and -HV₄ units incorporate the low-protein binding Durapore® polyvinylidene fluoride membrane.

Chemical Compatibility

The Millex-GV₄ and -HV₄ filter units are compatible with most aqueous solutions. They may be used to filter the agents listed below. This guide has been developed from technical publications, materials suppliers, laboratory tests, and field evaluations, etc., and is believed to be reliable. However, because of variability in temperature, concentrations, duration of exposure, and other factors outside of our control that may affect the use of the unit, no warranty is given or is to be implied with respect to such information. Agents not listed below should be tested with the Millex-GV₄ or -HV₄ filter units prior to use.

Chemicals

Acetic acid (5%)	Ethyl alcohol < 80%	Isobutyl alcohol
Acetic acid, glacial	Ethylene glycol	Isopropyl alcohol
Acetonitrile	Formaldehyde	Kerosene
Ammonium hydroxide (6N)	Freon® solvent, TF or PCA	Methyl alcohol
Amyl alcohol	Gasoline	Mineral spirits
Benzyl alcohol (1%)	Glycerine (glycerol)	Pet base oils
Boric acid	Helium	Pentane
Brine (sea water)	Hexane	Phenol (0.5%)
Butyl alcohol	Hydrochloric acid	Silicone oils
Cyclohexanone	Hydrogen (gas)	Sodium hydroxide
Developers (photo)	Hydrofluoric acid	Trichloroacetic acid
Ethyl alcohol > 80%	Hypo (photo)	Trichloroethane

How to Use the Millex-GV₄ and -HV₄ Filter Units

This section lists warnings and cautions and provides steps to use the Millex-GV₄ and -HV₄ filter units.

WARNINGS:

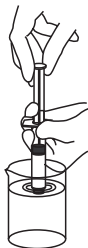
- **To ensure sterility, do not use this product if the package is damaged.**
- **Do not use this product as an in-line filter for intravenous administration; it was designed for laboratory use only.**
- **Do not use with syringes smaller than 10 cc because pressures in excess of the maximum pressure rating may be reached, potentially causing damage to the filter unit and/or personal injury.**

CAUTIONS:

- Do not resterilize or reuse the Millex-GV₄ or -HV₄ filter units.
- Do not use the Millex-GV₄ or -HV₄ units at temperatures above 45 °C (113 °F).
- Do not use the same Millex-GV₄ or -HV₄ filter unit to filter solutions in both directions.
- Do not use the Millex-GV₄ or -HV₄ unit to filter 5 mg or less of active drug materials unless binding studies have been performed.

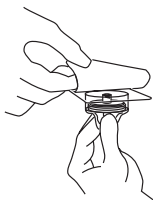
Directions for the Millex-GV₄ or -HV₄ Filter Units

1



Fill the syringe with the solution to be filtered.

2



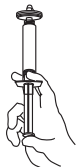
Aseptically remove the cover from the package containing the Millex unit.

3



Attach the syringe to the Millex unit and remove the assembly from the package. (Attach needle to luer slip outlet if necessary.)

4



Hold the syringe with the filter (and needle if attached) pointing up and top it off by pushing a few drops through it. (Make sure you do not contaminate the underside of the Millex unit with your fingers.)

5



Insert the needle (if attached) and push the plunger to deliver the filtered solution.

Specifications

Materials	hydrophilic Durapore (PVDF) low-protein binding membrane, type GV or HV; high density polyethylene housing
Dimensions	inlet to outlet 19.6 mm (.75 in.) diameter 6.4 mm (.25 in.) filtration area 0.1 cm ² pore size GV ₄ : 0.22 µm, HV ₄ : 0.45 µm
Temperature limit	45 °C (113 °F) maximum
Pressure limit at 25 °C	75 psig inlet and differential maximum
Filtration volume	≤ 1 mL
Hold-Up volume	≤ 10 µL after air purge
Connections	female, Luer-Lok® inlet; male, luer slip outlet
Flow rate	HV ₄ : Typical initial average flow rate at 25 °C for water at 30 psig: ≥ 5.2 mL/min GV ₄ : Typical initial average flow rate at 25 °C for water at 30 psig: 1.0 mL/min;

Technical Assistance

For more information, contact the Millipore office nearest you. In the U.S., call **1-800-MILLIPORE** (1-800-645-5476). Outside the U.S., see your Millipore catalogue or go to our web site at www.millipore.com/offices for up-to-date worldwide contact information. You can also visit the tech service page on our web site at www.millipore.com/techservice.

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