

User Guide

Millex®-VV/GV/HV Filter

with Durapore® membrane

REF SLVVR33RS, SLGVR33RS, SLGVR33RB, SLHVR33RS, SLHVR33RB

- 33 mm
- Sterile
- Single use
- Non-Pyrogenic
- For research use only

Introduction

This document provides compatibility information, operating steps, and specifications for the Durapore® hydrophilic polyvinylidene fluoride (PVDF) family of sterile Millex® filters. The 33 mm Millex® filter's bidirectional support of the filter membrane enables users to filter aqueous solutions in either direction; forward (from the syringe into the container) or backward (from the container into the syringe). The filter removes microorganisms, particles, precipitates, and undissolved powders larger than the membrane's rated pore size. These sterile, single-use filters consist of a membrane filter sealed in an acrylic housing. They are non-pyrogenic and non-toxic.

Applications

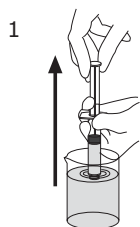
For research use only. Typical research laboratory applications include the sterile filtration (VV/GV) and/or clarification (VV/GV/HV) of protein solutions, tissue culture media, additives, buffers, and water.

How to Use the Millex® Sterile Filter

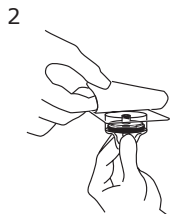
WARNINGS

- To ensure sterility, do not use this product if the package is damaged.
- Do not use this product as an in-line filter; it was not designed for long-term continuous use.
- Do not use the filter to filter fluids at temperatures above 45 °C (113 °F).
- Do not use the filter to filter emulsions or suspensions because it was not designed for that purpose.
- Do not use the filter to filter solutions containing 5 milligrams (mg) or less of materials unless binding studies have been performed.
- Do not use the same Millex® filter to filter solutions in both directions.
- Do not re-sterilize or reuse the filter, as we cannot assure the sterility, integrity, and performance beyond a single use.
- Discard appropriately after single use. See "Disposal" section.

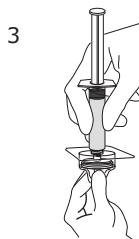
Directions for Use



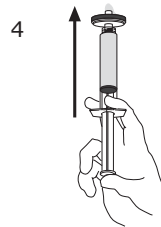
1 Fill syringe with solution to be filtered.



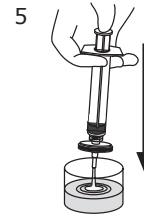
2 Aseptically remove cover from package.



3 Attach syringe to filter and remove assembly from package. Attach needle to Luer-slip outlet if necessary.



4 Hold syringe with filter (and needle if attached) pointing up and "top off" by pushing a few drops through. Do not contaminate underside of filter with fingers.
 ⚠ Excess fluid may be hazardous and should be disposed of with care.



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

Specifications

Materials

Membrane	Hydrophilic Durapore® polyvinylidene fluoride (PVDF)
Pore size	Type VV filter: 0.10 µm Type GV filter: 0.22 µm Type HV filter: 0.45 µm
Housing	Modified acrylic copolymer (MMA)

Dimensions

Inlet to outlet	27 mm (1.06 in.)
Diameter	33 mm (1.30 in.)
Filtration area	4.52 cm ² (0.70 in ²)

Temperature limit	45 °C (113 °F) maximum
Housing Pressure	10.3 bar (150 psi) inlet maximum at 21 °C
Filtration volume	10 mL to 100 mL
Hold-up volume	≤ 0.1 mL after air purge
Sterilization method	Gamma irradiation
Connections	Female Luer-Lok™ inlet; male Luer-slip outlet
Flow rate at 2.1 bar (30 psi), 21 °C	Millex®-VV filter: ≥ 25 mL/min Millex®-GV filter: ≥ 40 mL/min Millex®-HV filter: ≥ 300 mL/min

Chemical Compatibility

The Millex® filter with Durapore® membrane is compatible with most aqueous solutions. Based on information from technical publications, materials suppliers, and laboratory tests, we believe that the agents listed in the following chart are safe to use with Millex® filters. However, because of the effects of variability in temperature, concentrations, duration of exposure, and other factors outside of our control, we do not provide or imply a warranty with respect to this information.

Acetic acid (5%)	Hydrochloric acid (1 N)	Petroleum based oils
Alconox® detergent (1%)*	Hydrogen (gas)*	Petroleum ether***
Aliphatic ethers	Hydrogen peroxide (90%)*	Phenol (aqueous solution)***
Ammonium hydroxide (6 N)**	HYPO (aqueous solution)	Potassium hydroxide (3 N)**
Benzyl alcohol (1%)	Kerosene***	Silicone oils
Boric acid (aqueous solution)***	Lactic acid (50%)*	Sodium carbonate (aqueous solution)
CHAPS (aqueous solution)***	Lubrol® PX emulsifier (aqueous solution)	Sodium chloride (aqueous solution)
Diethyl pyrocarbonate (0.2%)*	Mercaptoethanol (0.1 M)*	Sodium dodecyl sulfate***
Ethers***	Mineral spirits	Sodium hydroxide (concentrated)**
Ethylene glycol***	Nitric acid (6 N)**	Trichloroacetic acid (aqueous solution)***
Formic acid (50%)*	Nitrogen (gas)*	Tween® 20 surfactant (aqueous solution)***
Freon® solvent (TF or PCA)*	Nonidet™ P-40 surfactant (aqueous solution)***	Urea (8 M)
Gasoline***	Ozone (gas)*	Water (brine)
Glycerine (glycerol)	Paraldehyde***	Water (deionized)
Guanidine hydrochloride (6 M)	Pentane	
Guanidine thiocyanate (5 M)	Perchloroethylene	

* May leak through membrane, application dependent.

** Extractables (may be higher).

*** Test before use.

Product Ordering

Purchase products online at SigmaAldrich.com/Products.

Description	Pore Size	Diameter	Membrane	50/pk	250/pk
Millex®-VV	0.10 µm	33 mm	Durapore® PVDF	SLVVR33RS	-
Millex®-GV	0.22 µm	33 mm	Durapore® PVDF	SLGVR33RS	SLGVR33RB
Millex®-HV	0.45 µm	33 mm	Durapore® PVDF	SLHVR33RS	SLHVR33RB

Disposal

Follow precautions for disposal of items contaminated with potentially infectious or hazardous material according to all applicable international, federal, state, and local regulations.

Notice

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