

# Hall Pyke



**Membrane Filtration**

**Fluorofil™**

**The SMART choice for filtration**

## Fluorofil™

### ePTFE Membrane Cartridge Filters

Fluorofil™ cartridges are manufactured using a highly hydrophobic ePTFE membrane. The enhanced ePTFE membrane offers exceptionally high gas flow rates at low pressure differentials (see graph). Fluorofil™ cartridges are recommended for sterile gas filtration and venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Fluorofil™ filter cartridge particularly suitable for wet gas sterilising applications, such as fermenter air feed.

### Features and Benefits

- **Guaranteed microbial ratings in a liquid challenge**  
Fluorofil™ cartridges are validated for bacterial removal in liquids in accordance with PDA, HIMA guidelines and ASTM F838-05, with a log reduction value >7. This test is stringent in comparison to an airborne particulate challenge test.
- **Bacterial spores and viruses**  
The retention of bacterial spores and viruses carried in aerosols over extended time periods has been independently validated in tests carried out by the UK Health Protection Agency.
- **Flow ΔP characteristics**  
The unique characteristics of the ePTFE membrane, combined with the construction of the Fluorofil™ filter cartridge, results in exceptionally high gas flow rates at low pressure differentials. These features result in lower energy consumption and fewer filter cartridges per system.
- **Steam sterilisation**
- **Cartridge integrity and low TOC levels**
- **Solvents and aggressive chemicals**

### Materials of Manufacture

Filter membrane:	ePTFE	Inner core:	Polypropylene
Membrane support:	Polypropylene	Outer support:	Polypropylene
Irrigation mesh (support):	Polypropylene	End fittings:	Polypropylene
Drainage layer:	Polypropylene	Sealing:	Fusion bonding

### Maximum Differential Pressure

Normal flow direction at:	Reverse flow direction at:
20°C (68°F): 6.0bar (87lb/in2)	20°C (68°F): 2.1bar (30lb/in2)
80°C (176°F): 4.0bar (58lb/in2)	80°C (176°F): 1.0bar (15lb/in2)
100°C (212°F): 3.0bar (43lb/in2)	100°C (212°F): 0.5bar (7lb/in2)
120°C (248°F): 2.0bar (29lb/in2)	
125°C (257°F): 1.5bar (22lb/in2)	

### Gaskets and O-Rings

Ethylene Propylene, PTFE encapsulated, Silicone or Nitrile.



### Effective Filtration Area

Absolute Microbial Rating (in liquids)	Effective Filtration Area (each 254mm (10") module)
0.02, 0.1, 0.2 and 0.45µm	0.73m <sup>2</sup> (7.8ft <sup>2</sup> )

### Operating Temperature

Maximum continuous: 80°C (176°F)

### Sterilisation

In situ steam 100 x 20 minute cycles at 135°C (275°F) to 150 x 20 minute cycles at 125°C (257°F).

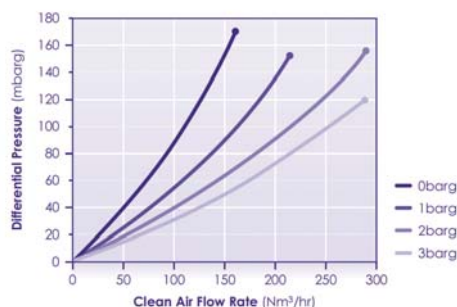
### Applications

- **Sterile process gases**  
The supply of sterile gas for critical applications in the pharmaceutical, biotechnology, food and beverage markets.
- **Sterile vents**  
The safe sterile venting of processing vessels in pharmaceutical, fermentation, and food and beverage processes.
- **Fine chemicals and solvents**
- **Photoresists and developers**  
The microfiltration of photoresists and developer solvents, susceptible to contamination and precipitation during manufacture, storage and processing.
- **Pure water supply systems**

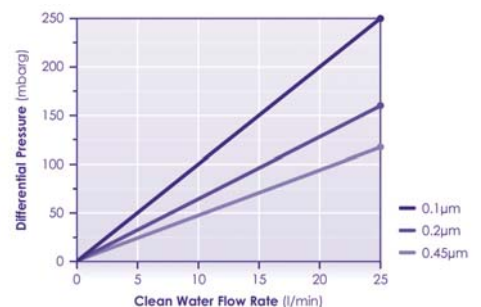
## Flow Characteristics

- **Typical clean air flow rate:**  
A 254mm (10") Fluorofil™ single cartridge exhibits the flow-ΔP characteristics indicated below.

### Gas Flow Rates



### Clean Water Flow Rates



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