



## Introduction

Microfiltrex Polyfil II is an absolute rated pleated polypropylene filter offering high dirt holding capacity while maintaining low differential pressures and high flow rates. Our Polyfil II filters continue the Microfiltrex tradition of developing high performance, quality assured, innovative filter products.

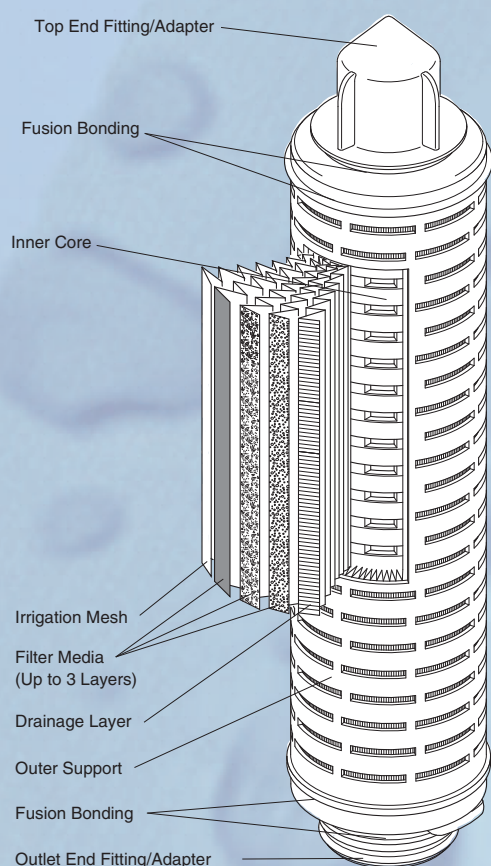


## Polyfil II

### Absolute Rated Pleated Polypropylene Cartridge Filters

#### Features and Benefits:

- Microfiltrex's extensive research and selection of the latest and most advanced polypropylene melt blown microfibre filter media results in improved performance leading to extended filter life at a given efficiency.
- A multi-layer graded pore structure provides prefiltration of the process fluid prior to the absolute rated final layer. The absolute rated layer combined with graded prefiltration often eliminates the need for further filters.
- Large surface area for low clean pressure drop.
- All cartridges are absolute rated, from installation, to Beta 5000 (99.98% efficient) via the recognised industry standard OSU-F2 (modified) test ensuring consistent, high quality filtration.
- Microfiltrex Polyfil II filters are among the most environmentally friendly filters on the market - all spent cartridges can be readily incinerated to trace ash.
- Microfiltrex is quality assessed to ISO 9001 covering all aspects of design, manufacture and quality control.
- All components are FDA approved (CFR21 No.s available).



## Cartridge Construction

- High quality robust all polypropylene construction allows for excellent chemical compatibility with a wide range of fluids.
- Hot spun polypropylene media providing a bonded matrix which minimises extractables and eliminates fibre migration.
- Inherent structural stability prevents 'channelling' and avoids the risk of particle unloading even under impulse conditions.
- Multi-layer combination of filter media, irrigation mesh and drainage material carefully pleated and thermally bonded maximises the media area and ensures an efficient flow throughout the cartridge.
- Fusion bonded construction ensures cartridge integrity. No surfactants or bonding agents are used, minimising extractables.
- The range is available with injection moulded outer supports facilitating steam sterilisation and reverse flowing (If this is not required, cartridges are available with a net polypropylene sleeve).

## The Range

- Absolute micron ratings have been increased: 0.5, 0.8, 1, 2, 3, 5, 7, 10, 15, 20, 30, 40, 60 and 90 microns absolute.
- Available in single or multiple module units of 5, 10, 20, 30 and 40 inches (non standard lengths available upon request).
- Complementary range of low cost net sleeve cartridges.
- End fittings available to suit most hardware installations without modification.

## Particle Retention Rating Table

Code	Pore Rating	Absolute Rating 99.98% Beta 5000 (microns)	Nominal Rating 99.90% Beta 1000 (microns)	Nominal Rating 99.00% Beta 100 (microns)	Nominal Rating 98.00% Beta 50 (microns)	Nominal Rating 90.00% Beta 10 (microns)
PP5	0.5	0.5	0.45	0.35	<0.3	-
PP8	0.8	0.8	0.6	0.4	0.35	0.3
P01	1	1	0.9	0.55	<0.5	-
P02	2	2	1.7	1.2	1.0	<0.5
P03	3	3	1.75	1.2	1.0	<0.5
P05	5	5	2.6	1.25	1.0	-
P07	7	7	5.0	2.0	-	-
P10	10	10	8.0	7.5	5.0	1.5
P15	15	15	11	9.0	7.0	2.0
P20	20	20	12.5	10	7.5	<0.5
P30	30	30	20	13	11	7.0
P40	40	40	30	20	15	9.0
P60	60	60	55	50	37	24
P90	90	90	85	60	45	45

## Specifications

### Materials of Manufacture

Filter Medium	Polypropylene
Irrigation Mesh	Polypropylene
Inner Core	Polypropylene
Outer Support/Net Sleeve	Polypropylene
End fittings	Polypropylene
Sealing	Fusion Bonding

### Cartridge Dimensions (Nominal)

Diameter:	70mm	(2.8")
	65mm	(2.6") OD'Net Sleeve' DOE
Length: 1 Module (short)	125mm	(5")
1 Module	250mm	(10")
2 Modules	510mm	(20")
3 Modules	860mm	(30")
4 Modules	1020mm	(40")

### Effective Filtration Area

From 0.39m<sup>2</sup> to 0.6m<sup>2</sup> per 250mm module (depending on pore rating and nominal cartridge diameter).

### Cartridge Treatment

Standard	Clean, without further treatment
Flushed	Flushed with pyrogen free water
Rinsed	Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

### Gaskets and O-rings

Ethylene Propylene Rubber, PTFE Encapsulated, Silicone, Viton, Nitrile or Polypropylene Felt.

### Maximum Differential Pressure

#### Normal Flow Direction at:

20°C (68°F)	6 bar (87psi)
	5 bar (73psi)(Net Sleeve Types)
80°C (176°F)	4 bar (57psi)
100°C (212°F)	3 bar (43psi)
120°C (248°F)	2 bar (29psi)
125°C (257°F)	1.5 bar (22psi)

#### Reverse Flow Direction (Excluding 'Net Sleeve' types) at:

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

### Operating Temperature

80°C (176°F) Maximum continuous.

## Sterilisation

Autoclave, Chemical, Multiple In-line Steam up to 136°C (277°F) (excluding 'Net Sleeve' types) Hot Water Sanitisation 80°C (176°F)

## Extractables

Minimal total extractables.

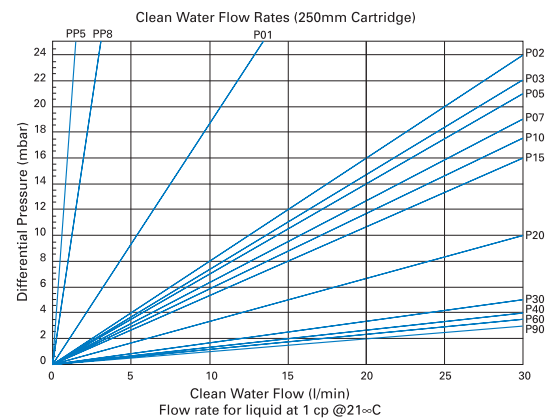
## Biological Safety

Conforms to USP Class VI for plastics. All polypropylene materials are FDA approved to 21 CFR 177 - 1520

## Test Conditions

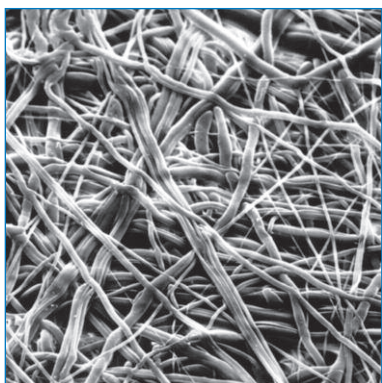
Typical Clean Water Flow Rate - Based on a 250mm (10") single module Microfiltrex housing exhibiting the differential pressure characteristics indicated below, for solutions with a viscosity of 1 centipoise.

Other Solutions - For solutions with a viscosity greater than 1 centipoise, multiply the indicated differential pressure by the fluid viscosity in centipoise.

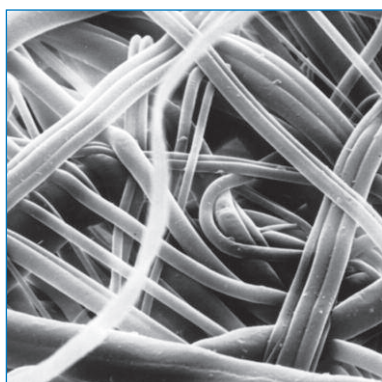




## Polypropylene Filter Media



*Polyfil II Polypropylene Media  
(x250)*



*Polyfil II Polypropylene Media  
(x1000)*

## Applications

The demand for increasingly high standards of filtration means that microfiltration performance is now necessary where commercial grade cartridges have hitherto been adequate. Suitable for the filtration of aqueous and many organic liquids, Polifil II cartridges can be used as prefilters or final filters in the following applications:

- **Process Water Systems** - the filtration of process water in pure water supply systems.
- **Microelectronics** - the preparation of process water and chemicals used in the manufacture of semiconductors and other electronic components.
- **Cosmetics** - the clarification and sterilisation of intermediates and final products.
- **Pharmaceuticals and Bioprocessing** - the batch preparation of intermediates used in the manufacture of pharmaceutical and bioprocessed products.
- **Foods and Beverages** - the clarification of foods and beverages including syrups, beers, wines and spirits.
- **Fine Chemicals** - the filtration of high grade chemicals including reagents, photographic emulsions, inks, paints and plating solutions.



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