



User Guide

HPLC Certified

Millex®-LG and Millex®-LH 4, 13, and 25 mm Syringe Filters



Non-sterile
For laboratory use only

Introduction

This document provides chemical compatibility information, operating steps, and specifications for non-sterile HPLC certified 4, 13, and 25 millimeter (mm) Millex® syringe filters. These filters are recommended for filtration of solutions prior to instrumentation analysis. The single-use, disposable filter unit removes particles larger than the membrane's rated pore size. It consists of a hydrophilic polytetrafluoroethylene (PTFE) membrane sealed in a high density polyethylene housing.

NOTE: The 4 mm syringe filter has a stepped outlet to facilitate filtration into small vials by eliminating air-locks. The outlet of this syringe filter also allows a Luer connection to be made.

The table below lists membrane pore sizes, filter sizes, and recommended filtration volumes.

Syringe Filter	Membrane Pore Size	Filtration Volume	Application
LG	0.20 µm	4 mm: up to 1 mL	Remove fine particles from aqueous and organic solutions.
		13 mm: 1–10 mL	
		25 mm: 10–100 mL	
LH	0.45 µm	4 mm: up to 1 mL	Clarify aqueous and organic solutions.
		13 mm: 1–10 mL	
		25 mm: 10–100 mL	

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Millex®-LG and LH syringe filters are tested for UV-absorbing extractables. HPLC analysis of 1 mL samples of acetonitrile 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.

Chemical Compatibility

Millex® syringe filters are compatible with aqueous, mild organic, and organic solutions. You can use them 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, no warranty is provided or implied with respect to such information. Agents not listed below should be tested with the Millex® syringe filter prior to use.

Chemical

Acetic acid, 5%	Dimethyl sulfoxide	Hydrogen peroxide (3%)	Phenol (10%)
Acetone	Ethers	Isobutyl alcohol	Pyridine
Amyl acetate	Ethyl acetate	Isopropyl acetate	Silicone oils
Amyl alcohol	Ethylene glycol	Kerosene	Sulfuric acid (3 N)
Benzene	Formaldehyde	Methyl ethyl ketone	Trifluoroacetic acid
Benzyl alcohol	Freon® (TF or PCA)	Methyl isobutyl ketone	Tetrahydrofuran
Boric acid	solvent	Mineral spirits	Toluene
Brine (sea water)	Gasoline	Nitrobenzene	Trichloroethane
Butyl alcohol	Glycerine (Glycerol)	Nitrogen	Trichloroethylene
Carbon tetrachloride	Helium	Ozone (10 ppm in water)	Xylene
Cellosolve® (Ethyl)	Hydrochloric acid	Paraldehyde	
solvent	Hydrofluoric acid	Perchloroethylene	
Cyclohexane	Hydrogen	Petroleum based oils	

You can use Millex®-LG and LH syringe filters to filter the agents listed in the following table for low extractable HPLC instrumentation analysis applications.

NOTE: It is recommended that you discard the first 1 mL or rinse with 1 to 2 mL of primary solvent before sample filtration.

Acetonitrile	Dimethylformamide	Hexane	Methylene chloride
Chloroform	Dioxane	Isopropyl alcohol	Pentane
Dimethylacetamide	Ethyl alcohol	Methyl alcohol	Petroleum ether

How to use Millex® Syringe Filters

WARNINGS:

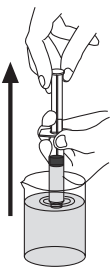
- Do not use the Millex® syringe filter for direct patient care applications; it is designed for laboratory use only.
- Do not use the 13 and 25 mm syringe filters with syringes smaller than 10 mL because pressures in excess of the maximum pressure rating may be reached, potentially causing damage to the syringe filter and/or personal injury.

CAUTIONS:

- Do not use the syringe filter at temperatures above 45 °C (113 °F).
- Do not use the syringe filter to filter a protein-containing solution unless binding of the sample to the filter has been evaluated.
- Do not reuse the syringe filter.
- To prevent sample contamination, do not use the same syringe filter to filter different solutions.

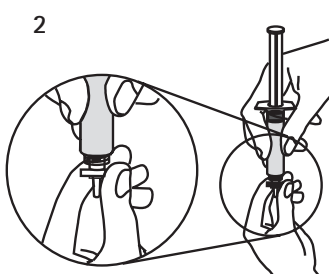
Instructions for Use

1




Fill the syringe with the solution to be filtered.

2



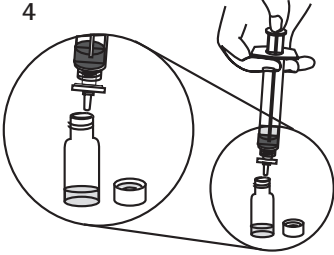
Attach the syringe to the Millex® syringe filter.

3



Hold the syringe with filter pointing up and “top off” by pushing a few drops through the filter.

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

Housing	High density polyethylene		
Membrane	Hydrophilic PTFE		
Pore size	LG: 0.20 µm LH: 0.45 µm		
Dimensions	4 mm	13 mm	25 mm
Inlet to outlet	19.7 mm (0.78 in.)	21.1 mm (0.83 in.)	19.8 mm (0.78 in.)
Diameter	6.4 mm (0.25 in.)	14.7 mm (0.58 in.)	30 mm (1.18 in.)
Filtration surface area	0.1 cm² (0.016 in²)	0.65 cm² (0.10 in²)	3.9 cm² (0.60 in²)
Pressure limit at 25 °C	14 bar (200 psi)	7 bar (100 psi)	7 bar (100 psi)
Filtration volume	≤ 1 mL	1–10 mL	10–100 mL
Hold-up volume*	≤ 10 µL	≤ 25 µL	≤ 100 µL
Temperature limit	45 °C (113 °F)		
Connections	Female Luer-Lok™ inlet, male Luer-slip outlet		
	NOTE: 4 mm filter has a stepped male Luer-slip outlet		

* after air purge at pressure that exceeds bubble point of the membrane

Product Ordering Information

Diameter	Pore size	Cat. no.	Qty/pk
4 mm	0.20 µm	SLLGH04NL	100
	0.20 µm	SLLGH04NK	1000
	0.45 µm	SLLHH04NL	100
	0.45 µm	SLLHH04NK	1000
13 mm	0.20 µm	SLLGH13NL	100
	0.20 µm	SLLGH13NK	1000
	0.45 µm	SLLHH13NL	100
	0.45 µm	SLLHH13NK	1000
25 mm	0.20 µm	SLLGH25NS	50
	0.20 µm	SLLGH25NB	250
	0.20 µm	SLLGH25NK	1000
	0.45 µm	SLLHH25NS	50
	0.45 µm	SLLHH25NB	250
	0.45 µm	SLLHH25NK	1000

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Standard Warranty

The applicable warranty for the products listed in this publication may be found at www.millipore.com/terms (within the "Terms and Conditions of Sale" applicable to your purchase transaction).

13 and 25 mm Millex®-LG and LH syringe filters Made in Ireland	4 mm Millex®-LG and LH syringe filters Made in Japan
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