

Ultrateflomem P-PF-PT

The membrane filter for the filtration of aggressive solvents, chemicals and gases.

Product description:

The Ultrateflomem filter is a pleated PTFE membrane filter, which offers maximum assurance of filtration performance and durability range against chemicals in severe process conditions. The filter element is manufactured exclusively by using Teflon[®] and polypropylene. The retention rate extends from 0.1 µm to 1 µm (for gases down to 0.01 µm). The Teflon[®] filter media is inherently hydrophobic with a highly porous membrane structure. This ensures high flow rates and a high absorption of particles during the entire service life. The end caps and the Teflon[®] membrane are thermally welded without the use of binders. This results in an integral filter cartridge which provides maximum durability range against chemicals with minimal extractables.

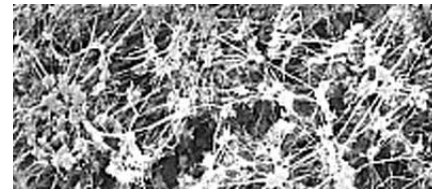
Features:

All components meet the FDA requirements for the contact with food in accordance with the CFR (Code of Federal Regulations) Title 21. Ultrateflomem filter elements have passed the toxicological tests according to USP XX Class VI for plastics. In particular, the requirements of the chemical, biological, cosmetic, electronic and the pharmaceutical industries are fulfilled. The Ultrateflomem filter is designed to remove particles, microorganisms and colloids from aggressive solvents, caustic liquids or gases. The membrane is manufactured in accordance with the cGMP requirements (current Good Manufacturer Practice), is non-fiber releasing and is thermally welded without the use of binders or other chemical additives.

The Ultrateflomem P-PF-PT – Teflon[®] membrane filter for the filtration of aggressive solvents, chemicals and gases



SEM of the Ultrateflomem membrane



Applications:

The Ultrateflomem Teflon[®] membrane is, among others, designed and developed for the following applications:

- Highly concentrated acids
- Bases
- Alcohols
- Chlorinated and fluorinated solvents
- Etchants
- Esters
- Ketones
- Photolithographic liquids

For the filtration of aqueous solutions, the Ultrateflomem membrane has to be prelubricated with a suitable liquid of low surface tension (e.g. IPA). Due to the inherently hydrophobic filter media, the Ultrateflomem membrane is also suitable for the following gases:

- Compressed air
- Fermentation air
- Technical gases
- Tank ventilation

Ultrateflomem P-PF-PT

Features:	Benefits:
Inert PTFE and polypropylene components	Extremely wide durability range against chemicals, permits use in broad range of fluids and applications
Absolute ratings of 0.1 µm, 0.2 µm, 0.45 µm and 1.0 µm	Precise particle retention at rated level, 0.2 and 0.45 µm meet bacterial validation acc. to HIMA/ASTM standards
Highly porous Teflon®* membrane	High flow rates, long service life, maximum chemical resistance with minimum extractables
Inherently hydrophobic	Natural barrier to water without the use of additives or surface modifying agents which can leach or wash out
Rugged thermal bonded construction	Reliable integrity under severe process conditions, withstands multiple sterilizations
Contains no binders or adhesives	Wide solvent compatibility, extremely low extractables
Fully integrity testable	Assurance of product integrity and effectiveness in operation
Biologically inert and non-toxic	Meets FDA requirements for food contact use, passes USP Class VI biological test for plastics
100% integrity tested by factory	Assured product reliability and consistency

Bacterial retention:
HIMA challenge per ASTM 0.2 µm Pseudomonas diminuta 0.45 µm Serratia marcescens

Integrity testing (wetting agent Isopropylalcohol [IPA]):	
Pore size	Bubble point
0.1 µm	≥ 1,25 bar
0.2 µm	≥ 1,0 bar
0.45 µm	≥ 0,5 bar
1.0 µm	not testable

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

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

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

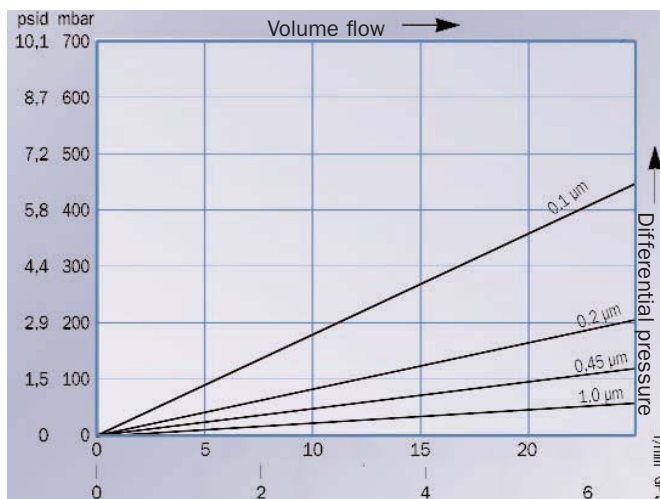
Absolut retention rates:
0.1 µm, 0.2 µm, 0.45 µm, 1 µm, for gases 0.01 µm to 0.1 µm

Filtration surface:
0,6 m ² per 10" element (250 mm)

Dimension:	
Diameter:	70 mm (2¾")
Length:	5", 10", 20", 30" or 40"; 125 mm, 250 mm, 500 mm, 750 mm or 1000 mm (nominal)

* Teflon® is a registered trademark of DuPont

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



Flow rate of a 10" P-PF-PT elements – air (1 bar, 20°C)

