

Microcap™ PNYPC

Pleated Nylon 6,6 Capsule
Filter. Positively charged
Nylon 6,6 Membrane



Microcap® PNYPC cartridge and capsule filters consist of a positively charged Nylon 6,6 membrane used for filtering aqueous and non-aqueous liquids that contain negatively charged contaminants.

Available in 0.10, 0.22, 0.45 and 0.65 μm , Microcap® PNYPC filters are validated for bacteria retention to provide reliable sterile filtration performance.

The positive charge removes negatively charged biological contaminants such as endotoxin, virus and other cell fragments.

Depending on level of contaminant and flow rate, Microcap® PNYPC filters will typically exhibit > 3-log removal of endotoxin. This combination of functionality makes the PNYPC filter an excellent choice for pharmaceutical and bioprocessing applications.

Typical Applications

Microcap® PNYPC filters are recommended for sterilising and endotoxin removal in:

- Process water
- Water for injection (WFI)

Maximum Operating Parameters

	Cartridges	Capsules
Liquid Operational Pressure	N/A	80 psi at 68°F (5.52 bard at 20°C)
Gases Operational Pressure	N/A	60 psi at 68°F (4.14 bar at 20°C)
Operating Temperature (water)	180°F at 30 psid (82°C at 2.07 bard)	110°F at 30 psid (43°C at 2.07 bard)
Forward Differential Pressure	80 psid at 68°F (5.52 bard at 20°C) (Liquid and Gas)	Liquid - 80 psid at 68°F (5.52 bard at 20°C) Gas - 60 psi at 68°F (4.14 bar at 20°C)
Reverse Differential Pressure	50 psid at 68°F (3.45 bard at 20°C)	50 psid at 68°F (3.45 bard at 20°C)
Recommended Changeout Pressure	35 psid (2.41 bard)	35 psid (2.41 bard)

Sanitisation and Sterilisation

Filtered Hot Water*	90°C (194°F), 30 minutes, multiple cycles, max 3 psid forward flow	N/A
Inline Steam*	275°F (135°C), 30 min, 25+ cycles	N/A
Autoclave*	250°F (121°C), 30 min, 25+ cycles	250°F (121°C), 30 min, 25+ cycles
Chemical Sanitization	Performed using industry standard concentrations of hydrogen peroxide, peracetic acid and other selected chemicals.	

* Cartridge Filters. For all elevated temperature procedures above, a stainless-steel support ring is required.

Filtration Area

	Capsules		Cartridges and Capsules			Cartridges
	2"	5"	10"	20"	30"	40"
Length	5.08cm	12.7cm	25.4cm	50.8cm	76.2cm	101.6cm
Area	1.2 ft ² 0.11m ²	3.3 ft ² 0.31m ²	7.0 ft ² 0.65m ²	14.0 ft ² 1.30m ²	21.0 ft ² 1.95m ²	28.0ft ² 2.60m ²

Integrity Testing

Pore Size	Diffusion Test Pressure *		Bubble Point Minimum *	
	PSIG	BARG	PSIG	BARG
µm				
0.10	48	3.30	**	**
0.22	35	2.41	50	3.5
0.45	20	1.37	25	1.7
0.65	15	1.03	19	1.3

Diffusion Specifications

Length	2"	5"	10"	20"	30"	40"
m/Lmin	≤ 2.1	≤ 6.3	≤ 15	≤ 30	≤ 45	≤ 60

* For water wetted membrane

** Test pressure exceeds operational limits of capsule filters. Use the Diffusion Test method.

Specifications

Materials of Manufacture

Product Code: 7018-5

Housing:	Polypropylene
Filtration media:	Positively Charged Nylon 6,6 Membrane with Polyester support
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding
O-Rings:	Buna, Viton® (or FKM), EPDM, Silicone, FEP Encap. Silicone, FEP Encap. Viton® (or FKM)

Validation

PNYPC filters are validated using test procedures that comply with ASTM F 838-15(ae1) protocols for the determination of bacterial retention in filters used for liquid filtration. The challenge level is a minimum of 107 organisms per cm² of filter media. Porvair Filtration filters have > 7-log removal when challenged with the organisms listed below (0.10µm and 0.22µm meet the FDA definition of sterilizing grade filters).

- 0.10µm: Brevundimonas diminuta
- 0.22µm: Brevundimonas diminuta
- 0.45µm: Serratia marcescens
- 0.65µm: Saccharomyces cerevisiae

Ordering Information



Micron Rating (µm)		Pre-sterilised		Length (in)		Inlet		Outlet		Side Vent Options		O-Ring (Bleed Valves Only)	
P10	0.10	N	Non-sterile	02	2	A	1/4" Female NPT	A	1/4" Female NPT	1	Luer Lock	S	Silicone
P22	0.22	S	Sterile	05	5	B	1/4" Male NPT	B	1/4" Male NPT	2	Bleed Valve	E	EP
P45	0.45	G	Gamma Stable	10	10	C	3/8" Female NPT	C	3/8" Female NPT			V	Viton
P65	0.65			20	20	D	1/2" Female NPT	D	1/2" Female NPT			B	Buna
				30	30	E	1/2" Male NPT	E	1/2" Male NPT			K	FFKM
						F	1" - 1 1/2" Sanitary	F	1" - 1 1/2" Sanitary				
						G	Hose Barb	G	Hose Barb				
						H	1 1/2" Sanitary with side vent						
						I	1/2" Single Stepped Barb with side vent						
						IB	1/2" Single Stepped Barb with filling bell and side vent						

