

## User Guide

# Millex® 25 mm Non-Sterile Syringe Filter

**REF** SLFG025NS, SLFG025NB, SLFG025NK, SLFH025NS, SLFH025NB, SLFH025NK, SLLS025NS, SLCR025NK

Non-sterile.

For laboratory use only.

Single-use only.

## Introduction

This document provides chemical compatibility information, operating steps, and specifications for the Millex® 25 millimeter (mm) syringe filter with male Luer-slip outlet. This syringe filter is non-sterile, single-use, and disposable.

The Millex® syringe filter consists of a membrane sealed in a high density polyethylene (HDPE) housing. For details on the type of membrane in your Millex® syringe filter, see the "Specifications" section. The 25 mm syringe filter is recommended for filtering 10–100 milliliter (mL) volumes to remove particles prior to instrumentation analysis.

Syringe filter	Membrane	Application
FG	0.20 µm PTFE	Filtration of organic solutions. Also used for venting applications.
FH	0.45 µm PTFE	Clarify organic solutions.
LCR	0.45 µm PTFE	Clarifying protein-containing solutions, as well as aqueous or organic solutions
LS	5.0 µm PTFE	Remove particles from organic solvents.

## Chemical Compatibility

The Millex® 25 mm syringe filter with male Luer-slip outlet is compatible with aqueous, mild organic, and organic solutions. You can use it to filter the agents listed in the following table. This information was developed from technical publications, materials suppliers, and laboratory tests, and is believed to be accurate and reliable. However, because of variability in temperature, concentrations, exposure time, and other factors outside of our control that may affect the use of the unit, we do not provide or imply a warranty with respect to such information.

Agents not listed should be tested with the Millex® 25 mm syringe filter prior to use.

**Note:** For low extractable HPLC instrumentation analysis applications, it is recommended that you discard the first 1 mL or rinse with 1 or 2 mL of primary solvent before sample filtration.

## Chemicals

Acetic acid, glacial	Hydrogen peroxide (≤ 30%)
Ammonium sulfate (saturated)	HYPO (sodium thiosulfate)
Amyl acetate	Isobutyl alcohol <sup>1</sup>
Amyl alcohol <sup>1</sup>	Isopropyl acetate
Boric acid	Isopropyl alcohol <sup>1</sup>
Butyl alcohol <sup>1</sup>	Methyl alcohol <sup>1</sup>
Cellosolve® (ethyl) solvent	Methyl ethyl ketone
Cyclohexane	Methyl isobutyl ketone <sup>1</sup>
Cyclohexanone <sup>1</sup>	Nitrogen (gas)
Dimethylacetamide	Paraldehyde
Dimethylformamide	Perchloroethylene
Dimethylsulfoxide	Petroleum based oils
Ethyl acetate	Potassium hydroxide (3 N)
Ethyl alcohol <sup>1</sup>	Pyridine
Ethylene glycol	Silicone oils <sup>1</sup>
Formaldehyde	Sodium chloride (2 M)
Formic acid (50%)	Sodium hydroxide (3 N)
Freon® (TF or PCA) solvent	Sulfuric acid (3 N)
Glycerine (glycerol)	Tetrahydrofuran
Helium (gas)	Trichloroacetic acid (aqueous solution)
Hydrochloric acid	Urea (8 M)
Hydrofluoric acid	
Hydrogen (gas)	

<sup>1</sup> Application dependent, may wet out membrane and leak through.

## Disposal

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

## How to Use Millex® 25 mm Syringe Filters

### WARNINGS

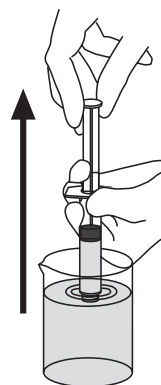
- Do not use the Millex® 25 mm syringe filter for direct patient care applications; it is designed for laboratory use only.
- Do not use with syringes smaller than 10 mL because pressures in excess of the maximum pressure rating may be reached, potentially causing damage to the syringe filter and/or personal injury.
- Sudden loss of pressure could indicate a failure of the filter.
- Single use only; do not re-use.
- Make sure to wet the filter membrane thoroughly before injecting the solution; improperly wetted filters can become airlocked.
- Do not use this filter as an in-line filter.
- Discard appropriately after single use. See "Disposal".

### CAUTIONS

- Do not use the 25 mm syringe filter at temperatures above 45 °C (113 °F).
- Perform a binding study before use if there is a concern about loss of analyte (proteins, nucleic acid, active pharmaceuticals) due to binding.
- Do not use the same 25 mm syringe filter to filter solutions in both directions.
- Do not use the syringe filter to filter emulsions or suspensions.

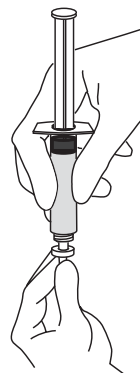
## Instructions for Use

1



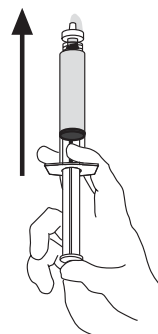
Fill the syringe with the solution to be filtered.

2



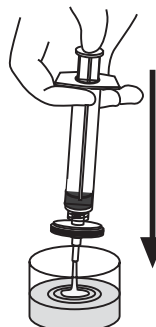
Attach the syringe to the Millex® syringe filter.

3



Hold the syringe with filter pointing up and "top off" by pushing a few drops through the filter. ⚠ Excess solution may be hazardous and should be disposed of with care.

4



Push the syringe plunger to deliver a filtered solution.

**Optional:** To purge the unit and maximize sample throughput, remove the Millex® filter from the syringe, draw air into the syringe, reattach the Millex® filter, and push the plunger to force some of the air through the filter.

## Specifications

<b>Housing</b>	High density polyethylene (HDPE)
<b>Membrane</b>	
FG, FH, LS	Hydrophobic Fluoropore™ polytetrafluoroethylene (PTFE)
LCR	Hydrophilic PTFE
<b>Dimensions</b>	
Inlet to outlet	19.8 mm (0.8 in.)
Diameter	30 mm (1.2 in.)
Filtration surface area	3.9 cm <sup>2</sup> (0.6 in <sup>2</sup> )
<b>Pore size</b>	
FG	0.20 µm
FH, LCR	0.45 µm
LS	5.0 µm
<b>Temperature limit</b>	45 °C (113 °F) maximum
<b>Pressure limit at 21 °C</b>	6.9 bar (100 psi) differential
<b>Filtration volume</b>	≤ 100 mL
<b>Hold-up volume</b>	
FG, FH, LCR	≤ 0.1 mL after air purge at pressure that exceeds bubble point of the membrane
LS	≤ 0.3 mL after air purge at pressure that exceeds bubble point of the membrane
<b>Typical average flow rate at 21 °C and 10 psi</b>	
FG	100 mL/min (methanol)
FH	275 mL/min (methanol)
LCR	70 mL/min (water)
LS	220 mL/min (water)
<b>Connections</b>	Female Luer-Lok™ inlet, Male Luer-slip outlet

## HPLC Certification

Millex®-LCR syringe filters are tested for UV-absorbing extractables. HPLC analysis of 1 mL samples of both acetonitrile and water collected after discarding the first 1 mL of solvent showed no peaks greater in intensity than 0.004 AUFS (after the column frontal volume) at either 214 nm or 254 nm.

## Product Ordering

Purchase products online at [SigmaAldrich.com/Products](https://SigmaAldrich.com/Products).

Millex® Syringe Filter	50/pk	250/pk	1000/pk
FG	SLFG025NS	SLFG025NB	SLFG025NK
FH	SLFH025NS	SLFH025NB	SLFH025NK
LCR	-	-	SLCR025NK
LS	SLLS025NS	-	-

Merck, Millipore, Fluoropore, Millex, and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.  
© 2022 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

The life science business of Merck operates as MilliporeSigma in the U.S. and Canada.

## Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

## Contact Information

For the location of the office nearest you, go to [SigmaAldrich.com/Offices](https://SigmaAldrich.com/Offices).










## Terms and Conditions of Sale

Warranty, use restrictions, and other conditions of sale may be found at [SigmaAldrich.com/Terms](https://SigmaAldrich.com/Terms).

## Technical Assistance

Visit the tech service page on our web site at [SigmaAldrich.com/TechService](https://SigmaAldrich.com/TechService).

## Symbol Definitions

Symbol	Definition	Symbol	Definition
	Non-sterile		HPLC Certified
	Consult instructions for use		Date of manufacture
	Do not re-use		Manufacturer
	Catalogue number		Caution
	Batch code		

**MERCK**