

# Advantage™ PS Filter Cartridges

■ Polyethersulfone Membrane

## Ultra-Pure Membrane Series

### High Flow Rate Capability With Polyethersulfone Membrane Filter Cartridges

Ultra-Pure polyethersulfone membrane cartridges provide superior flow rates and stand up to a wide variety of chemicals in applications including chemical, food and beverage, and pharmaceutical. Unique polyethersulfone construction features a high-surface area design which allows for excellent flow rates and high particle removal efficiency. Hydrophilic polyethersulfone membrane cartridges are ready for use and do not require prewetting.

The Ultra-Pure Polyethersulfone Membrane Series is available in 0.1µm, 0.2µm, 0.45µm and 0.65µm pore sizes.

#### Applications

##### Food & Beverage

- Bottled Water
- Wine
- Beer
- Process Water
- Vinegar
- Aseptic Packaged Liquids
- Edible Oils

##### Information Storage

- Optical Disk Manufacturing
- Hard Disk Manufacturing
- Optical Coatings
- Photographic Films

##### Chemicals

- Bulk Chemicals
- Process Water
- Pharmaceutical Intermediates
- Diagnostics & Reagents
- Electroless Nickel Plating
- Point-of-Use & Distribution



### Features and Benefits

#### Superior Polyethersulfone Membrane Yields

##### Maximum Filtration Results

- High surface area design provides excellent flow rates and life while maintaining high particle removal efficiency.
- Rinsed with 18 megohm-cm UHP water for high purity.
- Excellent resistance to most sanitizing agents such as hot water, concentrated hydrogen peroxide and active chlorine compounds.
- Low pressure drops improve filtration efficiency and extend filter life.
- Spunbonded polypropylene support materials eliminate sites for potential shedding and increased particle counts.

#### Parker's TQM System Assures Consistent Performance and Reliable Filtration

- Strict quality control measures include rigorous testing for rinse up, shedding, flow rate and extractable levels.
- Integrity-tested and testable *in situ*.
- Thermally welded, eliminating adhesive extractables.
- Biosafe in accordance with USP Class VI-121° Plastics Tests.
- Specifically designed to ensure cleanliness.
- All materials of construction are FDA listed as acceptable for potable and edible liquid contact according to CFR Title 21.

### Process Filtration Division



# Ultra-Pure Membrane Series

## Specifications

### Materials of Construction:

- Membrane: hydrophilic polyethersulfone
- Membrane Support/Drainage: polypropylene
- Core/Cage: polypropylene
- End Fittings: polyester
- O-Ring Material: various
- Sealing Method: thermal welding

### Dimensions:

- Diameter: 2.70 in (6.8 cm)
- Lengths: 10-40 in (25-102 cm)

### Surface Area (10 in cartridge):

- Minimum 6.5 ft<sup>2</sup> (0.6 m<sup>2</sup>)

### Endotoxins:

- < 0.25 EU/ml

### Integrity Test:

- Bubble Point (in UHP water):
  - 0.1µm ≥ 70 psig (4.8 bar)
  - 0.2µm ≥ 45 psig (3.1 bar)
  - 0.45µm ≥ 24 psig (1.7 bar)
  - 0.65µm ≥ 16 psig (1.1 bar)
- Diffusion Rate (10 in cartridge):
  - 0.1µm ≤ 50cc/min at 50 psig (3.4 bar)
  - 0.2µm ≤ 50cc/min at 30 psig (2.1 bar)
  - 0.45µm ≤ 50cc/min at 15 psig (1.0 bar)
  - 0.65µm ≤ 50cc/min at 7 psig (0.5 bar)

### Recommended Operating Conditions:

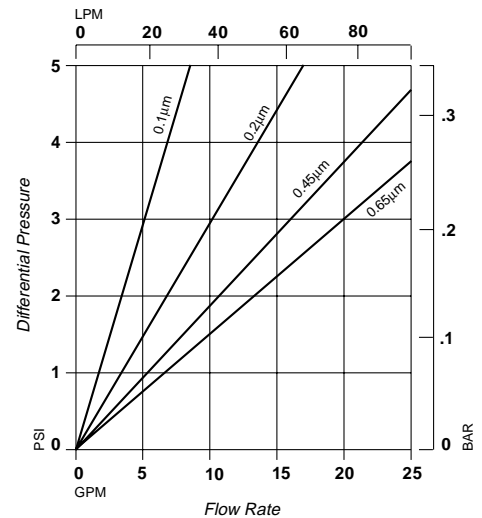
- Maximum Temperature: 176°F (80°C) @ 30 ΔP (2.1 bar)
- Maximum Differential Pressure:
  - Forward: 70 psi (4.8 bar) @ 77°F (25°C)
  - 30 psi (2.1 bar) @ 176°F (80°C)
  - Reverse: 50 psi (3.4 bar) @ 77°F (25°C)

### Sterilization/Sanitization Methods:

- Hot Water: 190°F (88°C)
- Autoclave: 250°F (121°C) for 30 minutes at 15 psi (1.0 bar)
- *In situ* Steam: 284°F (140°C) for 60 minutes at 15 psi (1.0 bar)
- Chlorine
- Hydrogen Peroxide
- Sodium Hypochlorite
- Sanitizing Agents (see Materials Selection Guide)

### Polyethersulfone Cartridges:

Flow rate vs. ΔP for a 1 cps liquid @ 73°F (23°C)\*\*



### Flow Factors:

Pore Size (µm)	GPM/1 PSID	LPM/1 Bar	PSID/1 GPM	Bar/1 LPM
0.1	1.8	99	0.56	0.010
0.2	3.5	192	0.29	0.005
0.45	5.5	301	0.18	0.003
0.65	6.5	356	0.15	0.003

## Ordering Information

PS	F	B	10	E	TC	U
Cartridge Code	Pore Size (µm)	Diameter (in)	Length (in)	O-Ring Material	End Cap Configuration	Grade
PS = Polyethersulfone	S = 0.1 F = 0.2 R = 0.45 H = 0.65	B = 2.7	10 = 10 20 = 20 30 = 30 40 = 40	B = Buna N E = E P R S = Silicone T = PFA/Viton* V = Viton* X = No O-Ring	SC = 2-226/Flat SF = 2-226/Fin TC = 2-222/Flat TF = 2-222/Fin HH = DOE (Gaskets) AC = 020/Flat (Gelman) PP = 119/119 (Ametek and Parker LT Polymeric Housings)	U = Ultra-Pure

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\*\* Consult Process Filtration Division for gas flow data.