



PureFlo® PES Mini Cartridges

PureFlo® PES Mini Cartridges are highly-retentive hydrophilic PES membrane filters that have been specially designed for critical applications. The PES membrane in an all-polypropylene construction provides excellent chemical compatibility and superior flow per unit area as compared to other membrane cartridges. No adhesives, binders or surfactants are used in the manufacturing process. All cartridges are rinsed with high-purity water to reduce extractables and downtime.

The hydrophilic PES membrane does not require pre-wetting with IPA and flushing with DI water, thereby eliminating a potential source of contamination and hazardous waste. In addition, unlike hydrophobic filters such as PTFE, the hydrophilic membrane reduces the potential for bubble formation by not de-wetting in outgassing fluids. All filter cartridges are 100% integrity tested to ensure filter performance each and every time out of the package. PureFlo® PES Mini Cartridges are well-suited for critical applications where superior flow and particle removal efficiency at 0.04, 0.1, 0.2, 0.45, 0.65, 0.80 and 1.2 micron is required.



Applications	
Acids	Ink Jets
Bases	Beverages
Solvents	Pharmaceuticals
Fine Chemicals	Biologics
Plating Solutions	Dyes
Process Water	Lacquers

Regulatory Compliance:

Manufactured from materials that conform to the requirements of 21 CFR Part 177 of the U.S. Code of Federal Regulations and USP Class VI Biological Test for Plastics

Retrofits Code 2230, 4463, 4440 & SLK

Materials of Construction:

- Membrane: Hydrophilic Polyethersulfone
- Membrane Supports: Polypropylene
- Cage, Core, End Caps: Polypropylene
- O-Rings: Silicone, EPDM, Fluoroelastomer, Buna N

Dimensions (nominal):

- Lengths: 1.5 in (38 mm), 2.5 in (63.5 mm), 5 in. (127 mm)
- Diameter: 2.2 in. (56 mm)

Effective Filtration Area:

- 0.78 ft² (720 cm²) per 1.5" cartridge
- 1.5 ft² (1390 cm²) per 2.5" cartridge
- 2.8 ft² (2600 cm²) per 5.0" cartridge

Operating Conditions:

- Maximum Forward Differential Pressure:
 - 4.1 bar (59.5 psid) at 20 °C
 - 2.0 bar (29 psid) at 80 °C
- Maximum Reverse Differential Pressure:
 - 2.0 bar (29 psid) at 20 °C
 - 1.0 bar (14.5 psid) at 80 °C
- Maximum Operating Temperature: 80 °C

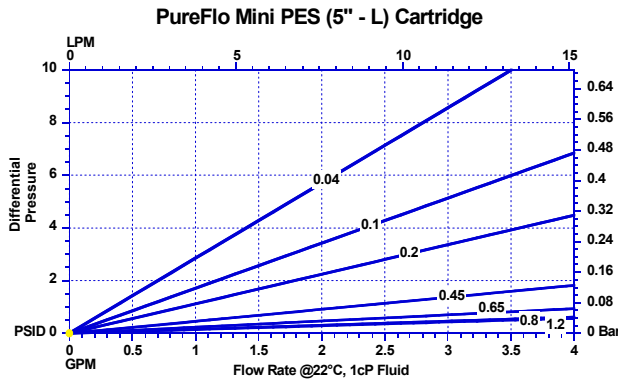
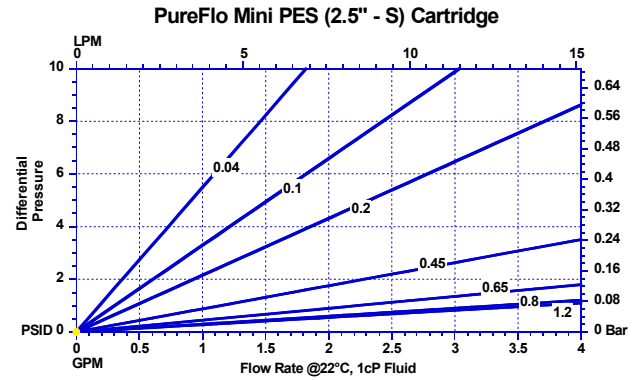
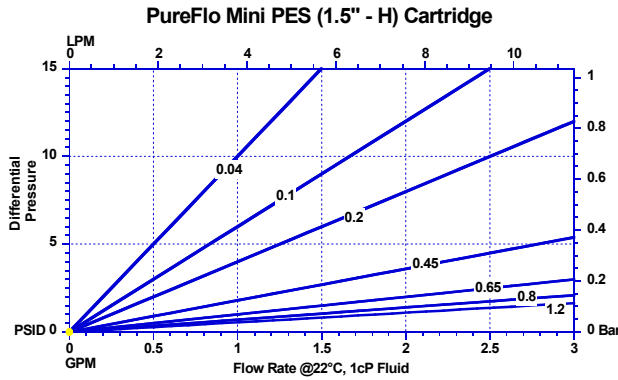
Sterilization & Autoclaving:

The filters can be sterilized by autoclaving for up to 25 cycles at 125 °C (257 °F) for 30 minutes. The filters can also be sterilized by steam-in-place procedure up to 10 cycles at 135 °C (275 °F) for 30 minutes at less than 0.3 bar (4.35 psi) differential pressure. The filters can also be sanitized by hot water or common chemicals that are compatible with filter components.

Features	Benefits
<ul style="list-style-type: none"> ■ Hydrophilic PES Membrane 	<ul style="list-style-type: none"> ■ IPA pre-wetting not required – thereby eliminating a potential source of contamination and disposal waste ■ Reduces downtime and improves throughput ■ Economic alternative to PTFE filters ■ No de-wetting in outgassing fluids, unlike hydrophobic filters such as PTFE
<ul style="list-style-type: none"> ■ Wide Chemical & Thermal Compatibility 	<ul style="list-style-type: none"> ■ Provides excellent compatibility with a wide-range of chemicals
<ul style="list-style-type: none"> ■ Low Levels of Filter Extractables 	<ul style="list-style-type: none"> ■ No adhesives, binders, or surfactants are used during manufacturing resulting in superior downstream cleanliness ■ All cartridges are rinsed with high-purity water



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Flange End Modification

PureFlo PES Cartridge Ordering Guide

PureFlo Mini PES Filter Cartridges	Removal Rating	End Modifications	Length	O-Ring / Gasket Materials	Package Qty	Grade
MMS = Mini PES Cartridge	004 = 0.04 micron	0 = 222 O-Ring Flat	H = 1.5"	E = EPDM	2P = 2pc/ pack (5")	Blank = Standard
	010 = 0.10 micron	6 = 226 O-Ring Flat	S = 2.5"	N = Buna N	3P = 3pc/ pack (1.5" and 2.5")	PH = Pharm grade
	020 = 0.20 micron	A = 116 Inner O-Ring		S = Silicone		Option
	045 = 0.45 micron	B = 1.5" Tri-Clamp		T = TEV		- 5 = SS Insert
	065 = 0.65 micron	C = 015 O-Ring		U = TES		
	080 = 0.8 micron	D = 1/2" MNPT		V = Fluoroelastomer		
	120 = 1.2 micron	E = 118 O-Rings		O = O-Ringless		

Example - A 3 pack of 2.5", 0.1 micron filters with 2-116 EPDM o-ring would be MMS010ASE3P

* - F end modification is compatible to fit in a PALL SealKleen™ Housing, ** - M end modification is compatible to fit in a Millipore OptiSeal™ Housing



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