



Emflon® II Sterile Air Membrane Cartridges



Specifications

Materials

- FDA-listed materials per 21-CFR
- Membranes: double layer PVDF
- Support/Drainage: Polypropylene, oxidation resistant
- Core/Cage/End Caps/Adapters: Polypropylene, oxidation resistant
- Code 7/2 adapters with encapsulated stainless steel reinforcing ring
- O-rings: Silicone¹

Removal Ratings

Air/Gases: <0.01 µm, particulate²
Liquids: 0.2 µm, sterilizing³

Configurations (AB Code7/2)⁴

- Single open ended
- Double 226 O-ring adapter
- Bayonet Lock
- Code 7: Finned end
- Code 2: Flat end

Dimensions (nominal)

- Lengths: 2 in. (50 mm), 5 in. (127 mm), 10 in. (254 mm), 20 in. (508 mm), 30 in. (762 mm), 40 in. (1016 mm)
- Diameter: 2.75 in. (70 mm)

Filter Areas (nominal)

- 6.7 ft² (0.62 m²) per 10 in (254 mm) element
- AB02: 1.7 ft² (0.16 m²)
- AB05: 3.4 ft² (0.32 m²)

Operating Conditions

- Max. Differential Pressure/Temp.:⁵ 60 psid (4.1 bar) to 140°F (60°C)
- Typical Service Life:⁶ >12 months at 166°F (60°C)

Autoclave/Steaming

- Cumulative Steaming Time:⁷ 165 hrs (1 hr cycles) to 284°F (140°C)
- Max. Steaming Differential Pressure : 5 psid (0.3 bard)

Technical References

See Appendix for titles.

[STRPUF-15](#)

[TR-870b](#)

[PDA/Virus](#)

Housing Cross Reference

AB Cartridge Style	Housing Link
ATLAB Series*	ATLAB 1, 5, 9, 15
Pall Advanta™ Series	T-Style In-Line
SLL Series	SLL
STL Series*	STL 3, 6 and 10
CLL Series	CLL

* Housings accept up to the number of cartridges shown.

Description

Pall Emflon II sterile air membrane cartridges are manufactured from a proprietary low pressure drop hydrophobic polyvinylidene fluoride (PVDF) membrane for use in sterile air/gas and vent service. Pleated with high area into sanitary single open ended (SOE) AB style cartridges, they are characterized by their exceptionally high flow rates, repeated steamability and long service life. Emflon II filters are fully validated with Forward Flow Test values correlated to liquid bacterial challenge retention.

- Inherently hydrophobic
- Double layer for added assurance
- 100% bacteria retentive in liquids
- 100% virus retentive in gases
- Repeatedly steamable *in situ*
- 100% integrity tested
- Water intrusion testable
- Individually serialized
- Melt-sealed construction
- Manufactured for use in conformance with cGMP
- ISO 9000 Certified Quality System
- Pharmaceutical "P" optimized
- Certificate of Test provided
- Validation Guide available

Specifications cont'd.

Integrity Test Values

Per 10 in. (254 mm) Cartridge:⁸

- Forward Flow (air test gas):
60:40 IPA:Water wet (v:v)
≤10 cc/min at 12 psi (826 mbar)
- Water Intrusion Testable

Quality/Bio-Safety

Biological Tests:

- Meets USP Biological Reactivity,
In Vivo, for Class VI-121°C plastics.
Effluent Quality Tests:⁹
- Meets Cleanliness per USP
Particulates in Injectables.
- Non-Fiber-Releasing per 21 CFR

- Non-Pyrogenic per USP
Bacterial Endotoxins (<0.25 EU/ml).
- Meets Oxidizables and pH per USP
Purified Water.
Steam Resistance: Lot samples
multi-cycle autoclave challenged.

¹ Other polymers available.

² By NaCl CNC particle analysis. Also retains 100% of *Brevundimonas diminuta* bacteria and bacteriophage aerosols.

³ Lot samples of assemblies retain >10⁷ cfu/cm² of *Brevundimonas diminuta* in liquid per mod. ASTM F838-83 and FDA guidelines.

⁴ Other adapter codes available.

⁵ In air/N₂ service or other compatible gases.

⁶ Emflon II filters can be operated at higher temperatures for shorter times. For intermittent vent service to 80°C, see also Emflon PFR filters. For continuous air flow above 60°C see Emflon CFR filters.

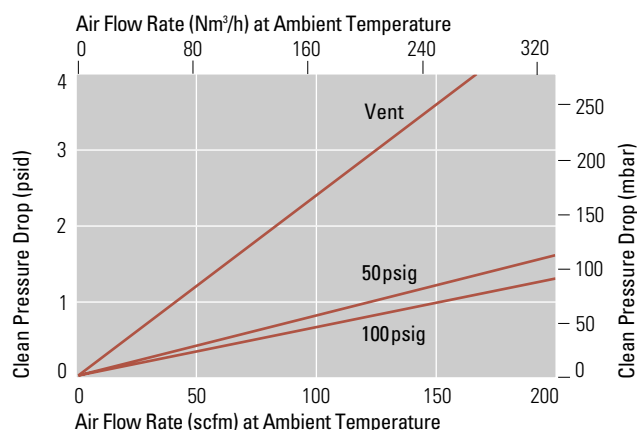
⁷ Lab tests to establish multi-cycle resistance. Filters should be qualified in actual use.

Contact Pall for recommended procedures.

⁸ Contact Pall for multi-element Forward Flow and Water Intrusion Test values.

⁹ Per lot sample soak or rinse-up flush aliquots.

Pressure Drop vs. Air Flow Rates¹⁰



¹⁰ Typical initial clean medium ΔP per 10 in. (254 mm) element, air at 68°F (20°C). For multi-element cartridges, divide pressure drop by number of 10 in. (254 mm) elements. Non-linear cartridge turbulence factors are incorporated into housing pressure drop values. For complete assembly pressure drop, add filter cartridge medium value to housing value at specified flow rate. For gases other than air or nitrogen, contact your local Pall distributor.

Note: Curve labels denote inlet pressures.

Part Numbers / Ordering Information

Part Number ¹¹	Nominal Length	AB Style Code ¹²
AB02V0022PVH4	2 in. (51 mm)	2
AB05V0022PVH4	5 in. (127 mm)	2
AB1V0027PVH4	10 in. (254 mm)	7
AB2V0027PVH4	20 in. (508 mm)	7
AB3V0027PVH4	30 in. (762 mm)	7
AB4V0027PVH4	40 in. (1016 mm)	7

¹¹ P at end of part number indicates optimized and qualified for Pharmaceutical use including encapsulated stainless steel reinforcing adapter ring for steaming *in situ*, 100% integrity testing and Certificate of Test provided. V indicates optimized for vent/air/gas service. H4 suffix=Silicone O-rings (standard). See Appendix for available alternate O-ring polymers and codes.

¹² AB02 and AB05 standard with Code 2 flat cap, other lengths Code 7 with finned cap. Both with double 226 O-rings. See Appendix for adapter dimensions and alternate codes.

Note: For sizing filters or other information, please contact your local Pall distributor.

Specifications and Availability: The information provided is a guide to the part number structure and possible options. Product availability may be subject to change without notice. All specifications are nominal. This literature was reviewed for accuracy at the time of publication. For current information on the products and test methodologies, consult your local Pall distributor.