

# Ultrateflomem™ PF-PT

*Membrane filter element for filtration of aggressive solvents, chemicals and gases*

The Donaldson® Ultrateflomem™ filter element is a pleated PTFE membrane filter that offers maximum assurance of filtration performance and durability 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. 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 element that provides maximum durability against chemicals with minimal extractables.

All components meet FDA requirements for 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 pharmaceutical industries are fulfilled. The filter element is designed to remove particles, micro-organisms and colloids from aggressive solvents, caustic liquids or gases. The membrane is manufactured in accordance with cGMP\* requirements, is non-fiber releasing, and is thermally welded without the use of binders or other chemical additives.

## Applications

The Donaldson Ultrateflomem PF-PT membrane filter element is designed and developed for use in the following industries and applications:

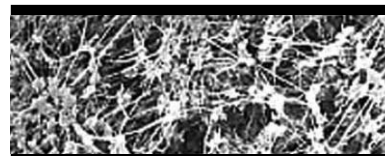
- Chemical
- Pharmaceutical
- Biotechnology
- Breweries
- Dairies
- Aseptic packaging
- Food
- Hospitals

For 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 PF-PT** Teflon membrane filter for filtration of aggressive solvents, chemicals and gases



**Ultrateflomem PF-PT** membrane as seen under the scanning electron microscope

\* Teflon is a registered trademark of E.I. DuPont de Nemours & Co., Inc.  
\*\* cGMP: current Good Manufacturing Practices

## 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 µm 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   |

| Materials           |                                   |
|---------------------|-----------------------------------|
| Filter Medium:      | Teflon®                           |
| Upstream Support:   | Polypropylene                     |
| Downstream Support: | Polypropylene                     |
| Outer Guard:        | Polypropylene                     |
| Endcaps:            | Polypropylene                     |
| O-Rings:            | Silicone, Buna N, EPDM or Viton®* |

\* Viton is a registered trademark  
DuPont Performance Elastomers LLC

| Absolute Retention Rates         |
|----------------------------------|
| 0.1 µm, 0.2 µm, 0.45 µm and 1 µm |

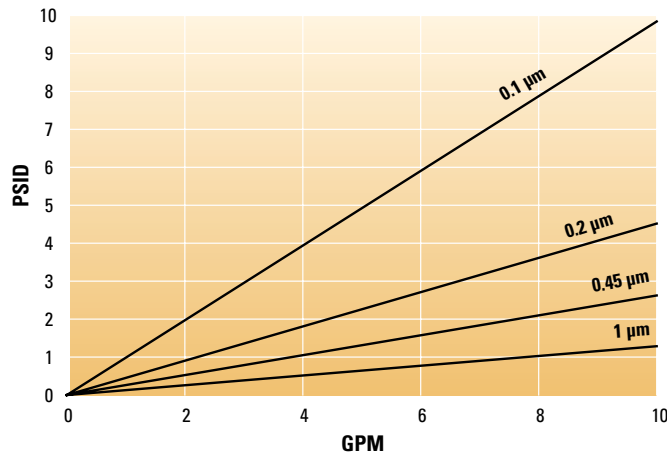
| Filtration Surface              |
|---------------------------------|
| 6.5 ft² for 10" element (10/30) |

| Maximum Differential Pressure |                              |
|-------------------------------|------------------------------|
| <b>Operating Temperature</b>  | <b>Differential Pressure</b> |
| 100°F                         | 80 psid                      |
| 150°F                         | 60 psid                      |
| 180°F                         | 30 psid                      |

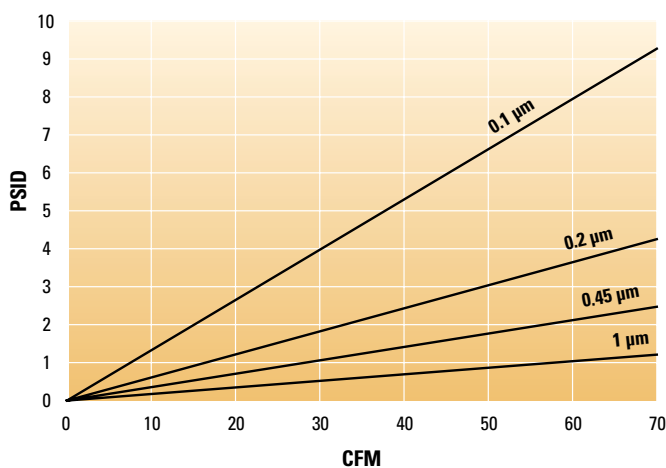
| Dimensions                       |
|----------------------------------|
| Diameter: 2.75"                  |
| Length: 5", 10", 20", 30" or 40" |

| Integrity Testing                    |              |
|--------------------------------------|--------------|
| Wetting agent Isopropylalcohol (IPA) |              |
| Pore size                            | Bubble point |
| 0.1 µm                               | ≥ 18 psig    |
| 0.2 µm                               | ≥ 14 psig    |
| 0.45 µm                              | ≥ 7 psig     |
| 1.0 µm                               | not testable |

### PF-PT Differential Pressure Per Ten Inch Equivalent (TIE)—Water



### PF-PT Differential Pressure Per Ten Inch Equivalent (TIE)—Air



| Sterilization  |  |
|--|--|
| <b>In-line sterilization with slow speed saturated steam</b>   |  |
| 250-275°F for 30-60 minutes  |  |
| <b>Autoclave</b>   |  |
| 260°F for 30-60 minutes  |  |
| Ultradeflomem filter elements are capable of repeated sterilization cycles without loss of integrity |  |

| Bacterial Retention         |
|-----------------------------|
| HIMA challenge per ASTM     |
| 0.2 µm Pseudomonas diminuta |
| 0.45 µm Serratia marcescens |



Donaldson Company, Inc.  
Process Filtration  
P.O. Box 1299  
Minneapolis, MN  
55440-1299 U.S.A.

Tel 800.543.3634 (USA)  
Tel 800.343.3639 (within Mexico)  
processfilters@donaldson.com  
www.donaldson.com

Information in this document is subject to change without notice.

© 2007 Donaldson Co., Inc.  
Printed in U.S.A. on recycled paper

Bulletin No. PRO-204 Ultradeflomem PF-PT 12-08