



Emflon[®] PFR Filters

High Strength, Long Life
Sterilizing Filters for Air and Gas

Description

Emflon PFR filters have been developed from the successful **Emflon** filter range launched in 1981 and widely used as air and gas sterilizing filters in the pharmaceutical and biotechnology industries. The double layer Pall[®] PTFE membrane is inherently hydrophobic, chemically inert and designed specifically for removal of contaminating bacteria and viruses.

Emflon PFR filters meet the ever-increasing demand for air filters with greater strength, longer life and the ability to withstand the rigors of *in-situ* steaming in the forward or reverse direction.

Superior Performance

Emflon PFR filters provide high assurance of filter integrity and long life, even during continuous use in hot air up to 60 °C (140 °F), in vent applications up to 80 °C (176 °F) and during repeated steaming. The filters can withstand up to 1 bar differential pressure (forward direction) under steam sterilization conditions (125 °C (257 °F)).

This is combined with high flow rates and excellent de-wetting characteristics resulting in very economical filtration through the use of smaller installations and reduced energy costs. In addition, the filters can be tested *in-situ* by the Forward Flow integrity test or by a Water Intrusion test. Both tests are correlated to liquid bacterial challenge - the 'worst case' challenge.



Scientific Validation

Emflon PFR filters have been extensively and scientifically validated using the most advanced methods and the most sensitive equipment available. They have an absolute removal rating of 0.2 µm in liquids and 0.003 µm in gases and have been validated by:-

- *Brevundimonas (Pseudomonas) diminuta* liquid challenge at 10⁷/cm²
- *Brevundimonas (Pseudomonas) diminuta* aerosol challenge
- PP7 bacteriophage aerosol challenge
- Airborne sodium chloride aerosol challenge at 100 L/min flow (0.003 µm rated in gases)

Features and Benefits

- Comprehensive validation assures highest removal efficiency and highest safety margins
- High flow rates and low pressure drop allow use of small systems, reducing installation and running costs
- Robust construction ensures integrity and reliability
- Long steaming life and long service offer low cost filtration

Materials of Construction

Membrane	Double layer hydrophobic PTFE
Support and drainage layers	Polypropylene
End Cap, core and cage	Polypropylene
Code 2 and Code 7 adapter	Polypropylene with encapsulated stainless steel reinforcing ring

Maximum Differential Pressure

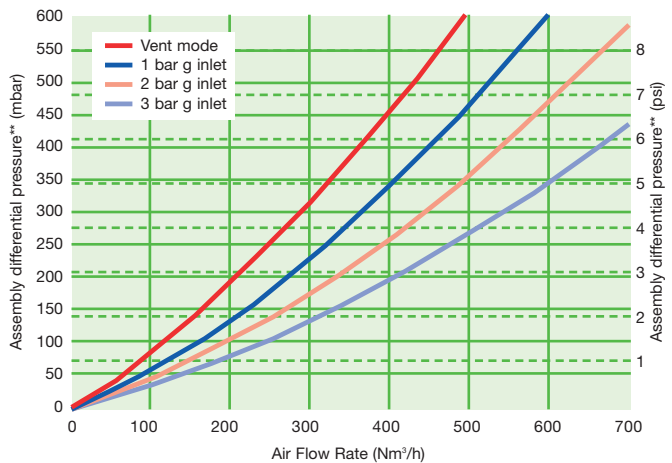
Temperature	Forward Direction	Reverse Direction
Up to 40 °C (104 °F)	5.3 bar (76.8 psi)	3.0 bar* (43.5 psi)
Up to 80 °C (176 °F)	4.1 bar (59.4 psi)	-
Steam up to 125 °C (257 °F)	1.0 bar (14.5 psi)	0.5 bar (7.25 psi)
Steam up to 142 °C (287 °F)	0.3 bar (4.35 psi)	0.2 bar (2.9 psi)

* Excursion conditions only

Service Life in Air

Temperature	Service Life
60 °C (140 °F) Pressurized Air	Typically 12 months
80 °C (176 °F) Vent Service	Typically 6 months

System Air Flow vs. Differential Pressure AB1 Size Cartridge



Please contact Pall for specific application sizing

** Pall Advanta® AGT11 series housing at 20 °C (68 °F)

Effective Surface Area

AB1PFR7PVH4 0.8 m² (8.6 ft²)

Cumulative Steam Life***

Up to 142 °C (287.6 °F) and 0.3 bar ΔP	AB05	AB 1,2,3
	100 hours	165 hours

***The steam life and service life data were determined by testing under controlled laboratory conditions up to the time indicated. Actual operating conditions may affect the filter's long term resistance to steam sterilization and hot air service. Filters should be qualified for each process application.

Ordering Information

Pall Part Number: A B

Code	Nominal Length
05	125 mm (5 in.)
1	254 mm (10 in.)
2	508 mm (20 in.)
3	762 mm (30 in.)

⁽¹⁾ This is a guide to the part number structure only. For availability of specific options, please contact Pall.

P F R

Code	Style
2 ⁽¹⁾	Double O-ring with bayonet lock and flat end
7 ⁽²⁾	Double O-ring with bayonet lock and finned end

⁽¹⁾ AB05 cartridges only
⁽²⁾ AB1, 2, 3 cartridges only

P V

Code	O-ring material
H4	Silicone
Other materials available	



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