

Microcap™ PPTFE

PTFE Pleated Membrane Capsules



Microcap™ PPTFE capsules are manufactured for the critical needs of the pharmaceutical industry.

Made with highly hydrophobic polytetrafluoroethylene (PTFE) membrane, these capsules are used for the filtration of non-aqueous liquids, aggressive solvents, compressed gases and as vent filters. Each module is individually tested using the water intrusion method before it is released from manufacture.

The capsule media surface area, filter core design, pleat configuration and pleat packing density have been optimised to provide increased life resulting in lower filtration operating costs.

Typical Applications

- Solvent filtration
- Fermentation air
- Tank vent filters
- Process gas
- Compressed air filtration

Features and Benefits

- Optimised for maximum filter life.
- Guaranteed microbial ratings.
- Maximized bio-burden reduction.
- Low TOC levels.

Ordering Information

Product Code: 7018-3- xxx - x - xx - x - x

Micron Rating (µm)		Pre-sterilised		Length (in)		Inlet	Outlet
P10	0.10	N	Non-sterile	02	2	A 1/4" Female NPT	A 1/4" Female NPT
P22	0.22			05	5	B 1/4" Male NPT	B 1/4" Male NPT
P45	0.45			10	10	C 3/8" Female NPT	C 3/8" Female NPT
001	1.0			20	20	D 1/2" Female NPT	D 1/2" Female NPT
003	3.0			30	30	E 1/2" Male NPT	E 1/2" Male NPT
005	5.0					F 1" - 1 1/2" Sanitary	F 1" - 1 1/2" Sanitary
						G Hose Barb	G Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	PTFE membrane (absolute rated)
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles.
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	Microcap™ PPTFE capsules are not designed for steam-in-place (SIP).

Flow Rate

The following tables represent typical water flow at 69mbar (one psi) pressure differential across a single 2" capsule with 1.4 ft² (0.13 m²) of media with 1" sanitary ports. The liquid test fluid is water at ambient temperature. The gas test fluid is compressed air at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Air/Gas flow rates

µm rating	0.10	0.22	0.45	1.0	3.0	5.0
SCFM	3	7	10	13	15	17

Liquid flow rates

µm rating	0.10	0.22	0.45	1.0	3.0	5.0
GPM	0.23	0.35	0.85	1.3	1.7	2.0
LPM	0.87	1.32	3.22	4.92	6.44	7.57

Maximum Operating Parameters

Liquid operational pressure:	5.5bar (80psi) at 20°C (68°F)
Gases operational pressure:	4.1bar (60psi) at 20°C (68°F)
Operating temperature:	43°C (110°F) at 2.1bar (30psi) in water
Reverse differential pressure:	2.7bar (40psi) at 20°C (68°F)
Recommended changeout pressure:	2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
PTFE membrane	1.4ft² (0.13m²)	3.8ft² (0.35m²)	8.2ft² (0.76m²)	16.4ft² (1.52m²)	24.6ft² (2.29m²)

Integrity Test Specifications

Minimum Bubble Point for capsules wetted with 60% IPA/40% water solution.

Pore size (µm)	Bubble point
0.10	1.52bar (22psi)
0.22	1.24bar (18psi)
0.45	0.62bar (9psi)
1.0	0.41bar (6psi)
3.0	0.14bar (2psi)
5.0	0.07bar (1psi)

Validation

Microcap™ PPTFE capsules are validated using test procedures that comply with ASTM F838-15 protocols for the determination of bacterial retention in liquids. The challenge level is a minimum of 10⁷ organisms per cm² of filter media. Capsules have > 7-log removal when challenge with the organisms listed below.

0.10µm: *Brevundimonas diminuta*

0.22µm: *Brevundimonas diminuta*

0.45µm: *Serratia marcescens*

Validation Guide available upon request.