

Pleated polyethersulfone (PES) membrane filter elements for clear and sterile filtration of liquids with the lowest possible differential pressure.

Donaldson® PF-PES membrane filter elements are constructed with hydrophilic polyethersulfone membranes and all polypropylene components. Donaldson's PES exhibits both enhanced throughput and reliable particle retention for superior performance in many applications. PF-PES filter elements are compatible with a broad range of chemicals and pH extremes. The low protein binding characteristics of polyethersulfone membranes ensure that PF-PES filter elements are suitable for a variety of beverage, chemical and pharmaceutical applications.

Constructed using thermal welding techniques, PF-PES filter elements do not contain any adhesives or additives and individual integrity testing assures that PF-PES filter elements meet the exacting performance requirements of our customers.



PF-PES

APPLICATIONS

PF-PES filter elements are designed and developed for the following industries and applications:

- Process water
- Inks and dyes
- Pharmaceutical preparations
- Acids, bases & oxidants
- Serums and tissue culture media

FEATURES	BENEFITS
Polypropylene Cage & PES Membrane Construction	Resistance to a wide range of chemical solutions.
Biologically Inert and non-toxic materials	Meets FDA requirements for food contact. Passes UPS Class VI biological tests for plastics.
Absolute particle retention from 0.2-0.6 µm	Precise particle retention at a rated level. 0.2 µm meets bacteria validation according to HIMA/ASTM standards.
Rugged Construction	The Donaldson PF-PES is able to withstand up to 100 steam sterilization cycles without loss of integrity.

DIMENSIONS & SPECIFICATIONS

MATERIALS		CFR TITLE	DIMENSIONS	
Filter Media	Hydrophilic Polyethersulfone Membrane	177.2240	Diameter	2.75 in.
Support Layers	Polypropylene Microfiber	177.1520	Length	10", 20", 30", 40"
Core and Cage	Polypropylene	177.1520	OPERATIONAL LIMITS	
End Caps & Adapters	Polypropylene	177.1520	Maximum forward differential pressure	60 psid (4.1 bar)
Gasket	EPDM (standard)	177.2600	Maximum reverse differential pressure	30 psid (2.1 bar)
			Maximum operating temperature	180°F (82°C) at 10 psid (0.7 bar) in water

INTEGRITY TESTING

Bubble Point Test	Minimum Bubble Point (bar / psi)
0.6 µm	18 psi
0.45 µm	32 psi
0.2 µm	44 psi

DIFFUSION TEST / FORWARD FLOW TEST

Filter Grade	Maximum Diffusion Values (ml / min)
0.6 µm	15 ml/min @ 10 psi
0.45 µm	25 ml/min @ 25 psi
0.2 µm	30 ml/min @ 35 psi

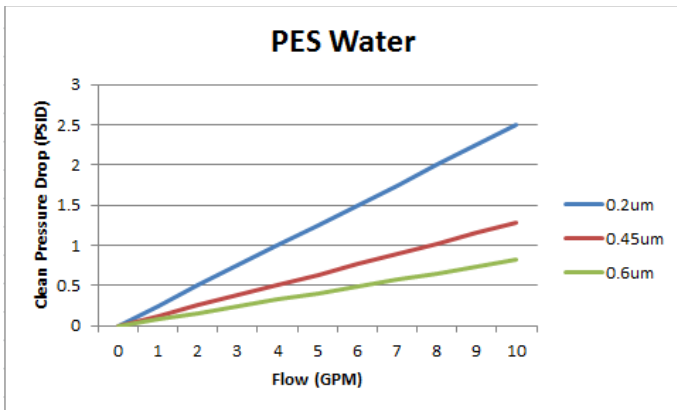
BACTERIA RETENTION RATES (ACCORDING TO HIMA CHALLENGE PER ASTM)

Filter Grade	Microorganism	LRV / cm ²
PF-PES, 0.6 µm	Saccharomyces cerevisiae	>7
	Oenococcus oeni	>7
PF-PES, 0.45 µm	Saccharomyces cerevisiae	>7
	Oenococcus oeni	>7
	Serratia Marecscens	>7
PF-PES, 0.2 µm	Saccharomyces cerevisiae	>7
	Oenococcus oeni	>7
	Serratia Marecscens	>7
	Pseudomonas diminuta	>7

ABSOLUTE RETENTION RATE

0.2 µm, 0.45 µm, 0.6 µm

PF-PES Differential Pressure Per Ten Inch Equivalent (TIE) –Water



STERILIZATION

In-line sterilization with slow speed saturation steam: 250-257°F for 30 minutes, up to 100 cycles.

Autoclave: 260°F for 30-60 minutes.

PF-PES filter elements are capable of repeated sterilization cycles without loss of integrity.



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