

# MPHF Filter Cartridges

■ Polyethersulfone Membrane

**Mem-Pure Membrane Series**

## High Flow Rate Capability With Polyethersulfone Membrane Filter Cartridges

Mem-Pure polyethersulfone membrane cartridges provide superior flow rates over the competition. The unique construction features a high-surface area design that allows for excellent flow rates and high particle removal efficiency. Hydrophilic polyethersulfone membrane cartridges require no prewetting and are ready to use. The Mem-Pure Polyethersulfone Membrane Series of filter cartridges meets or exceeds requirements for the filtration of UHP liquids used in the fabrication of state-of-the-art microelectronic devices.

The Mem-Pure Polyethersulfone Membrane Series is available in 0.03µm, 0.1µm, 0.2µm and 0.45µm pore sizes.

### Applications

UHP Water	UHP Chemical	Microelectronics
■ Central PAD	■ Specialty Chemicals	■ Semiconductor
■ Polishing Stations	■ Point-of-Use	■ Optical Disks
■ Point-of-Use	■ Bulk Photoresists and Solvents	■ Printed Circuits
		■ Hard Disks



### Features and Benefits

#### Superior Polyethersulfone Membrane Yields Maximum Filtration Results

- High surface area design provides excellent flow rates and extended filter life while maintaining high particle removal efficiency.
- Rinsed to 18 megohm-cm resistivity with UHP water.
- Spunbonded polypropylene support materials eliminate sites for potential shedding and increased particle counts.
- Provides broad chemical compatibility.

#### Clark-Reliance Filtration Group 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°C 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.



**WARNING! FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.**  
This document and other information from Clark-Reliance Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection for the products and systems and assuring that all performance, safety and warning requirements of the application are met.

# Mem-Pure Membrane Series

## Specifications

### Materials of Construction:

- Membrane: hydrophilic polyethersulfone
- Membrane Support/Drainage: polypropylene
- Structural Components: polypropylene
- Seal Material: various
- Sealing Method: thermal welding

### Dimensions:

- Diameter: 2.7 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>)

### Integrity Test:

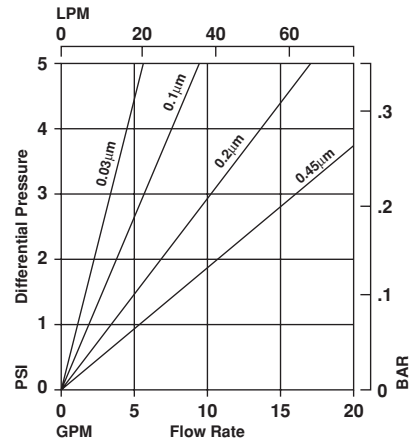
- Bubble Point (in UHP water):
  - 0.03µm: ≥ 90 psig (6.2 bar)
  - 0.1µm: ≥ 70 psig (4.8 bar)
  - 0.2µm: ≥ 45 psig (3.1 bar)
  - 0.45µm: ≥ 24 psig (1.7 bar)
- Diffusion Rate (10 in cartridge):
  - 0.03µm: ≤ 33cc/min at 45 psig (3.1 bar)
  - 0.1µm: ≤ 33cc/min at 40 psig (2.7 bar)
  - 0.2µm: ≤ 33cc/min at 30 psig (2.1 bar)
  - 0.45µm: ≤ 33cc/min at 15 psig (1.0 bar)

### Recommended Operating Conditions:

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

### 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
0.03	1.2	66	0.85	0.015
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

## Ordering Information

MPHF	T	B	10	E	TC	E
Cartridge Code	Pore Size	Diameter	Length	Seal Material	End Cap Configuration	Grade
MPHF = Polyethersulfone	T = 0.03µm S = 0.1µm F = 0.2µm R = 0.45µm	B = 2.7"	10 = 10" 20 = 20" 30 = 30" 40 = 40"	B = Buna-N E = EPR S = Silicone T = PFA/Viton V = Viton X = No O-Ring	HH = DOE gaskets SC = 226/Flat SF = 226/Fin TC = 222/Flat TF = 222/Fin	E = Electronics

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\*\* Consult factory for gas flow data.