

# Biofil™ 2 Plus

## Double Layer Polyethersulfone Membrane Cartridge Filters

**A Biofil™ 2 Plus microbial rated cartridge has been developed and manufactured for the filtration of liquids within pharmaceutical, biotechnology and other critical applications.**

Biofil™ 2 Plus utilises a naturally hydrophilic polyethersulfone (PES) membrane with a mirrored asymmetric pore structure. The cartridge's unique built in pre-filtration membrane layer provides longer life and higher throughput. When combined with quality all-polypropylene components and high integrity manufacturing techniques, the Biofil™ 2 Plus filter cartridge is ideally suited to the most demanding process conditions.

### Ordering Information

Product Code:		1	2	3	4	5	6	7	
BTP	Biofil™ 2 Plus	20	0.2µm	R	Rinsed	A	Code 3	A	Ethylene Propylene
		45	0.45µm	S	Standard	B	Code 7	B	Silicone
						C	Code 8	C	Viton®
						F	N SOE	D	Nitrile
						G	G DOE (short)	E	FEP Encap. Viton®
						H	G SOE	G	FEP Encap. Silicone
						J	216 (218), fin	J	DOE PTFE
						K	Code 2		
						L	223, fin (no lugs)		
						M	DOE		
						S	Code 28, fin (3 lugs)		
						U	224, fin		
						V	226, fin		
						W	F20 +Code 7 (SS Core)		
						X	F20 +Code 2 (SS Core)		
						Y	BS832, flat		
						Z	F20 +Code Y (SS Core)		



Quality and consistency of product are assured by the quality control and manufacturing procedures which are in place throughout all stages of manufacture. Biofil™ 2 Plus membrane cartridges are 100% integrity tested during manufacture by the forward flow diffusion test method.

### Typical Applications

- Biopharmaceuticals
- Fermentation
- Ophthalmic solutions
- APIs
- LVPs
- Beverages
- Pure water supply

## Features and Benefits

- Guaranteed microbial ratings
- Low protein binding
- Will not hydrolyse
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

## Specifications

### Materials of Manufacture

Pre-filter membrane:	Polyethersulfone
Final membrane:	Polyethersulfone
Membrane support:	Polypropylene
Irrigation mesh (support):	Polypropylene
Drainage layer:	Polypropylene
Inner core:	Polypropylene
Outer support:	Polypropylene
End fittings:	Polypropylene
Support ring:	Stainless steel

### Cartridge Dimensions (Nominal)

Effective Filtration Area:	0.48m <sup>2</sup> (5.2ft <sup>2</sup> ) (per 10" module)
Diameter:	70mm (2.8")
Length:	1 module: 254mm (10") 2 modules: 508mm (20") 3 modules: 762mm (30") 4 modules: 1016mm (40")

Other size formats (including juniors) are available upon request.

### Cartridge Treatment

Standard:	Cleaned and flushed with pyrogen-free water
Rinsed:	Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

### Gaskets and O-Rings

FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

### Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0bar (87psi)
80°C (176°F):	4.0bar (58psi)
100°C (212°F):	3.0bar (44psi)
120°C (248°F):	2.0bar (29psi)

Reverse flow direction at:

20°C (68°F):	2.1bar (30psi)
80°C (176°F):	1.0bar (15psi)
100°C (212°F):	0.5bar (7psi)

### Operating Temperature

Maximum continuous: 85-90°C (185-194°F)

### Sterilisation

*In situ* steam 112 x 20 minute cycles at 125°C (257°F)  
Hot water 100 x 20 minute cycles at 85-90°C (185-194°F)

### Extractables

Minimum total extractables. Please refer to the Biofil™ 2 Plus Validation Guide.

### Integrity Testing

Each Biofil™ 2 Plus module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural details.

### Clean Water Flow Rates

- Typical clean water flow rate:  
A 254mm (10") Biofil™ 2 Plus single cartridge exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:  
For solutions with a viscosity of greater than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.

