

## User Guide

# Vented Millex®-GV 0.22 µm Filter

REF SLGVVR255F

- 25 mm
- Sterile
- Single use
- Non-Pyrogenic
- For research use only
- 50 pack

## Introduction

The Vented Millex®-GV 0.22 µm is a sterile 25 mm syringe-operated filter for the sterilization or clarification of aqueous solutions for applications where venting and low protein-binding membrane are required or desired. It is non-pyrogenic and non-toxic. It will remove microorganisms, particles, precipitates, and undissolved powders larger than 0.22 µm. This single-use product consists of a 0.22 µm Durapore® polyvinylidene fluoride (PVDF) membrane filter sealed in a 25 mm diameter polyvinyl chloride (PVC) housing with a female Luer-Lok™ inlet connector and a male Luer-slip outlet connector. A 0.03 µm hydrophobic polytetrafluoroethylene (PTFE) filter in the dome prevents air locking by automatically venting air introduced upstream.

## Chemical Compatibility

The Vented Millex®-GV filter is compatible with most aqueous solutions. It may be used to filter the agents listed below. This guide has been developed from technical publications, materials suppliers, and laboratory tests, and is believed to be reliable. However, because of variability in temperature, concentrations, duration of exposure, and other factors outside of our control which may affect the use of the filter, no warranty is given or is to be implied with respect to such information. You should qualify specific sample component for protein binding or loss of reactive component prior to use. Agents not listed below should be tested with the Vented Millex®-GV filter prior to use.

Acetic acid (5%)	Hydrogen peroxide (30%)
Ammonium hydroxide (6 N) <sup>1</sup>	HYPO (photo)
Ammonium sulfate (saturated)	Lactic acid (50%) <sup>1</sup>
Benzyl alcohol (1%) <sup>1</sup>	Mercaptoethanol (0.1 M) <sup>1</sup>
Boric acid	Phenol (0.5%) <sup>1</sup>
Brine (sea water)	Sodium carbonate (aqueous)
Guanidine hydrochloride (6 M)	Sodium chloride (aqueous)
Guanidine thiocyanate (5 M)	Urea (8 M, aqueous) <sup>1</sup>
Hydrochloric acid (1 N)	

<sup>1</sup> Test before use.

## Directions for Use

### WARNINGS

- To ensure sterility, do not use this product if the package is damaged.
- Do not use with syringes smaller than 10 mL because pressures in excess of the maximum pressure rating may be reached, potentially causing damage to the filter and/or personal injury.
- Sudden changes in pressure may damage filter.
- Not suitable for filtering high viscosity solutions, emulsions or suspensions.
- Do not use this filter to filter 5 mg or less of protein-containing solutions or reactive materials unless binding studies have been performed.
- Filter solutions with a temperature limit of 45 °C (113 °F).
- Single use only; do not re-use or resterilize.
- Syringe filters are for manual use only; do not use on automated systems.
- Use aseptic technique to maintain sterility removing product from primary package.
- This filter is not bi-directional. Do not use the syringe to filter in reverse direction.
- Sudden loss of pressure could indicate failure of the filter.
- Do not use this product as an in-line filter.
- Make sure to wet the filter membrane thoroughly before injecting the solution; improperly wetted filters can become airlocked.
- Discard appropriately after single use. See "Disposal" section on next page.

## Procedure for Attachment to Syringe

Use aseptic technique.

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.  $\Delta$  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

Filter membrane	Hydrophilic Durapore® Polyvinylidene fluoride (PVDF), Type GV, pore size 0.22 $\mu$ m
Vent membrane	Hydrophobic polytetrafluoroethylene (PTFE), pore size 0.03 $\mu$ m
Housing	Polyvinyl chloride (PVC)

### Dimensions

Inlet to outlet	27 mm (1.06 in.)
Diameter	29 mm (1.14 in.)
Filtration area	4 cm <sup>2</sup> (0.62 in <sup>2</sup> )

### Temperature limit

45 °C (113 °F)

Pressure limit at 21 °C	5 bar (73 psi) inlet and differential
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### Filtration volume

1–100 mL

Hold-up volume	$\leq$ 0.1 mL after air purge (typical volume when vent hole is covered to prevent air flow)
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### Sterilization method

Ethylene oxide gas

### Connections

Female Luer-Lok™ inlet  
Male Luer-slip outlet

### Water Flow rate at 2.1 bar (30 psi), 21 °C

$\geq$  40 mL/min

## Symbol Definitions

Symbol	Definition	Symbol	Definition
	Non-pyrogenic		Date of manufacture
	Do not re-use		Manufacturer
	Catalogue number		Do not use if package is damaged and consult instructions for use
	Batch code		Sterilized using ethylene oxide
	Temperature limit		Caution
	Use-by date		

## Disposal

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

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