

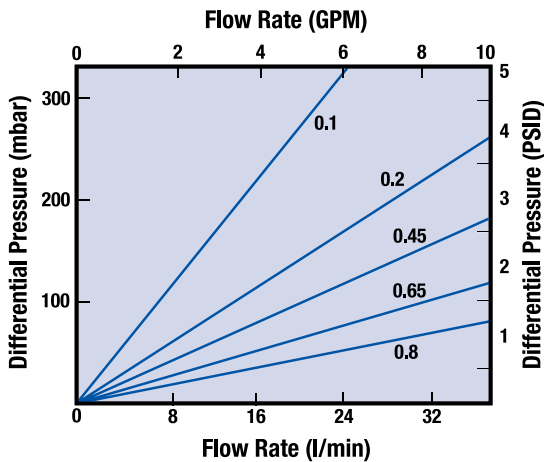


## Filter Data Sheet

### Water Service Grade - Hydrophilic Polyethersulfone (PES) Membrane for Water Purification

**Water Service Grade PES Cartridges** are cost-effective alternatives to General and Electronic Grade Cartridges for a variety of aqueous based fluids. Water Service Cartridges are manufactured from an inherently hydrophilic PES-membrane. The cartridge offers excellent flow characteristics, extended service life, and broad chemical compatibility.

#### Flow Rate (Water, 10")



#### Typical Applications

Deionized Water Systems  
 General-Use Water Filtration  
 Liquid Clarification  
 Recirculating Fluids  
 Chemical Filtration



#### Construction Materials

**Membrane** ..... Polyethersulfone (PES)  
**Support Media** ..... Polypropylene  
**End Caps** ..... Polypropylene  
**Center Core** ..... Polypropylene  
**Outer Support Cage** .. Polypropylene  
**O-rings/Gaskets** ..... Silicone, EPDM, Buna, Viton, Teflon® Encapsulated Viton, Polyfoam

#### Sanitisation

**Filtered Hot Water** ..... 90° C for 30 minutes at a maximum of 1 bar  
 Cartridges are chemically compatible with most ultra-pure chemicals, solvents, and sanitising agents.

#### Dimensions

**Length:**  
 10 to 40 inches (25.4 to 101.6 cm) nominal  
**Outside Diameter:**  
 2.70 inches (7.0 cm) nominal  
**Filter Area:** 0,5 m<sup>2</sup> per 10"

#### Maximum Recommended Operating Conditions

**Maximum Temperature** ..... 80°C

#### Maximum Differential Pressures

**Forward** ..... 3,4 bar at 20°C  
**Reverse** ..... 2,7 bar at 20°C

#### Product Purity

All components FDA acceptable per 21 CFR. All polypropylene components meet the specifications for biological safety per USP Class VI-121 C for plastics.

#### Ordering Information (universal ordering code, not all options are available)

PEW	Pore Size	Length	End Cap Code	O-Rings/Gaskets
	0,1 = 0,1 μm	1 = 10" (25.4 cm)	1 = DOE with Gaskets	1 = Silicone
	0,2 = 0,2 μm	2 = 20" (50.8 cm)	2 = SOE -222 O-rings with Flat Cap	2 = EPDM
	0,45 = 0,45 μm	3 = 30" (76.2 cm)	3 = SOE -222 O-rings with Fin	3 = Buna
	0,65 = 0,65 μm	4 = 40" (101.6 cm)	4 = SOE -222 O-rings with Spring	4 = Viton
	0,8 = 0,8 μm		5 = SOE -226 O-rings with Spring	5 = Teflon® Encapsulated Viton
			6 = SOE -226 O-rings with Flat Cap	6 = Polyfoam End Gaskets
			7 = SOE -226 O-rings with Fin	
			8 = SOE with Spring	
			9 = SOE with Core Extender	

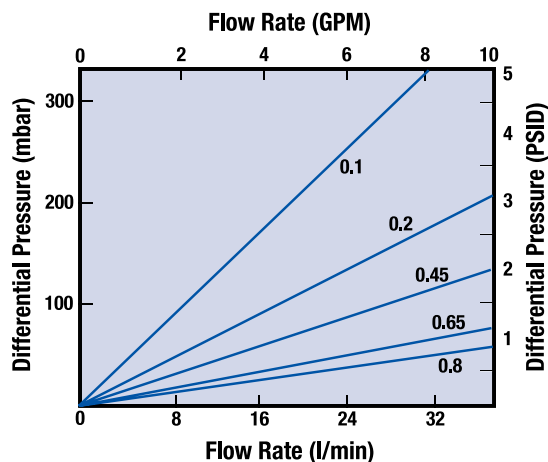


## Filter Data Sheet

### General Grade PES - Hydrophilic Polyethersulfone (PES) Membrane for Liquid Filtration

**General Grade PES Cartridges** are designed for general purpose use wherever a cost effective membrane filter is required. Manufactured to hold the maximum amount of filter media that can be completely and effectively utilised in a cartridge. General Grade Cartridges are manufactured from an inherently hydrophilic PES membrane. The cartridge offers excellent flow characteristics, extended service life, and broad chemical compatibility.

#### Flow Rate (Water, 10")



#### Typical Applications

Deionized Water Systems  
 General-Use Water Filtration  
 Liquid Clarification  
 Recirculating Fluids  
 Chemical Filtration



#### Construction Materials

**Membrane** ..... Polyethersulfone (PES)  
**Support Media** ..... Polypropylene  
**End Caps** ..... Polypropylene  
**Center Core** ..... Polypropylene  
**Outer Support Cage** .. Polypropylene  
**O-rings/Gaskets** ..... Silicone, EPDM, Buna, Viton, Teflon® Encapsulated Viton, Polyfoam

#### Sanitisation

**Filtered Hot Water** ..... 90° C for 30 minutes at a maximum of 1 bar  
 Cartridges are chemically compatible with most ultra-pure chemicals, solvents, and sanitising agents.

#### Dimensions

**Length:**  
 10 to 40 inches (25.4 to 101.6 cm) nominal  
**Outside Diameter:**  
 2.70 inches (7.0 cm) nominal  
**Filter Area:** 0,7 m<sup>2</sup> per 10"

#### Maximum Recommended Operating Conditions

**Maximum Temperature** ..... 80°C

#### Maximum Differential Pressures

**Forward** ..... 3,4 bar at 20°C  
**Reverse** ..... 2,7 bar at 20°C

#### Product Purity

All components FDA acceptable per 21 CFR.  
 All polypropylene components meet the specifications for biological safety per USP Class VI-121 C for plastics.

#### Ordering Information (universal ordering code, not all options are available)

PEG	Pore Size	Length	End Cap Code	O-Rings/Gaskets
	0,1 = 0,1 µm	1 = 10" (25.4 cm)	1 = DOE with Gaskets	1 = Silicone
	0,2 = 0,2 µm	2 = 20" (50.8 cm)	2 = SOE -222 O-rings with Flat Cap	2 = EPDM
	0,45 = 0,45 µm	3 = 30" (76.2 cm)	3 = SOE -222 O-rings with Fin	3 = Buna
	0,65 = 0,65 µm	4 = 40" (101.6 cm)	4 = SOE -222 O-rings with Spring	4 = Viton
	0,8 = 0,8 µm		5 = SOE -226 O-rings with Spring	5 = Teflon® Encapsulated Viton
			6 = SOE -226 O-rings with Flat Cap	6 = Polyfoam End Gaskets
			7 = SOE -226 O-rings with Fin	
			8 = SOE with Spring	
			9 = SOE with Core Extender	



## Filter Data Sheet

### Food & Beverage Grade PES - Hydrophilic Polyethersulfone (PES) Membrane for F&B Applications

**Food & Beverage Grade PES Cartridges** are designed to meet the special needs of the Food & Beverage industry. Polyethersulfone membrane cartridges are resistant to most acids and bases and capable of handling strong sanitisation agents. High flow rates make polyethersulfone a good choice for Food & Beverage applications. This membrane will also handle elevated process temperatures in compatible fluids. To minimize extractables, each cartridge module is rinsed with a high purity flush system. Each cartridge module is also individually tested for integrity using the diffusional flow method.

#### Flow Rate

The following table represents typical water flow at 69 mbar (one psi) pressure differential across a single 10 inch cartridge element. The test fluid is water at ambient temperature. Extrapolation for housing with multiple elements and higher pressure drops is acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore Size	l/min
0.1 µm	9,5
0.2 µm	17
0.45 µm	26,5
0.65 µm	31,4



#### Construction Materials

**Membrane** ..... Polyethersulfone (PES)  
**Support Media** ..... Polypropylene  
**End Caps** ..... Polypropylene  
**Center Core** ..... Polypropylene  
**Outer Support Cage** ..... Polypropylene  
**O-rings/Gaskets** ..... Silicone, EPDM, Buna, Viton, Teflon® Encapsulated Viton, Polyfoam

#### Sanitisation/Sterilisation

**Chemical Sanitisation** - Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.

#### Dimensions

**Length:**  
10 to 40 inches (25.4 to 101.6 cm) nominal  
**Outside Diameter:**  
2.70 inches (7.0 cm) nominal  
**Filter Area:** 0,7 m<sup>2</sup> per 10"  
**Maximum Recommended Operating Conditions**  
**Maximum Temperature** ..... 80°C  
**Maximum Differential Pressures**  
**Forward** ..... 3,4 bar at 20°C  
**Reverse** ..... 2,7 bar at 20°C

#### Product Purity

All components FDA acceptable per 21 CFR. All polypropylene components meet the specifications for biological safety per USP Class VI-121 C for plastics.

#### Ordering Information (universal ordering code, not all options are available)

PEF	Pore Size	Length	End Cap Code	O-Rings/Gaskets
	0,1 = 0,1 µm	1 = 10" (25.4 cm)	1 = DOE with Gaskets	1 = Silicone
	0,2 = 0,2 µm	2 = 20" (50.8 cm)	2 = SOE -222 O-rings with Flat Cap	2 = EPDM
	0,45 = 0,45 µm	3 = 30" (76.2 cm)	3 = SOE -222 O-rings with Fin	3 = Buna
	0,65 = 0,65 µm	4 = 40" (101.6 cm)	4 = SOE -222 O-rings with Spring	4 = Viton
			5 = SOE -226 O-rings with Spring	5 = Teflon® Encapsulated Viton
			6 = SOE -226 O-rings with Flat Cap	6 = Polyfoam End Gaskets
			7 = SOE -226 O-rings with Fin	
			8 = SOE with Spring	
			9 = SOE with Core Extender	



## Filter Data Sheet

### Electronics Grade PES - Hydrophilic Polyethersulfone (PES) Membrane for Electronics Applications

**Electronics Grade PES Cartridges** are designed to meet the special needs of the electronics industry and high purity chemical industries. Polyethersulfone membrane cartridges are resistant to most acids and bases and capable of handling strong sanitisation agents. High flow rates make polyethersulfone a good choice for central DI water systems. This membrane will also handle elevated process temperatures in compatible fluids. To minimize extractables, each cartridge module is pulse power flushed until the rinse effluent reaches 18 megohm-cm and less than 3ppb TOC. Each cartridge module is also individually tested.

#### Flow Rate

The following table represents typical water flow at 69 mbar (one psi) pressure differential across a single 10 inch cartridge element. The test fluid is water at ambient temperature. Extrapolation for housing with multiple elements and higher pressure drops is acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore Size	l/min
0.1 µm	9,5
0.2 µm	17
0.45 µm	26,5
0.65 µm	31,4



#### Construction Materials

**Membrane** ..... Polyethersulfone (PES)  
**Support Media** ..... Polypropylene  
**End Caps** ..... Polypropylene  
**Center Core** ..... Polypropylene  
**Outer Support Cage** ..... Polypropylene  
**O-rings/Gaskets** ..... Silicone, EPDM, Buna, Viton, Teflon® Encapsulated Viton, Polyfoam

#### Sanitisation/Sterilisation

**Chemical Sanitisation** - Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.

#### Dimensions

**Length:**  
10 to 40 inches (25.4 to 101.6 cm) nominal  
**Outside Diameter:**  
2.70 inches (7.0 cm) nominal  
**Filter Area:** 0,7 m<sup>2</sup> per 10"

#### Maximum Recommended Operating Conditions

**Maximum Temperature** ..... 80°C

#### Maximum Differential Pressures

**Forward** ..... 3,4 bar at 20°C  
**Reverse** ..... 2,7 bar at 20°C

#### Product Purity

All components FDA acceptable per 21 CFR.  
 All polypropylene components meet the specifications for biological safety per USP Class VI-121 C for plastics.

#### Ordering Information (universal ordering code, not all options are available)

PEE	Pore Size	Length	End Cap Code	O-Rings/Gaskets
	0,1 = 0,1 µm	1 = 10" (25.4 cm)	1 = DOE with Gaskets	1 = Silicone
	0,2 = 0,2 µm	2 = 20" (50.8 cm)	2 = SOE -222 O-rings with Flat Cap	2 = EPDM
	0,45 = 0,45 µm	3 = 30" (76.2 cm)	3 = SOE -222 O-rings with Fin	3 = Buna
	0,65 = 0,65 µm	4 = 40" (101.6 cm)	4 = SOE -222 O-rings with Spring	4 = Viton
			5 = SOE -226 O-rings with Spring	5 = Teflon® Encapsulated Viton
			6 = SOE -226 O-rings with Flat Cap	6 = Polyfoam End Gaskets
			7 = SOE -226 O-rings with Fin	
			8 = SOE with Spring	
			9 = SOE with Core Extender	