MEDICAL

Supor® Membranes

220607.10OGL

Hydrophilic Polyethersulfone Membranes for General Filtration Applications

Polyethersulfone (PES) membranes for aqueous solutions provide removal of fine particles, bacteria, and fungi making it a versatile membrane for applications such as sample preparation, sterile filtration and infusion therapy. PES are inherently hydrophilic membranes that wet out quickly and completely resulting in fast filtration with superior flow rates and high throughputs. PES membranes are also extremely low protein binding minimizing the likelihood of target analyte binding. They are also compatible with EtO, gamma irradiation, and autoclave methods of sterilization.

Sample Preparation

The low protein binding nature of these polyethersulfone membranes make them well suited for biological sample preparation. Available in a variety of pore sizes, the membranes can be used for coarse particulate removal in prefiltration applications or as a fine final filter for clarification. An excellent choice for bead-based, multi-plexed assays, the PES membrane yields high microsphere recovery and reduces the incidence of false positives in serological assays.

Sterile Filtration

Available in 0.1 and 0.2 µm pore sizes, these polyethersulfone membrane grades provide sterilization of buffers, culture media, additives, and pharmaceutical filtration. If mycoplasma contamination is a concern, the 0.1 µm PES membrane provides assurance that critical samples will not be contaminated.

Healthcare

For infusion therapy, the inherent hydrophilicity of the membrane allows fast priming of a finished device and provides a barrier to air passing through the wetted membrane. While wetting out quickly, PES membrane provides high throughput over time extending the life of the finished product. The membrane has a uniform pore structure for application requirements of sterile fluids and particulate retention. Our polyethersulfone membranes also comply with United States Pharmacopeia (USP) Biological Reactivity Test *In Vivo* <88> for biosafety, cytotoxicity, and hemolysis testing.

Microbial Analysis

Available in a modified black format, these PES membrane grades provide a contrasting membrane for microbiological and particulate analysis. The dark background provides excellent contrast for counting opaque colonies in labs and monitoring light-colored particulate in process fluids. Black PES membrane is an excellent medium for the isolation and enumeration of yeast or mold colonies.

Applications

- General/sterile filtration
- Bead-based assays
- Infusion therapy
- Pharmaceutical filtration
- Bacterial isolation/ enumeration

Sealing

- Mechanical
- Heat
- Ultrasonic
- RF welding
- Insert molding

Product Information

Specification

Hydrophilic Polyethersulfone

Typical Membrane Characteristics / Typical Performance Characteristics

Base Material	Pore Size (µm)	Thickness		Water Bubble Point		Water Flow (mL/min/ cm^2 @ 0.7 bar, 10 psi)
		mils	µm	psi	bar	
Unsupported polyethersulfone (Supor)	0.1	4.0-6.2	101.6-157.5	≥38.0*	≥2.62*	≥2.8
	0.2	5.1-6.4	129.5-162.6	≥53.0	≥3.65	≥19.3
	0.45	4.5-6.5	114.3-165.1	≥36.0	≥2.48	≥38.0
	0.8	4.5-6.5	114.3-165.1	≥15.0	≥1.03	≥80.0
	1.2	4.0-6.0	101.6-152.4	≥10.0	≥0.7	≥215.0
	5.0	3.5-7.0	88.9-177.8	≥2.0	≥0.14	≥423.0

* 60% IPA/40% water

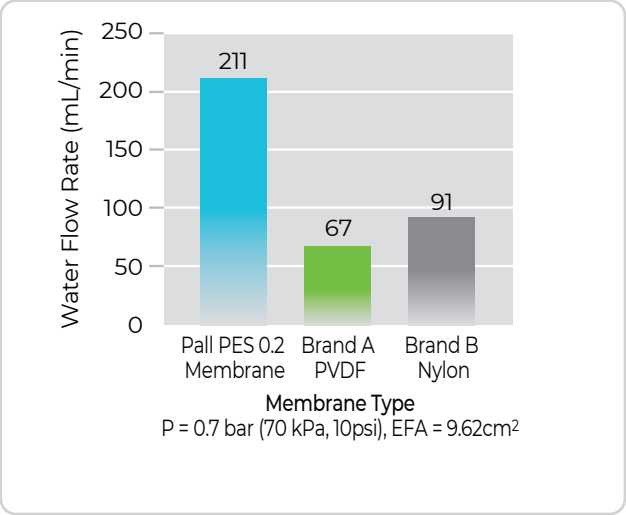
Black Polyethersulfone

Typical Membrane Characteristics / Typical Performance Characteristics

Base Material	Pore Size (µm)	Thickness		Water Bubble Point		Water Flow (mL/min /cm^2 @ 0.7 bar, 10 psi)	Yeast Recovery *(S.cerevisiae)*
		mils	µm	psi	bar		
Unsupported polyethersulfone (Supor)	0.45	3.3-6.9	83.8-175.3	≥23.5	≥1.62	≥34.5	≥85%
	0.8	4.1-7.6	104.1-193.0	≥13.9	≥0.96	≥102.8	

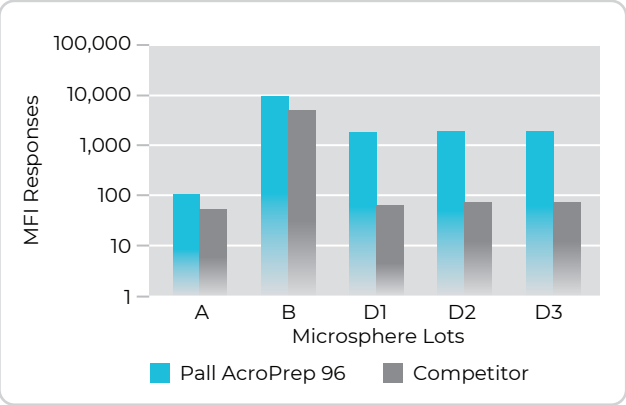
Performance

Membrane Water Flow Rate



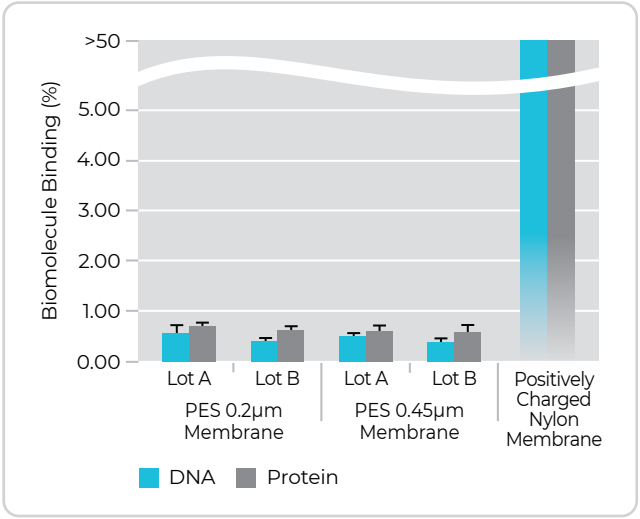
Pall polyethersulfone membrane flow rate outperforms nylon and PVDF membranes of the same pore size (0.2 µm).

AcroPrep™ 96 Filter Plates with 1.2 µm PES Reduce the Occurrence of False Positives in Multi-Plex Assays



The serological immunoassays were performed with multiple lots of xMAP microspheres in both the AcroPrep 96 with 1.2 µm PES membrane and Competitor filter plates. The results from these filter plates were read with one Luminex LX100 Instrument. The responses represent the reactivity toward microspheres. The results represent the average of four replicates for each of the three “positive” and one “negative” samples tested. In all lots of microspheres tested, the PES-based filter plates exhibited a marked reduction in non-specific reactivity than competitive plates.

Pall PES Membrane is Low in Biomolecule Binding



^{125}I-labelled BSA (1.6 µg) or ^{32}P-labelled DNA (500 ng) was diluted to 5 mL in PBS (BSA or Tris-EDTA (DNA) and filtered through a 13 mm disc of the indicated membrane. Filtration was carried out using a 10 mL syringe at a flow rate of 1.0 mL/minute. Binding was determined by comparing the amount of radioactivity remaining in the membrane (triplicate) to the activity of the starting material by counting the disc or solution in a scintillation counter. Positively-charged nylon membrane is designed for biomolecule binding and was used as a positive control.

Ordering Information

Custom roll, sheet, and disc sizes available upon request.
Please contact your local sales representative for additional information.

Part Number	Description	Pkg
S80610	Supor 100 membrane, 0.1 µm, 8” x 10” sheet	1/pkg
S80700	Supor 200 membrane, 0.2 µm, 8” x 10” sheet	1/pkg
S80710	Supor 450 membrane, 0.45 µm, 8” x 10” sheet	1/pkg
S80677	Supor 450 Black membrane, 0.45 µm, 8” x 10” sheet	1/pkg
S80720	Supor 800 membrane, 0.8 µm, 8” x 10” sheet	1/pkg
S80678	Supor 800 Black membrane, 0.8 µm, 8” x 10” sheet	1/pkg
S80730	Supor 1200 membrane, 1.2 µm, 8” x 10” sheet	1/pkg
S80497	Supor 5000 membrane, 5.0 µm, 8” x 10” sheet	1/pkg

Products in this datasheet may be covered by one or more patents including EP 1,056,540; US 6,878,343; US 7,135,117; and US 7,371,325.

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