**Emflon® II Sterile Air Membrane Cartridges**

**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**

**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)**
- Air/Gases: 6.7 ft² (0.62 m²)
- Liquids: 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)

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¹ Housings accept up to the number of cartridges shown.
² Housings accept the number of elements shown.
³ Housings accept up to the number of elements shown.
⁴ Housings accept the number of elements shown.
⁵ Housings accept the number of elements shown.
⁶ Housings accept the number of elements shown.
⁷ Housings accept the number of elements shown.

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**Technical References**

See Appendix for titles.
- STRPUF-15
- TR-870b
- PDA/Virus

**Housing Cross Reference**

<table>
<thead>
<tr>
<th>AB Cartridge Style</th>
<th>Housing Link</th>
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<tbody>
<tr>
<td>ATLAB Series *</td>
<td>ATLAB 1, 5, 9, 15</td>
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<tr>
<td>Pall Advanta™ Series</td>
<td>T-Style In-Line</td>
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<tr>
<td>SLL Series</td>
<td>SLL</td>
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<tr>
<td>STL Series *</td>
<td>STL 3, 6 and 10</td>
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<tr>
<td>CLL Series</td>
<td>CLL</td>
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</tbody>
</table>

* Housings accept up to the number of cartridges shown.
For information or to order, call:

info@lenntech.com
www.lenntech.com
Tel. +31-15-261.09.00
Fax. +31-15-261.62.89

Air/Gas Service Products
High Flow Cartridges

**Part Numbers / Ordering Information**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Nominal Length</th>
<th>AB Style Code</th>
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<tbody>
<tr>
<td>AB02V0022PVH4</td>
<td>2 in. (51 mm)</td>
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<tr>
<td>AB05V0022PVH4</td>
<td>5 in. (127 mm)</td>
<td>2</td>
</tr>
<tr>
<td>AB1V0027PVH4</td>
<td>10 in. (254 mm)</td>
<td>7</td>
</tr>
<tr>
<td>AB2V0027PVH4</td>
<td>20 in. (508 mm)</td>
<td>7</td>
</tr>
<tr>
<td>AB3V0027PVH4</td>
<td>30 in. (762 mm)</td>
<td>7</td>
</tr>
<tr>
<td>AB4V0027PVH4</td>
<td>40 in. (1016 mm)</td>
<td>7</td>
</tr>
</tbody>
</table>

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 >10^7 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.

**Specifications and Availability:**

- 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.

**Integrity Test Values**

Per 10 in. (254 mm) Cartridge:

- **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**

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

**Pressure Drop vs. Air Flow Rates**

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 pressure drop (psid) at 50:50 IPA:Water wet (v:v) at 12 psi (826 mbar) and 100% of *Brevundimonas diminuta* bacteria and bacteriophage aerosols.

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