

# Microcap™ PPES

Pharmaceutical Grade Polyethersulfone Pleated Membrane Capsules



Microcap<sup>™</sup> PPES capsules are used for sterile filtration in the most critical pharmaceutical applications, such as: sterilising filtration of USP Water for Injection (WFI), diagnostic solutions, vaccines, ophthalmics, SVPs, LVPs and biological products.

Our hydrophilic, double-layered polyethersulfone membrane filters exhibit excellent flow rates with high throughput, thereby ensuring optimum protection.

Polyethersulfone (PES) is particularly suited for the filtration of products which contain elements that can adsorb to the media, such as preservatives and proteins. The lower binding characteristics of PES make it a good choice for the filtration of valuable protein solutions such as vaccines and biologicals as well as ophthalmic solutions.

Microcap<sup>™</sup> PPES capsule elements are 100% integrity tested during production.

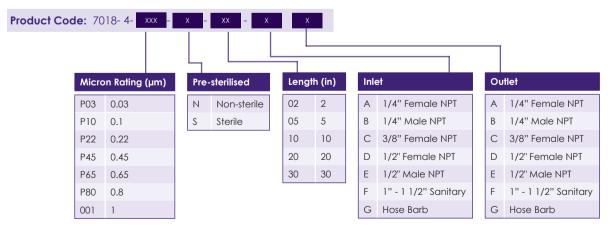
# **Ordering Information**

# **Typical Applications**

- Diagnostics
- Vaccines
- LVPs and SVPs
- Biologicals
- WFI water
- Ophthalmics

# **Features and Benefits**

- Validated for use in multiple pharmaceutical applications.
- Excellent flow rates with high throughput.
- Integrity testable.
- Designed for minimal leachables and extractables.
- Low adsorption of proteins and preservatives.
- USP Class VI approved.
- Uses FDA compliant materials.



Filters

Disposable Capsule

# **Specifications**

## **Materials of Manufacture**

## **Maximum Operating Parameters**

Materials of Manufacture		Liquid operational pressure:	5.5bar (80psi) at 20°C
Housing:	Polypropylene		(68°F)
Filtration media:	Double layered polyethersulfone	Gases operational pressure:	4.1bar (60psi) at 20°C (68°F)
	(PES) membrane	Operating temperature:	( )
Media support:	Polypropylene		(30psi) in water
End caps:	Polypropylene	Forward differential pressure:	3.4bar (50psi) at 20°C
Centre core:	Polypropylene		(68 °F)
Outer support cage:	Polypropylene	Reverse differential pressure:	2.7bar (40 psi) at 20°C
Sealing method:	Thermal bonding		(68 °F)
		Recommended changeout	
		pressure:	2.4bar (35psi)
End caps: Centre core: Outer support cage:	Polypropylene Polypropylene Polypropylene Polypropylene	Reverse differential pressure: Recommended changeout	3.4bar (50psi) at 20°C (68 °F) 2.7bar (40 psi) at 20°C (68 °F)

#### Sanitisation/Sterilisation

Autoclave:	120°C (250°F), 30 min, 5+ cycles.
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	PPES capsules are not to be used in steam.
Pre-Sterilised:	PPES capsules are offered in both non- and pre-sterilised forms.

### **Flow Rate**

The following table represents typical water flow at a 69mbar (one psi) pressure differential across a single 2 inch capsule with 1.0ft<sup>2</sup> (0.09m<sup>2</sup>) of media with 1/2" FNPT ports. The test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore size (µm)	0.03	0.10	0.22	0.45	0.65	0.8	1.0
GPM	0.16	0.26	0.46	0.71	0.86	0.91	0.97
LPM	0.61	0.98	1.74	2.69	3.26	3.44	3.67

#### **Filtration Area**

Media	Capsule length					
	2"	5"	10"	20"	30"	
PPES Membrane	1.0ft² (0.09m²)	3.0ft² (0.29m²)	6.2ft² (0.58m²)	12.4ft² (1.16m²)	18.6ft² (1.74m²)	

#### **Integrity Test Specifications - Diffusion**

Pore size	Test pressure	Max Diffusion Rate (cc/min - water wetted membrane)					
(µm)	(psi)	2"	5"	10"	20"	30"	
0.03	60	2.1	6.3	15	30	45	
0.10	48	2.1	6.3	15	30	45	
0.22	35	2.1	6.3	15	30	45	
0.45	20	2.1	6.3	15	30	45	
0.65	15	2.1	6.3	15	30	45	
0.8	12	2.1	6.3	15	30	45	
1.0	8	2.1	6.3	15	30	45	

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