



Donaldson
FILTRATION SOLUTIONS

Process Filtration From Pure to Sterile

PF-PES „L“

MAIN FEATURES & BENEFITS:

- Sterile rating of 0,2 µm
- High flow rate
- Highly resistant materials
- Extremely low adsorption of proteins
- High thermal stability, permanently hydrophilic
- Approved for Food Contact Use
acc. to CFR Title 21 & 1935/2004/EC



INDUSTRIES:



- Bottled Water



- Soft Drinks



- Food & Beverage



- Biotech



- Chemical

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Donaldson®
Ultrafilter

PRODUCT DESCRIPTION

The PF-PES „L“ filter element is a sterile rated, pleated high performance Polyethersulfone membrane filter. It provides the greatest assurance of filtration performance, stability and service life for sterile filtration and microbial stabilization.

The great performance of the PF-PES „L“ filter element is based on its state-of-the-art filtration media. The Polyethersulfone membrane is inherently hydrophilic and distinguishes itself by having an asymmetrically designed pore structure. The pore size steadily decreases towards the centre of the medium resulting in a highly porous structure. 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. The PF-PES „L“ 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 sterile rated PF-PES „L“ membrane filter is designed and developed for the following applications:

Clarification and sterilization of all kinds of water

- Bottled Water
- Mineral Water
- Spring Water
- Table Water
- Potable Water

High quality filtration for a variety of ultrapure water requirements

- Deionized Water
- Chemically treated Water
- High temperature Water
- Process Water
- Ingredient Water

Sterile filtration of beverages

- Soft Drinks

PRODUCT SPECIFICATIONS

Product Specifications

Sterile Retention Rates

- 0,2 µm

Filtration Surface

- 0,5 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 – 125°C (30 minutes) Saturated Steam (Forward Flow) more than 100 cycles

**Figures are based on lab tests to evaluate steaming resistance. Filter elements need to be checked in actual use. Contact Donaldson for recommended Autoclaving/Steaming procedures.*

MATERIAL COMPLIANCE EU

The Donaldson (P)-PF-PES „W“ filter element meets the guideline for Food Contact Use as given in European Regulation (EC) Number 1935/2004. All polymeric components (Polypropylene, Polyethersulfone) meet the requirements of EU Directive 2002/72/EC and subsequent amendments up to 2008/39/EC and Commission Regulation (EU) No 10/2011 relating to plastic materials and articles intended to come into contact with foodstuffs.

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

MATERIAL COMPLIANCE USA

All components of the PF-PES “L” filter element are FDA listed for food contact use in the Code of Federal Regulations (CFR), Title 21

Filter Materials	CFR Title
Membrane:	Polyethersulfone 177.2240
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 PF-PES „L“ filter cartridges are less than 0,5 EU/ml, as determined using the limulus amebocyte lysate (LAL) test.

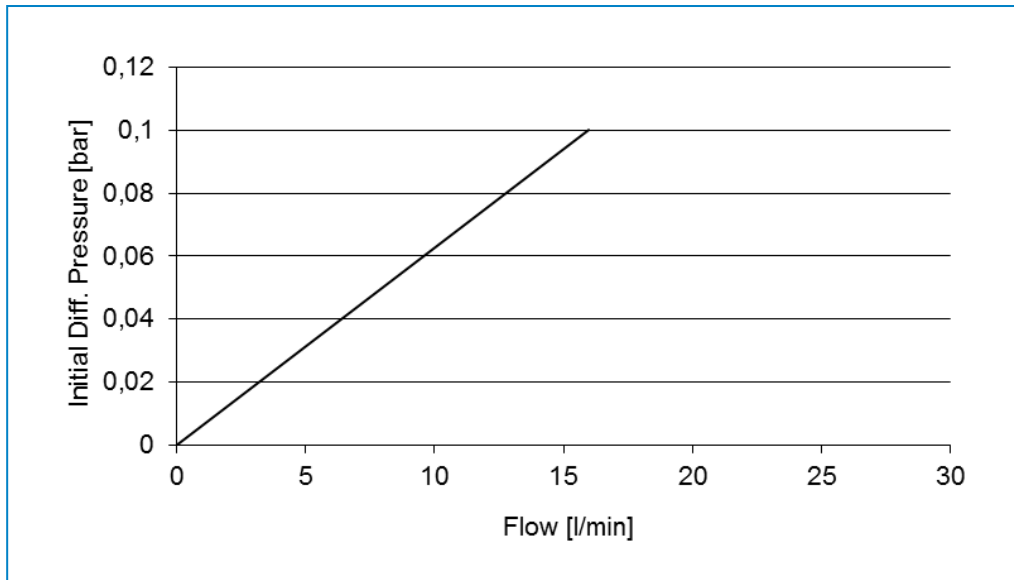
RETENTION RATES (ACCORDING TO HIMA CHALLENGE PER ASTM)

Filter Grade	Microorganism	LRV / cm ²
PF-PES „L“, 0,2 µm	<i>Saccharomyces cerevisiae</i>	> 7
	<i>Oenococcus oeni</i>	> 7
	<i>Serratia Marcescens</i>	> 7
	<i>Pseudomonas diminuta</i>	> 7

INTEGRITY TESTING

Bubble Point Test		Diffusion Test / Forward Flow Test	
Filter Grade	Minimum Bubble Point [bar / psi]	Filter Grade	Maximum Diffusion Values [ml / min]
0,2 µm	3,03 bar / 44 psi	0,2 µm	22 ml/min @ 2,4 bar (35 psi)

FLOW CHARACTERISTICS

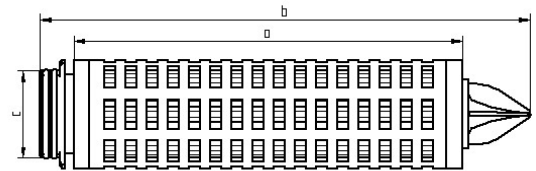


PF-PES „L“, 10”,
Deionised water,
25°C

AVAILABLE END CAP CONFIGURATIONS

Dimensions (CODE 7 connection):

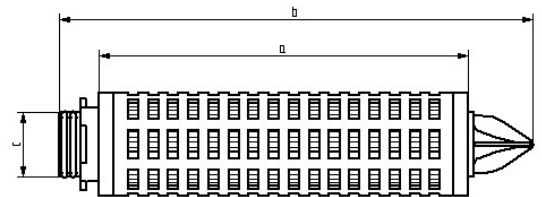
CODE 7						
Size	a		b		c	
	mm	inch	mm	inch	mm	Inch
20"*	500	19,68	565	22,24	56,5	2,22
30"	750	29,53	815	32,08	56,5	2,22



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

Dimensions (CODE 9 connection):

CODE 9						
Size	a		b		c	
	mm	inch	mm	inch	mm	Inch
20"*	500	19,68	570	22,44	44	1,73
30"*	750	29,53	820	32,28	44	1,73



CODE 9: 2 x 222 o-rings, bayonet 3 locking tabs, locating fin.

* Special Order conditions apply

Other end cap configurations on request.

Technical alterations reserved 04/2009

- Integrity test to be done by Bubble Point or Forward Flow Test.
- For information on test equipment or test services, please contact your Donaldson Sales Engineer and visit our website at www.donaldson.com!

(Rev01 – 02/12)