

User Guide

Millex® (33 mm) Sterile Syringe Filter

with Millipore Express® PES Membrane

SLGPR33RS
SLHPR33RS
SLGPR33RB
SLHPR33RB

- Single use only
- Sterile
- Non-pyrogenic
- Contains no natural latex rubber
- For research use only.

Introduction

This document provides compatibility information, operating steps, and specifications for the Millipore Express® PES family of sterile Millex® filters. The Millex® filter removes microorganisms, particles, precipitates, and undissolved powders larger than the membrane's rated pore size. These 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 (GP) and/or clarification (GP/HP) 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 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.

CAUTIONS:

- Do not use the Millex® filter to filter fluids at temperatures above 45 °C (113 °F).
- Do not use the Millex® filter to filter emulsions or suspensions because it was not designed for that purpose.
- Do not use the Millex® filter to filter solutions containing 5 milligrams (mg) or less of active drug materials unless binding studies have been performed.
- Do not re-sterilize or reuse the Millex® filter, as we cannot assure the sterility, integrity, and performance beyond a single use.

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

Specifications

Materials

Membrane	Hydrophilic polyethersulfone (PES) membrane Pore size: Millex®-GP filter: 0.22 µm Millex®-HP filter: 0.45 µm
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Housing	Acrylic
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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 at 25 °C	10.3 bar (150 psi) inlet maximum
Filtration volume	10 mL to 200 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®-GP filter: ≥ 150 mL/min Millex®-HP filter: ≥ 300 mL/min

Chemical Compatibility

The Millex® filter with Millipore Express® PES 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.

Chemicals

Acetic acid (aqueous solution)	Hexane	Phenol (aqueous solution)
Alconox® detergent (1%)	Hydrochloric acid (concentrated)	Potassium hydroxide (3 N)
Ammonium hydroxide	Hydrofluoric acid	Silicone oils
Ammonium sulfate (saturated)	Hydrogen	Sodium carbonate (aqueous solution)
Boric acid (aqueous solution)	Hydrogen peroxide (90%)	Sodium chloride (2 M)
CHAPS (aqueous solution)	HYPO (dilute solution)	Sodium dodecyl sulfate
Diethyl pyrocarbonate (0.2%)	Kerosene	Sodium hydroxide (concentrated)
Ethylene glycol	Lactic acid (50%)	Sulfuric acid (6 N)
Formaldehyde	Lubrol® PX emulsifier	Trichloroacetic acid (aqueous solution)
Formic acid (50%)	Mercaptoethanol (0.1 M)	Tween® 20 surfactant
Freon® solvent (TF or PCA)	Mineral spirits	Urea (8 M)
Gasoline	Nitric acid (concentrated)	Water (brine)
Glycerine (glycerol)	Nitrogen	Water (deionized)
Guanidine hydrochloride (6 M)	Nonidet™-P 40 surfactant	
Guanidine thiocyanate (5 M)	Paraldehyde	
Helium	Pentane	
	Petroleum ether	

Active Drug Compounds

The drug list refers to the compatibility between the drug and filter materials. It does not refer to the specific drug or protein binding to the filter, or the potential loss of the active drug component during filtration. You should qualify specific drugs for protein binding or loss of drug component prior to use. Agents that are not listed should be tested prior to use.

Drug	Comments	Drug	Comments	Drug	Comments
Aminophylline	water soluble	Etoposide	30% alcohol	Mitoxantrone	water soluble
Ampicillin	water soluble	Factor III	water soluble	Moxalactam	water soluble
Aspartame	water soluble	Factor IX	water soluble	Nitroglycerin	water soluble
Bleomycins	water soluble	Fentanyl	water soluble	Norepinephrine	water soluble
Caffeine	water soluble	Fluorouracil	water soluble	Penicillin G potassium	water soluble
Cefazolin	water soluble	Folic Acid	water soluble	Phenobarbital	water soluble
Cefoxitin	water soluble	Furosemide	water soluble	Piperacillin	water soluble
Cephalothin	water soluble	Gentamicin	water soluble	Plicamycin	water soluble
Cisplatin	water soluble	Hemin	water soluble	Prochlorperazine	water soluble
Colistin	suspension +surfactant	Heparin	water soluble	Protamines	water soluble
Cytarabine	water soluble	Hydrocortisone 21-glycol sodium succinate	water soluble	Streptokinase	water soluble
Dactinomycin	water soluble	Immunoglobulins	water soluble	Sulfamethomidine	50% alcohol
Daunorubicin	water soluble	Insulin	water soluble	Tobramycin	water soluble
Dexamethasone	5% alcohol	Isoproterenol	water soluble	Trimethoprim	water soluble
Diazepam	40% alcohol	Lidocaine	water soluble	Urokinase	water soluble
Digoxin	50% alcohol	Mannitol	water soluble	Vidarabine	water soluble
Dobutamine	water soluble	Metronidazole	water soluble	Vinblastine	water soluble
Dopamine	water soluble	Mitoguanzone	water soluble	Vincristine	water soluble
Doxorubicin	water soluble	Mitomycins	water soluble		
Ergonovine	water soluble				

Product Ordering

Purchase products online at www.sigmaaldrich.com/products.

Description	Pore Size, μm	Membrane	Cat. No.	Qty/pk
Millex [®] -GP	0.22	PES membrane	SLGPR33RS	50
Millex [®] -GP	0.22	PES membrane	SLGPR33RB	250
Millex [®] -HP	0.45	PES membrane	SLHPR33RS	50
Millex [®] -HP	0.45	PES membrane	SLHPR33RB	250

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Technical Assistance

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