

## PureFlo® Pharmaceutical Grade Cartridge

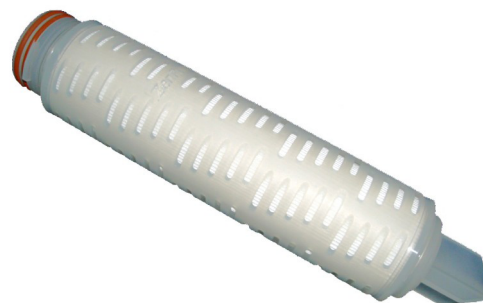
The PureFlo® pharmaceutical grade cartridges are designed to produce product sterility. The allpolypropylene construction provides excellent chemical compatibility and superior flow per unit area as compared to other membrane cartridges. PureFlo® pharmaceutical grades cartridges have been designed for final filtration in biopharmaceutical applications. The hydrophilic PES membrane does not require prewetting agents, thereby eliminating a potential source of contamination. The PES membrane has low proteinbinding characteristics to maximize yields

No adhesives, binders, or surfactants are used in the manufacturing process. All cartridges are rinsed with pyrogen-free water to reduce extractables and downtime. All filter cartridges are 100% integrity tested to ensure filter performance and quality. PureFlo pharmaceutical grade filter cartridges are well-suited for critical applications where superior flow and bacterial retention is required.

Applications	
Culture media	Fermentation Broths
Serums	LVP ( Large Volume Parenterals)
Vaccines	Pharmaceuticals
Fine Chemicals	Biologics
Antibiotics	Beverages
Water	Scale Up Processes

### Regulatory Compliance

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



### SPECIFICATIONS

#### Bacterial Retention

Complete retention of  $\geq 10^7$  organisms/cm<sup>2</sup> of *Brevundimonas diminuta* in accordance with the current HIMA challenge methodology (ASTM F838-83). Validation Guide available upon request.

#### Sterilization & Autoclaving

The filters can be sterilized by autoclaving for up to 25 cycles at 257°F/125°C for the MCS Series and up to 50 cycles at 257°F/125°C for the MPS Series Filters. The filters can also be sterilized by steam-in-place procedure up to 10 cycles at 275°F/135°C for the MCS Series and up to 30 cycles at 275°F/135°C for the MPS Series. Both for 30 minutes at less than 0.3 bar differential pressure. The filters can also be sanitized by hot water or common chemicals that are compatible with filter components.

#### Water Bubble Point Specification

0.1um : 23psi, 0.16 MPA (IPA)  
0.2um : 47psi, 0.32 MPA

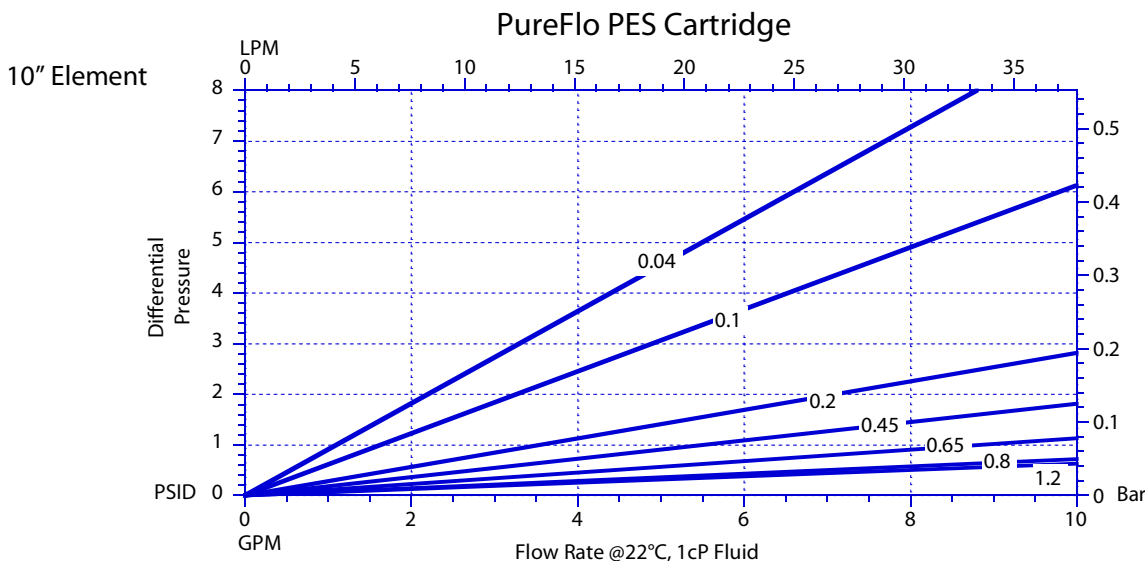
#### Bio-Safety

Filter effluent is non-pyrogenic per USP bacterial endotoxin (<0.25 EU/ml)

Features	Benefits
Hydrophilic PES Membrane (Absolute Rated)	Inherently hydrophilic High flow rate reduces processing time Low protein-binding membrane maximizing yields Biologically inert membrane Bacterial retentive to produce sterile solutions
Wide Chemical & Thermal Compatibility	Provides excellent compatibility with a widerange of chemicals
Low Filter Extractables	No adhesives, binders, or surfactants are used during manufacturing resulting in superior downstream cleanliness All cartridges are rinsed with pyrogen-free water



## PureFlo® Pharmaceutical Grade Cartridge



### Materials of Construction

Membrane: Hydrophilic Polyethersulfone  
Membrane Supports: Polypropylene  
Cage, Core, End Caps: Polypropylene  
Gasket / O-Rings: EPDM, Buna N, Silicone,  
Viton, TES, and TEV

### Dimensions (nominal)

Lengths: 5 in. (13 cm), 10 in. (25 cm),  
20 in. (50 cm), 30 in. (76 cm), 40 in. (102 cm)  
Diameter: 2.75 in. (7 cm)

### Effective Filtration Area

0.65 m<sup>2</sup> (7 ft<sup>2</sup>) per 10" cartridge element

### Operating Conditions

Maximum Forward Differential Pressure:

5.0 bar (73 psid) at 68°F/20°C

2.0 bar (29 psid) at 176°F/80°C

Maximum Reverse Differential Pressure:

3.0 bar (44 psid) at 68°F/20°C

1.0 bar (14.5 psid) at 176°F/80°C

Maximum Operating Temperature: 176°F/80°C

### PureFlo PES Pharmaceutical Grade Filter Cartridge Ordering Guide

PureFlo PES Filter Cartridges	Removal Rating	End Modifications	Length	O-Ring / Gasket	Package Qty	Inserts	Pharm Grade
MCS = Single Layer	04 = 0.04 micron	0 = 222 O-Ring Flat	1 = 10"	E = EPDM	1 = 1pc/ pack	Blank = Standard	-PH = Pharma Grade
	10 = 0.10 micron	5 = 222 O-Ring Spear	2 = 20"	N = Buna N		- 5 = SS Insert	-ETO = ETO Sterilization
	20 = 0.20 micron	6 = 226 O-Ring Flat	3 = 30"	S = Silicone			-G(pore Size)= Glass Fiber PreFilter
MPS = Dual Layer	50 = 0.45 micron	7 = 226 O-Ring Spear	4 = 40"	V = Viton			-P(pore Size)= Poly Pro Media PreFilter
	65 = 0.65 micron	F = DOE Flat Gasket	5 = 5"	T = TEV*			-S(pore Size)= PES PreFilter
	1X = 1.20 micron	S = SOE Flat Gasket		U = TES*			
		Z = SOE Internal 213					
		O-ring Flat **					

Example - Pharmaceutical grade, 10", 0.2 micron cartridge, with 2-222 Silicone o-ring, Flat end cap, and no insert would be MCS2001S1-PH

\* - not available in Code Z

\*\* - only available in 5", 10" and 20"

