



Donaldson
FILTRATION SOLUTIONS

Process Filtration From Pure to Sterile

(P)-PF-PP

MAIN FEATURES & BENEFITS:

- Extremely durable polypropylene construction
- Absolute rating at 0,2 µm (HIMA/ASTM)
- High flow rates
- Biologically inert
- Approved for Food Contact Use
acc. to CFR Title 21 & 1935/2004/EC



INDUSTRIES:



- Chemical



- Petrochemical



- Pharmaceutical



- Food & Beverage



- Environmental

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Donaldson®
Ultrafilter

PRODUCT DESCRIPTION

The (P)-PF-PP filter element is an absolute rated, pleated high performance Polypropylene membrane filter. It provides the greatest assurance of filtration performance, stability and durability against chemicals even under severe process conditions. The (P)-PF-PP filter element offers a cost effective alternative to PTFE membrane filters with similar performance and durability range against chemicals.

The all Polypropylene filter medium is quite hydrophobic with a highly porous membrane structure. This ensures high flow rates and a high absorption of particles during the entire service life time. The end caps and the Polypropylene membrane are thermally welded without the use of binders. This results in an integral filter element which provides maximum durability range against chemicals with minimal extractables.

This extremely durable design maintains consistent porosity and impurity retention throughout its service life without shedding or unloading contaminations.

All components meet the EU and USA requirements for Food Contact Use in accordance with **CFR (Code of Federal Regulations) Title 21 and 1935/2004/EC**. (P)-PF-PP has passed the USP Class VI tests for plastics. The filter element is manufactured in accordance with the manufacturing requirements, has no migration of filter media, is non-fibre releasing and is thermally welded without the use of binders or other chemical additives.

The absolute rated (P)-PF-PP membrane filter is designed and developed for the following applications:

Purification of solvents and chemicals

- Acids
- Bases
- Complexing agents
- Alcohols, Aldehydes
- Etchants
- Chlorinated and fluorinated solvents
- Esters and Ketones
- Photolithographic Liquids

Filtration of air and gases

- Compressed Air
- Carbon Dioxide
- Fermentation Air
- Tank Ventilation
- Technical Gases

PRODUCT SPECIFICATIONS

Product Specifications

Absolute Retention Rate

- 0,2 µm

Filtration Surface

- 0,6 m² per 250 mm element (10")

Maximum Differential Pressure

Operating temperature [°C / °F]	Differential pressure [bar / psi]
38 / 100	5,5 / 80
66 / 150	4,1 / 60
82 / 180	2,1 / 30

Cumulative Steaming Time*

- 121°C (250° F), Saturated Steam: > 100 cycles (30 minutes)

**Figures are based on lab tests to evaluate steaming resistance. Filter elements need to be checked in actual use (see also section "Autoclaving & Sterilization"). Contact Donaldson for recommended Autoclaving/Steaming procedures.*

For the filtration of aqueous solutions the (P)-PF-PP membrane filter has to be pre-wetted with a suitable liquid of low surface tension (e.g. IPA).

MATERIAL COMPLIANCE EU

The Donaldson (P)-PF-PP filter element meets the guideline for Food Contact Use as given in **European Regulation (EC) Number 1935/2004**. All polymeric components (Polypropylene) meet the requirements of EU Directive 2002/72/EC relating to plastic materials and articles intended to come into contact with foodstuffs (excluding O-rings).

Migration tests have been carried out in simulant after flushing or in flow conditions.

For specific details on the O-rings, please contact your Donaldson Sales Engineer.

MATERIAL COMPLIANCE USA

All components of the (P)-PF-PP filter element are FDA listed for food contact use in the **Code of Federal Regulations (CFR), Title 21**

Filter Materials		CFR Title
Membrane:	Polypropylene	177.1520
Upstream Support:	Polypropylene	177.1520
Downstream Support:	Polypropylene	177.1520
Outer Guard:	Polypropylene	177.1520
Core:	Polypropylene	177.1520
End Caps:	Polypropylene	177.1520
O-Rings:	EPDM	177.2600
Alternatively:	Silicone	177.2600
	Buna N	177.2600
	PTFE over silicone	177.1550
	PTFE over viton	177.1550
Sealing Method:	Thermal Bonding	

All products have been inspected and released by Quality Assurance as having met the following requirements:

- All filters are fabricated without the use of binders, adhesives, additives or surface-active agents.
- All filter components based on plastics are non-toxic and are certified bio-safe in accordance with current USP Class VI Tests for Plastic.
- All sterile filters are integrity tested to verify compliance with established quality and design specifications and to assure consistent and reliable performance.
- Bacterial endotoxin levels in aqueous extracts of (P)-PF-PP filter elements are less than 0,5 EU/ml, as determined using the limulus amoebocyte lysate (LAL) test.

RETENTION RATES

Filter Grade	Microorganism	LRV / cm ²
(P)-PF-PP, 0,2 µm	Pseudomonas diminuta	> 7

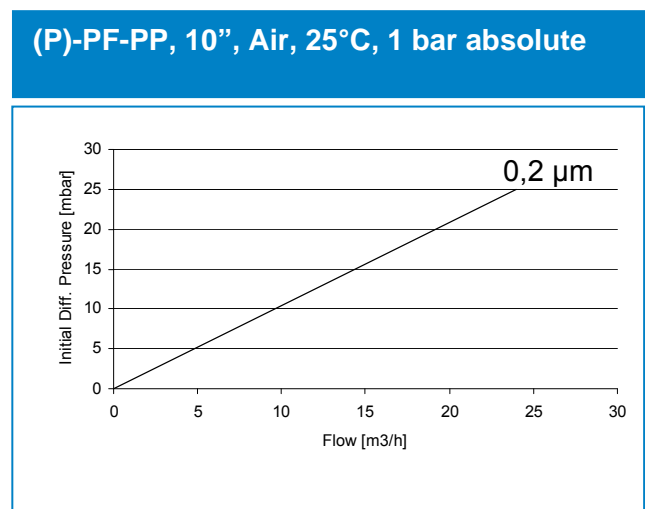
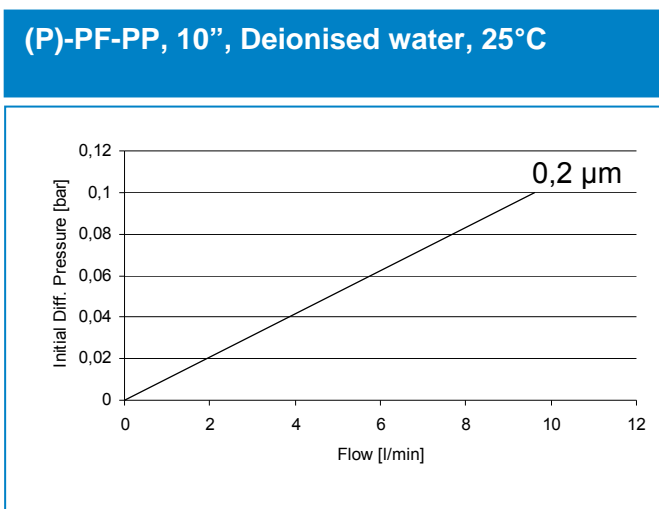
INTEGRITY TESTING

Bubble Point Test	
Filter Grade	Minimum Bubble Point [bar / psi]
(P)-PF-PP, 0,2 µm	0,6 bar / 9 psi

Diffusion Test / Forward Flow Test	
Filter Grade	Maximum Diffusion Values [ml / min]
(P)-PF-PP, 0,2 µm	4 ml/min @ 0,5 bar (8 psi)

Water Intrusion Test	
Filter Grade	Maximum Diffusion Values [ml / min]
(P)-PF-PP, 0,2 µm	0,14 ml/min per 10" element after 10 min @ 2,48 bar (36 psi)

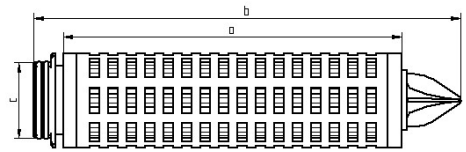
FLOW CHARACTERISTICS



AVAILABLE END CAP CONFIGURATIONS

Dimensions (CODE 7 connection):

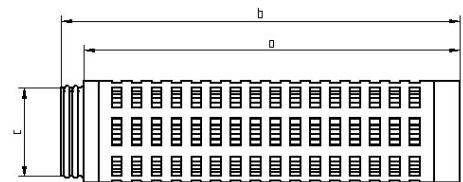
CODE 7						
Size	a		b		c	
	mm	inch	mm	inch	mm	inch
5"	125	4,92	190	7,48	56,5	2,22
10"	250	9,84	315	12,40	56,5	2,22
20"	500	19,68	565	22,24	56,5	2,22
30"	750	29,53	815	32,08	56,5	2,22
40"	1000	39,49	1065	41,93	56,5	2,22



CODE 7: 2 x 226 o-rings, bayonet 2 locking tabs, locating fin

Dimensions (uf-plug connection):

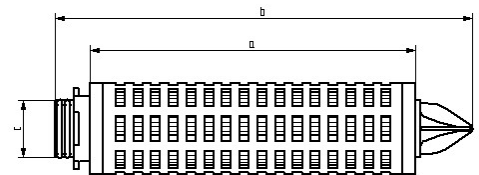
uf-plug connection						
Size	a		b		c	
	mm	inch	mm	inch	mm	inch
05/30	128	5,04	144	5,67	61	2,40
10/30	254	10	270	10,63	61	2,40
20/30	510	20	526	20,63	61	2,40
30/30	764	30	780	30,63	61	2,40



uf: plug connection with integrated reinforcement metal ring and flat end cap.

Dimensions (P9 connection):

CODE 9						
Size	a		b		c	
	mm	inch	mm	inch	mm	inch
5"	125	4,92	195	7,67	44	1,73
10"	250	9,84	320	12,59	44	1,73
20"	500	19,68	570	22,44	44	1,73
30"	750	29,53	820	32,28	44	1,73
40"	1000	39,37	1070	42,12	44	1,73



P9: 2 x 222 o-rings, bayonet 3 locking tabs, locating fin.

Other end cap configurations on request.

Technical alterations reserved 04/2009

- Integrity test of this element to be done by Water Intrusion Test.
- For information on test equipment or test services, please contact your Donaldson Sales Engineer and visit our website at www.donaldson.com!

(Rev01 – 07/10)

