



Donaldson.  
FILTRATION SOLUTIONS

# Process Filtration From Pure to Sterile

(P)-SM N

## MAIN FEATURES & BENEFITS:

- High dirt holding capacity at low differential pressure and high flow rate
- Highly durable stainless steel design
- Regenerable by ultrasonication or backflushing
- For the filtration of air and liquids
- Approved for Food Contact Use acc. to CFR Title 21 & 1935/2004/EC



## INDUSTRIES:



- Chemical Industry



- Food & Beverage



- Paint



- Environmental Industry



- Pharmaceutical Industry

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Donaldson<sup>®</sup>  
Ultrafilter

## PRODUCT DESCRIPTION

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The (P)-SM N filter element consists of a regenerable, pleated filter matrix with stainless steel outer guard and end caps. The retention rate extends from 1 µm absolute up to 250 µm absolute in water.

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The (P)-SM N filter element offers an exceedingly economical pre- and final filtration, where the stainless steel filter matrix can be regenerated by ultrasonication or backflushing. This is especially important at higher particle loads.

The heavy-duty construction of the (P)-SM N filter is also suitable for high-viscosity liquids and can withstand a differential pressure of up to 5 bar (flow from outside to inside). In addition, the filter can be used for temperatures up to 150°C, with welded end caps up to 200°C.

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All components meet the USA/EU requirements for Food Contact Use in accordance with CFR (Code of Federal Regulations) Title 21 and EC/1935/2004. The filter element is manufactured in accordance with the manufacturing requirements, has no migration of filter media and is non-fibre releasing.

**The (P)-SM N stainless steel filter is designed and developed for the following applications:**

### Liquid Filtration

- Water filtration
- Chemicals
- Solvents
- Pharmaceutical industry
- Food and beverage
- Syrup
- Cosmetics
- Paints
- Salt- and Seawater
- Coolants

### Gas Filtration

- Compressed air
- Carbon dioxide
- Nitrogen
- Tank Ventilation
- Highly aggressive gases

### Steam Filtration

## PRODUCT SPECIFICATIONS

### Product Specifications

**Filtration Surface:**

- 0,22 m<sup>2</sup> per 250 mm element (10")
- For other element sizes see correction factor CF in section "Available end cap configurations"

**Temperature Range:**

- -50°C (-60°F) to 200°C (400°F)
- > 150°C (300°F) welded end caps only

**Maximum Differential Pressure:**
**(Flow Direction: Outside to Inside)**

- 5 bar (75 psid), independent of the system pressure or temperature

## RETENTION RATES

### Filter Rating (water)

	1 µm	5 µm	25 µm	50 µm	100 µm	250 µm
<b>Nominal (~ 98 %)</b>	0,6µm	4 µm	15 µm	40 µm	60 µm	200 µm
<b>Absolute (&gt; 99,98 %)</b>	1 µm	5 µm	25 µm	60 µm	100 µm	250 µm

### Retention Rates (Air, 20 °C, 90 Nm<sup>3</sup>/h, 10/30 Element)

Pore Size [µm]	98 % [µm]	>99,9 % [µm]	Thickness [mm]
1	0,1	< 1	0,37
5	1	< 5	0,35
25	15	25µm	0,17

## MATERIAL COMPLIANCE USA

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

Filter Materials	CFR Title
<b>Filter Matrix:</b>	Stainless Steel 1.4301 211.65
<b>End Caps:</b>	Stainless Steel 1.4301 211.65
<b>Bonding Materials:</b>	Silicone 177.2600
<b>O-Rings:</b>	EPDM 177.2600
<b>Alternatively:</b>	Silicone 177.2600
	Buna 177.2600
	EPR 177.2600
	PTFE over silicone 177.1550
	PTFE over viton 177.1550

**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.

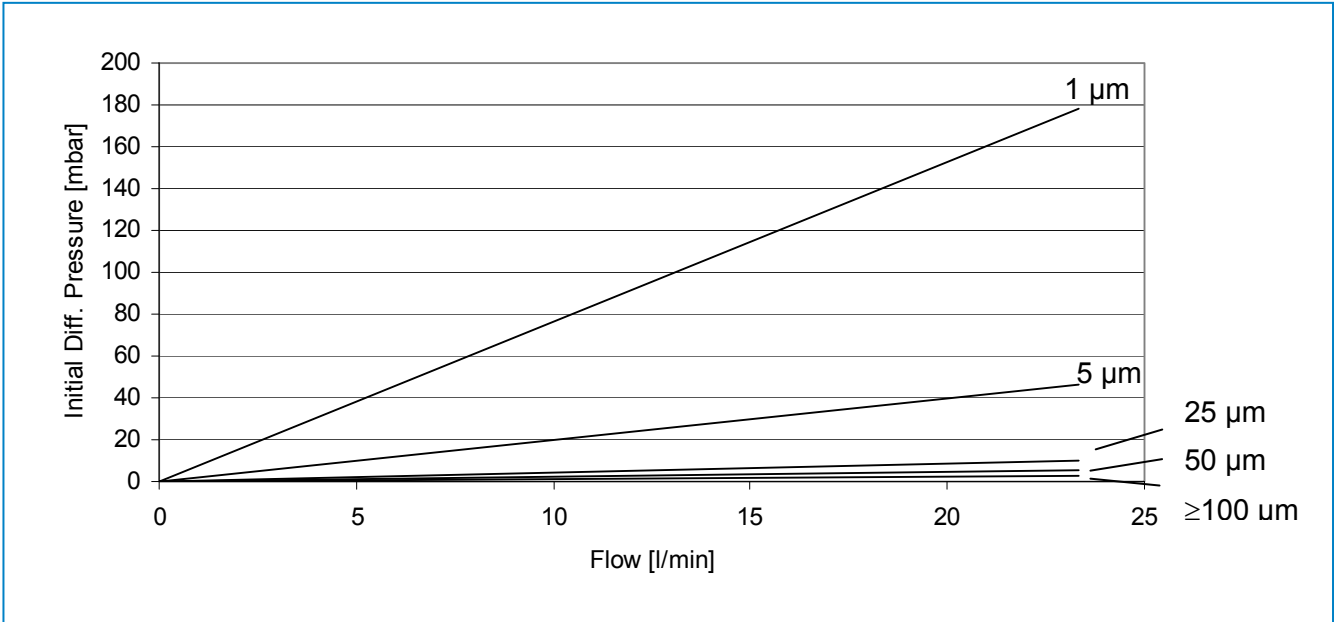
## MATERIAL COMPLIANCE EU

The Donaldson (P)-SM N filter element meets the guideline for direct Food Contact Use as given in European Regulation 1935/2004/EC.

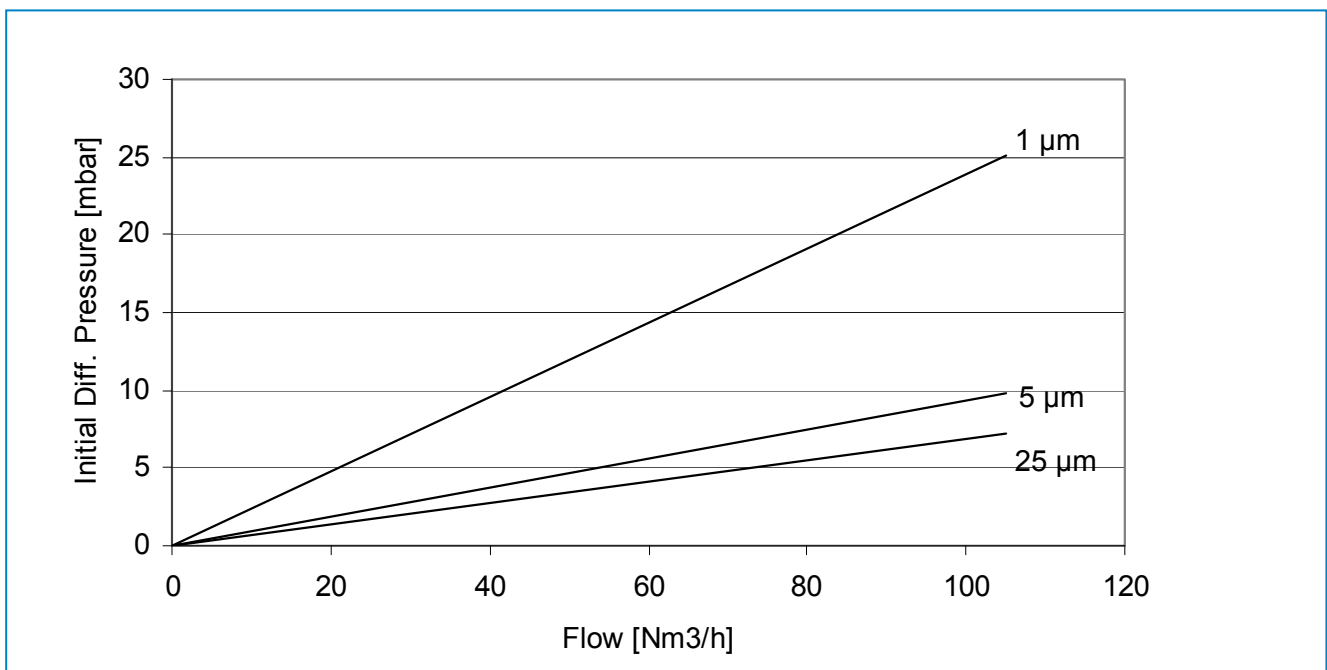
For specific details on the O-rings, please contact your Donaldson Sales Engineer.

FLOW CHARACTERISTICS

(P)-SM N, 10", Deionised water, 25°C



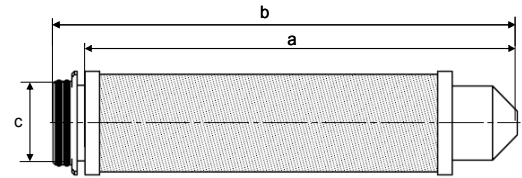
(P)-SM N, 10", air, 25°C, 1 bar absolute



AVAILABLE END CAP CONFIGURATIONS

Dimensions (CODE 7 connection):

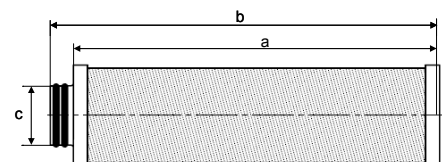
CODE 7						
Size	a		b		c	
	mm	inch	mm	inch	mm	inch
5"	128	5,04	142	5,59	56,5	22,2
10"	250	9,84	315	12,40	56,5	2,22
20"	500	19,68	585	22,24	56,5	2,22
30"	750	29,53	815	32,08	56,5	2,22



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

Dimensions (uf plug connection):

uf – plug Connection							
Size	a		b		C*		CF**
	mm	inch	mm	inch	mm	inch	
03/10	76	2,99	87	3,42	30	1,18	0,16
04/20	104	4,09	118	4,64	37	1,46	0,22
05/20	128	5,04	142	5,59	37	1,46	0,27
05/30	128	5,04	144	5,67	61	2,40	0,50
07/30	180	7,08	196	7,71	61	2,40	0,71
10/30	254	10	270	10,63	61	2,40	1,00
15/30	381	15	397	15,63	61	2,40	1,50
20/30	510	20	526	20,63	61	2,40	2,02
30/30	764	30	780	30,63	61	2,40	3,00
30/50	764	30	780	30,63	89	3,50	4,58



\* Plug- type connection with double-o-ring

\*\* Correction Factor Filtration Surface & Flow Rate

Other end cap configurations on request.

Technical alterations reserved 04/2009

- For information on integrity test equipment or integrity test services, please contact your Donaldson Sales Engineer and visit our website at [www.donaldson.com!](http://www.donaldson.com!)

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