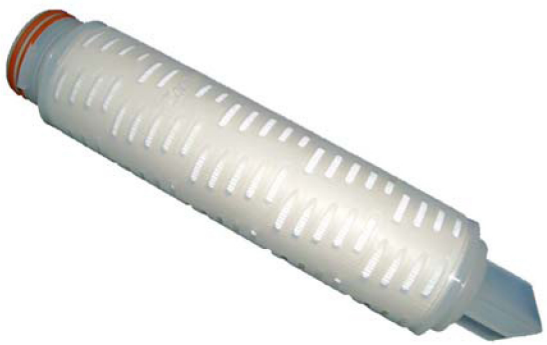
International Filter Products
Revolutionary systems for your industry

PureFlo® Pharmaceutical Grade Cartridges

The PureFlo® Pharmaceutical Grade Cartridges are designed for product sterility. The all-polypropylene construction provides excellent chemical compatibility and superior flow per unit area as compared to other membrane cartridges. PureFlo® Pharmaceutical Grade Cartridges have been designed for final filtration in biopharmaceutical applications. The hydrophilic PES membrane does not require pre-wetting agents, thereby eliminating a potential source of contamination. Also, the PES membrane has low protein-binding 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 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

SPECIFICATIONS

Bacterial Retention

Complete retention of $\geq 10^7$ organisms/cm^2 of *Brevundimonas diminuta* in accordance with the current HIMA challenge methodology (ASTM F838-05). Validation guide available upon request.

Water Bubble Point Specification

0.1 µm : 23 psi (0.16 MPA) in IPA
0.2 µm : 50 psi (0.35 MPA)

Bio-Safety

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

Sterilization & Autoclaving

The filters can be sterilized by autoclaving for up to 50 cycles at 125 °C (257 °F) for 30 minutes. The filters can also be sterilized by steam-in-place procedure up to 30 cycles at 135 °C (275 °F) for 30 minutes at less than 0.3 bar differential pressure. The filters can also sanitized by hot water or common chemicals that are compatible with filter components.

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.

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

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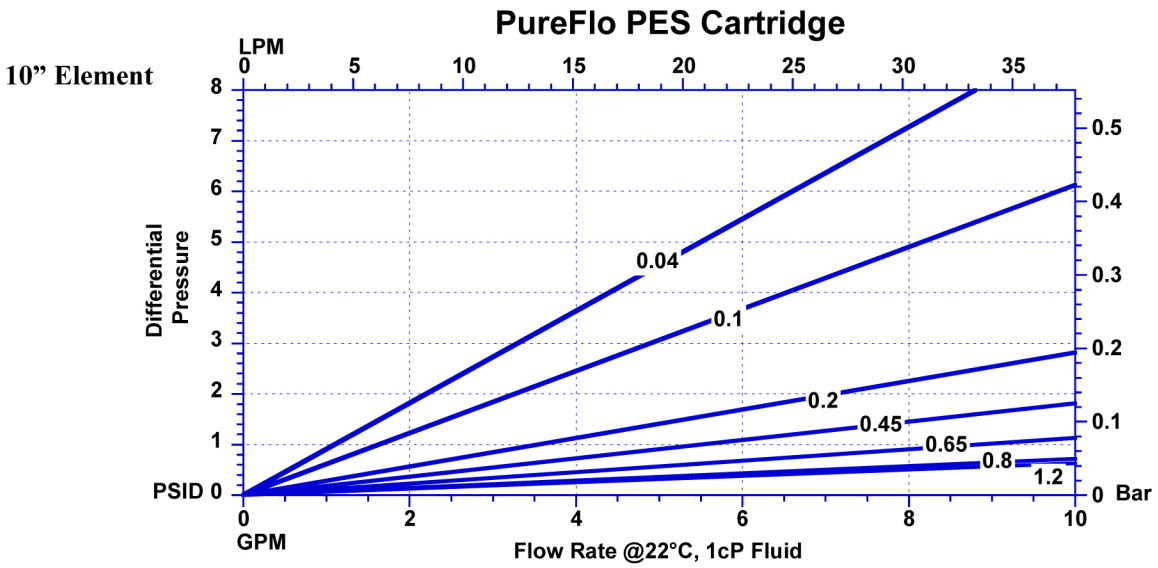

Materials of Construction

Membrane: Hydrophilic Polyethersulfone (PES)
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. (51 cm), 30 in. (76 cm), 40 in. (102 cm)
Diameter: 2.75 in. (70 mm)

Effective Filtration Area

0.65 m^2 (7 ft^2) per 10" cartridge element

Operating Conditions

Maximum Forward Differential Pressure:
5.0 bar (72.5 psid) at 22°C
2.0 bar (29 psid) at 80°C
Maximum Reverse Differential Pressure:
3.0 bar (43.5 psid) at 22°C
1.0 bar (14.5 psid) at 80°C
Maximum Operating Temperature: 80°C

PureFlo PES Pharmaceutical Grade Cartridge Ordering Guide

PureFlo PES Filter Cartridges	Removal Rating	End Modifications	Length	O-Ring / Gasket Materials	Package Qty	Options	Options
MCS = PES with PP construction Pharma grade	**04** = 0.04 micron	**0** = 222 O-Ring Flat	**1** = 10"	**E** = EPDM	**1** = 1pc/ pack	**- 5** = SS Insert	**-PH** = Pharma Grade
	10 = 0.10 micron	**3** = 222 O-Ring w/tabs Spear	**2** = 20"	**N** = Buna N		**- RI** = RFID Chip	**-ETO** = ETO Sterilization
	20 = 0.20 micron	**5** = 222 O-Ring Spear	**3** = 30"	**P** = Peroxide Cured EPDM			**-G(pore Size)**= Glass Fiber PreFilter
	50 = 0.45 micron	**6** = 226 O-Ring Flat	**4** = 40"	**Q** = Platimum Cured Silicon			
	65 = 0.65 micron	**7** = 226 O-Ring Spear	**5** = 5"	**S** = Silicone			**-P(pore Size)**= Poly Pro Media PreFilter
	80 - 0.80 micron	**8** = 223 O-Ring Flat	**9** = 9.75"	**T** = TEV or FEP Gasket			
	1X = 1.20 micron	**F** = DOE Flat Gasket		**U** = TES*			**-S(pore Size)** = PES PreFilter
		S = SOE Flat Gasket		**V** = Fluoroelastomer			
		Z = SOE Internal O-ring Flat **					

Example - Pharmaceutical grade, 10", 0.2 micron cartridge, with 2-222 Silicone o-ring, Flat end cap, and no inse

* - not available in Code Z ** - only available in 5", 9.75", 10" and 20", retrofit for DOE housings

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ISO Certified 9001 14001

TÜV MANAGEMENT SERVICE ISO 13485

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