

# Ultrasulfomem P-PF-PES

The membrane filter for the sterile filtration of aqueous solutions, of water and solvents.

## Product description:

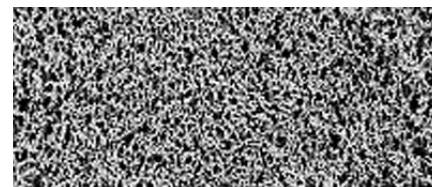
The Ultrasulfomem membrane filter is a polyethersulfone membrane in a polypropylene casing. The filter media polyethersulfone is inherently hydrophilic and distinguishes itself by having an asymmetricaly designed pore structure. The pore size steadily decreases towards the center of the medium.

## Features:

All components meet the FDA requirements for the contact with food in accordance with CFR (Code of Federal Regulations) Title 21. Ultrasulfomem has passed the USP XX Class VI tests for plastics. The filter element is manufactured in accordance with the cGMP requirements (current Good Manufacturer Practice), has no migration of filter media, is non-fiber releasing and is thermally welded without the use of binders or other chemical additives. The filter element is pre-rinsed with 18 Mohm · cm water. This leads to extremely low extractables.

**The Ultrasulfomem P-PF-PES –  
for clear and sterile filtration of  
liquids with the lowest possible  
differential pressure**

**SEM of the  
Ultrasulfomem membrane**



## Applications:

The Ultrasulfomem membrane is designed and developed for the following applications:

Pharmaceutical and biological applications

- Serum and blood-based products
- Antibiotics
- Injectables
- Diagnostic reagents

Ultrapure water

- Deionised water
- Sterile water
- Chemically treated water

Chemicals

- Acids and bases
- Alcohols
- Aldehydes
- Ketones
- Ester
- Chlorinated carbonised water
- Aminos, etc.

## Ultrasulfomem P-PF-PES

Features::	Benefits:
Durable polyethersulfone and polypropylene components	Wide durability range against chemicals with a pH range 1 to 14, permits use in broad range of fluids and applications
Absolute ratings of 0.04, 0.1, 0.2, 0.45, and 0.6 µm	Precise particle retention at rated level, meets bacterial validation acc. to HIMA standards
Highly porous asymmetric membrane	Higher flow rate, greater throughput, extended service life
Extremely high flow rates at low pressure	Allows faster processing times, smaller filtration systems, reduced operating costs
Permanently hydrophilic membrane	Inherently water solent in aqueous solutions without use of additives, surface active agents or post-treatments
Fully integrity testable in water	Assurance of product integrity and effectiveness in operation
Contains no binders, adhesives or other extraneous materials	High chemical stability, extremely low extractables, rapidly rinses in 18 Mohm · cm water
High thermal and hydrolytic stability	Reliable integrity under severe process conditions, withstands prolonged exposure to high temperature water without breakdown, shedding or loss of integrity
Biologically inert and non-toxic	Meets FDA requirements for food contact, passed USP Class VI biological tests for plastics
Highly passive to protein absorption	Low protein binding, minimizes valuable product adsorption, increase yield
100% integrity tested during manufacture	Assured product reliability and consistency

Materials:	
Membrane:	Polyethersulfone
Upstream support:	Polypropylene
Downstream support:	Polypropylene
Outer guard:	Polypropylene
Endcaps:	Polypropylene
O-Rings:	Silicone, Buna N, EPDM or Viton

Absolute retention rates:
0.04 µm, 0.1 µm, 0.2 µm, 0.45 µm, 0.6 µm

Filtration surface:
0.7 m <sup>2</sup> per 10" element (250 mm)

Bacterial retention:
HIMA challenge per ASTM
0.2 µm <i>Brevundimonas diminuta</i>
0.45 µm <i>Serratia marcescens</i>

Integrity testing wetting agent:	
Pore size	Bubble point
0.04 µm	≥ 8.0 bar
0.1 µm	≥ 5.5 bar
0.2 µm	≥ 3.0 bar
0.45 µm	≥ 2.2 bar
0.6 µm	≥ 1.2 bar

Sterilization:
In-line sterilization with slow speed saturated steam
121°C – 135°C
for 30–60 minutes
Autoclave
125°C for 30 minutes
Ultrasulfomem filter elements are capable of repeated sterilization cycles – without loss of integrity

Maximum differential pressure:	
Operating temperature [°C]	Differential pressure [bar]
35	5.5
65	4.0
80	2.0

Dimensions:
Diameter: 70 mm
Length: 250 mm, 500 mm, 750 mm or 1.000 mm (nominal)

Flow rate of a 10" P-PF-PES element – water (1 bar, 20°C)

