User Guide

Millex® Syringe Filters Nonsterile 25 mm

Millex®-LG, LCR, HV, GN, HN, PB Filters

Automation Compatible and High Particulate Filtration

For laboratory use only

SLPBDZ5NZ	**SLCRBZ5NZ**	**SLGNDZ5NZ**	**SLLGM25NS**	**SLHVM25NK**
SLPBDZ5NK	**SLCRBZ5NK**	**SLGNDZ5NK**	**SLLGM25NK**	**SLGNM25NS**
SLLGDZ5NZ	**SLHVDZ5NZ**	**SLHNDZ5NZ**	**SLCRM25NS**	**SLGNM25NK**
SLLGDZ5NK	**SLHVDZ5NK**	**SLHNDZ5NK**	**SLCRM25NK**	**SLHNM25NS**
SLCRDZ5NZ	**SLHVBZ5NZ**	**SLHNBZ5NZ**	**SLHVM25NS**	**SLHNMZ5NZ**
SLCRDZ5NK	**SLHVBZ5NK**	**SLHNBZ5NK**	**SLHVMZ5NZ**	**SLHNM25NK**

Introduction

This document provides chemical compatibility information, operating steps, and specifications for nonsterile 25 millimeter (mm) Millex® Automation Compatible (AC) and High Particulate Filtration (HPF) syringe filters. The single-use, disposable filters remove particles larger than the membrane's rated pore size and are recommended for filtering 10–100 milliliter (mL) volumes to remove particles prior to instrumentation analysis.

The Millex® syringe filter consists of a membrane and/or glass fiber filter in a high density polyethylene housing. For details on the type of membrane/glass fiber syringe filters available, see "Product Ordering" section.

Filter	Membrane	Application
PB	1.0 µm glass fiber	Clarification of aqueous or organic solutions
LG	0.20 µm PTFE (polytetrafluoroethylene)	Clarification of protein-containing solutions, and aqueous or organic solutions
LCR	0.45 µm PTFE	Clarification of protein-containing solutions, and aqueous or organic solutions
HV	0.45 µm PVDF (polyvinylidene fluoride)	Clarification of protein-containing solutions, and aqueous or mild organic solutions
GN	0.20 µm nylon	Clarification of aqueous or mild organic solutions
HN	0.45 µm nylon	Clarification of aqueous or mild organic solutions

Chemical Compatibility

The 25 mm Millex® AC and HPF 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 beyond our control that may affect the use of the syringe filter, 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.

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

Chemical	*	Chemical	*	Chemical	*	Chemical	*	Chemical	*	Chemical	*
Acetic acid, glacial	1	Chloroform	1	Formaldehyde		Hypo (sodium thiosulfate)		Nitrogen		Sodium chloride (2 M)	
Acetone	2	Cyclohexane		Formic acid (50%)	1	Isobutyl alcohol		Ozone (10 ppm in water)		Sodium hydroxide	1,3
Acetonitrile		Cyclohexanone	2	Freon® (TF or PCA) solvent		Isopropyl acetate		Paraldehyde		Sulfuric acid (3 N)	1
Ammonium hydroxide	1,3	Dimethylacetamide	2	Gasoline		Isopropyl alcohol		Perchloroethylene	1	Tetrahydrofuran	
Ammonium sulfate (saturated)	2	Dimethylformamide	2	Glycerine (glycerol)		Kerosene		Petroleum based oils		Toluene	
Amyl acetate		Dimethylsulfoxide	2	Helium		Lactic acid (50%)	1,2	Petroleum ether		Trichloroacetic acid (aqueous solution)	1
Amyl alcohol		Dioxane		Hexane		Methyl alcohol		Phenol (10%)		Trichloroethane	1
Benzyl alcohol		Ethers		Hydrochloric acid	1	Methylene chloride		Potassium hydroxide	1,3	Trichloroethylene	1
Boric acid		Ethyl acetate		Hydrofluoric acid	3	Methyl ethyl ketone	2	Pyridine	1,2	Trifluoroacetic acid	1
Butyl alcohol		Ethyl alcohol		Hydrogen		Methyl isobutyl ketone	2	Silicone oils		Urea (8 M)	
Cellosolve® (ethyl) solvent		Ethylene glycol		Hydrogen peroxide (3%)		Mineral spirits		Sodium carbonate (aqueous solution)	1	Xylene	

1 Not compatible with GN and HN
2 Not compatible with HV
3 Not compatible with Glass Fiber

How to Use 25 mm Millex® AC and HPF Syringe Filters

WARNINGS:

- The 25 mm Millex® syringe filter is intended for laboratory use only and is not a medical device for direct patient care applications.
- 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.

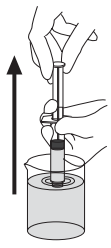
CAUTIONS:

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

Instructions for Use

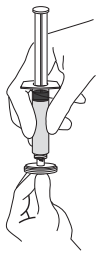
Optional: To purge the unit and maximize sample throughput, remove the Millex® filter from the syringe and draw air into the syringe. Then reattach the Millex® filter and push the plunger to force some of the air through the filter.

1



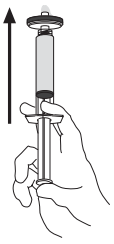
Fill the syringe with the solution to be filtered.

2



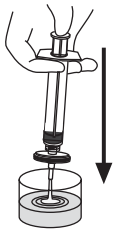
Attach the syringe to the Millex® syringe filter.

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.

Specifications

Housing	High density polyethylene
Prefilter	Borosilicate glass fiber
Membrane	LG: Hydrophilic PTFE, 0.20 µm pore size
	LCR: Hydrophilic PTFE, 0.45 µm pore size
	HV: Durapore® PVDF, 0.45 µm pore size
	GN: Nylon, 0.20 µm pore size
	HN: Nylon, 0.45 µm pore size
Dimensions	
Inlet to outlet	21 mm (0.83 in.)
Diameter	30 mm (1.18 in.)
Filtration surface area	3.9 cm^2 (0.61 in^2)
Filtration volume (guideline)	10–100 mL
Hold-up volume (after air purge)	≤ 100 µL (membrane) ≤ 250 µL (membrane w/ prefilter)
Connections	Female Luer-Lok™ inlet, male Luer-slip outlet
Temperature limit	45 °C (113 °F) maximum
Pressure limit at 21 °C	≤ 100 psi (6.9 bar) inlet and differential

HPLC Certification

Millex®-LG, LCR, GN, and HN filters that do not contain glass fiber 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. HPLC claims do not apply to certain automation compatible (AC) devices containing a pre-filter and High Particulate Filtration devices as listed below.

Representative samples of all lots manufactured are tested.

Product Ordering

Purchase products online at SigmaAldrich.com/products.

Millex® Automation Compatible (AC) Syringe Filters

Syringe Filter	Description	Qty/Pk	Cat. No.
Millex®-PB	1.0 µm glass fiber	200 (8×25)	SLPBDZ5NZ
		1000	SLPBDZ5NK
Millex®-LG	0.20 µm hydrophilic PTFE	200 (8×25)	SLLGDZ5NZ
		1000	SLLGDZ5NK
Millex®-LCR	0.45 µm hydrophilic PTFE	200 (8×25)	SLCRDZ5NZ
		1000	SLCRDZ5NK
Millex®-LCR/PB	0.45 µm hydrophilic PTFE with 1.0 µm glass fiber prefilter	200 (8×25)	SLCRBZ5NZ
		1000	SLCRBZ5NK
Millex®-HV	0.45 µm Durapore® PVDF membrane	200 (8×25)	SLHVDZ5NZ
		1000	SLHVDZ5NK
Millex®-HV/PB	0.45 µm Durapore® PVDF membrane with 1.0 µm glass fiber	200 (8×25)	SLHVBZ5NZ
		1000	SLHVBZ5NK
Millex®-GN	0.20 µm nylon	200 (8×25)	SLGNDZ5NZ
		1000	SLGNDZ5NK
Millex®-HN	0.45 µm nylon	200 (8×25)	SLHNDZ5NZ
		1000	SLHNDZ5NK
Millex®-HN/PB	0.45 µm nylon with 1.0 µm glass fiber prefilter	200 (8×25)	SLHNBZ5NZ
		1000	SLHNBZ5NK

Millex® High Particulate Filtration (HPF) Syringe Filters

Filter Unit	Description	Qty/Pk	Cat. No.
Millex®-LG	0.20 µm hydrophilic PTFE with graduated multi-layer glass fiber prefilter	50	SLLGM25NS
		1000	SLLGM25NK
Millex®-LCR	0.45 µm hydrophilic PTFE with graduated multi-layer glass fiber prefilter	50	SLCRM25NS
		1000	SLCRM25NK
Millex®-HV	0.45 µm Durapore® PVDF membrane with graduated multi-layer glass fiber prefilter	50	SLHVM25NS
		200 (8×25)	SLHVMZ5NZ
		1000	SLHVM25NK
Millex®-GN	0.20 µm nylon with graduated multi-layer glass fiber prefilter	50	SLGNM25NS
		1000	SLGNM25NK
Millex®-HN	0.45 µm nylon with graduated multi-layer glass fiber prefilter	50	SLHNM25NS
		200 (8×25)	SLHNMZ5NZ
		1000	SLHNM25NK

Notice

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