

# PharmBiologic Solutions, LLC

## Advancing custom solutions



### High Purity - Food and Beverage Grade PES

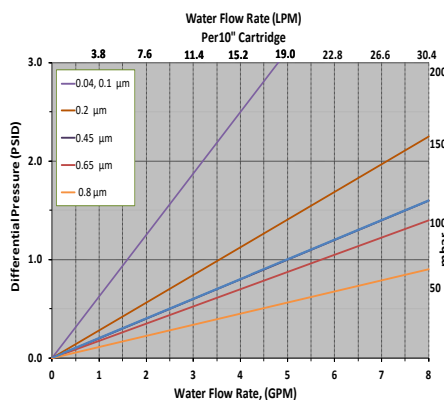
Hydrophilic Polyethersulfone (PES) Membrane Developed for the Food and Beverage Industry

#### Food and Beverage Grade PES Cartridges

have been designed to comply with all FDA requirements for the food industry. The polyethersulfone membrane exhibits low protein-binding characteristics; making the GFPEs series an excellent choice for fermented beverage applications. Each cartridge is flushed with high purity DI water and 100% integrity tested to ensure the delivery of clean effluent as well as low extractables. The Extended Area option (GFPEsX) offers up to 40% more surface area. This additional area results in significant increases in flowrate and loading capacity in the same footprint.



#### Flow Rate vs Pressure Drop



\* Data represents GFPEs. For GFPEsX option, multiply given flowrate by 1.4.

#### Typical Applications

- Wine
- Beer
- Juices
- Soft Drinks
- Bottled Water

#### Ordering Information

GFPEs	Rating (μ)	A	Length	C	End Cap Style	O-Rings/Gaskets	-	Adders
GFPEsX	0.04		10" (25.4 cm)		2 = DOE Flat Gasket	B = Buna		I = Stainless Steel Insert
	0.1		20" (50.8 cm)		3 = 222 w/ Fin	E = EPDM		CS = 316ss Compression Spring
	0.2		30" (76.2 cm)		4 = 222 w/ Flat Cap	S = Silicone		
	0.45		40" (101.6 cm)		6 = 226 w/ Flat Cap	V = Viton®		
	0.65				7 = 226 w/ Fin	T = Teflon® Encapsulated Viton®		
	0.8				16 = 213 Internal O-Ring	Z = Teflon® Encapsulated Silicone		

DISCLAIMER: Filtration data presented is representative of performance observed in controlled laboratory testing. It is not given as a warranty, specification or statement of fitness for use. Specific performance can vary widely depending on contaminant type, fluid properties, flow rates and environmental conditions. It is recommended that users conduct thorough qualification testing to assure the product functions as required.

#### Construction Materials

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

#### Sanitization/Sterilization

**Filtered Hot Water** ..... 80°C for 30 min.  
**Steam Sterilization** ..... 121°C for 30 min., multiple cycles

**Chemicals:** Cartridges are chemically compatible with most chemicals and sanitizing agents.

**Note:** Stainless steel insert option needed for all cartridges being hot water sanitized or steam sterilized.

#### Dimensions

**Length:** 10 to 40 inches (25.4 to 101.6 cm) nominal  
**Outside Diameter:** 2.70 inches (7.0 cm) nominal

#### Maximum Recommended Operating Conditions

**Temperature** ..... 176°F (80°C)

#### Maximum Differential Pressures

**Forward** ..... 50 PSI (3.4 bar) at 20°C  
**Reverse** ..... 40 PSI (2.7 bar) at 20°C

#### FDA Listed Materials

Manufactured from materials which are listed for food contact applications in Title 21 of the U.S. Code of Federal Regulations.

#### Toxicity

All polypropylene components meet the specifications for biological safety per USP Class VI – 121°C for plastics.

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