

info@lennotech.com

www.lennotech.com

Tel. +31-15-261.09.00

Fax. +31-15-261.62.89



## AccuSep™ Inorganic Membranes

### Description

Pall AccuSep filter elements, which are available in a seamless, tubular format, are high performance, low cost inorganic microfiltration products. These sintered metal filter elements are produced by a proprietary process which creates a high void volume, strong and very uniform medium. This medium is relatively thin, resulting in a structure that is up to 3 times more permeable than that found in conventional pressed sintered metal tubes.

### Available Sizes

Standard Nominal Outer Diameters:

½ inch/12.7 mm and ¾ inch/19.05 mm

Standard Lengths: Up to 8 ft/2.43 m long

Medium Wall Thickness:

| Tube Outer Diameter<br>inches/mm | Filter Area<br>(Sq Ft)<br>per linear<br>foot | Filter Area<br>(Sq M)<br>per linear<br>meter | Nominal Wall<br>Thickness<br>inches/mm |
|----------------------------------|----------------------------------------------|----------------------------------------------|----------------------------------------|
| 0.47/11.8                        | 0.12                                         | 0.037                                        | 0.018/0.46                             |
| 0.72/18.2                        | 0.19                                         | 0.057                                        | 0.025/0.63                             |

### Configurations

Examples of standard configurations are:

| Configuration                                                                                   | Typical Use                                                                                   |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Single tube, double open ended                                                                  | Cross flow element<br>OEM product<br>Substrate for additional functional coatings             |
| Single tube, single open ended, tube flare connection on the end                                | Backwashable filter element                                                                   |
| Single or multi-tube assembly, single open ended, connected to blowback venturi on the open end | Blowback filter element<br><br>Retrofits existing porous metal or polymeric bag house filters |
| Multi-tube or larger assembly, double open ended, gasket seals                                  | Filter element                                                                                |
| Multi-tube or larger assembly, single open ended, threaded open end                             | Filter element                                                                                |

Pall will provide custom configurations to meet your requirements.



AccuSep™ Filter Element

### Available Metallurgy

316L Stainless Steel - standard  
304L Stainless Steel  
310SC Stainless Steel  
Hastelloy X  
Inconel 600

The filter element hardware is dictated by the operating conditions of the application.

## Operating Characteristics

### Maximum Differential Pressure (psid/bar D) at Temperature °F/°C Outside to Inside Flow

| Nominal Element Size | Micron Rating | Operating Temperature °F/°C |                   |                   |                   |
|----------------------|---------------|-----------------------------|-------------------|-------------------|-------------------|
|                      |               | 70°F/21.1°C                 | 250°F/121.1°C     | 500°F/260°C       | 750°F/398.9°C     |
| ¾ inch/18 mm         | 2 microns     | 90 psid/6.2 bar D           | 79 psid/5.4 bar D | 67 psid/4.6 bar D | 61 psid/4.2 bar D |
| ½ inch/12 mm         | 2 microns     | 98 psid/6.8 bar D           | 85 psid/5.9 bar D | 70 psid/4.8 bar D | 63 psid/4.3 bar D |
| ¾ inch/18 mm         | 5 microns     | 60 psid/4.1 bar D           | 50 psid/3.4 bar D | 43 psid/3.0 bar D | 38 psid/2.6 bar D |
| ½ inch/12 mm         | 5 microns     | 82 psid/5.7 bar D           | 70 psid/4.8 bar D | 58 psid/4.0 bar D | 52 psid/3.6 bar D |

### Maximum Differential Pressure (psid/bar D) at Temperature °F/°C Inside to Outside Flow

| Nominal Element Size | Micron Rating | Operating Temperature °F/°C |                     |                     |                     |
|----------------------|---------------|-----------------------------|---------------------|---------------------|---------------------|
|                      |               | 70°F/21.1°C                 | 250°F/121.1°C       | 500°F/260°C         | 750°F/398.9°C       |
| ¾ inch/18 mm         | 2 microns     | 330 psid/22.7 bar D         | 270 psid/18.6 bar D | 210 psid/14.5 bar D | 190 psid/13.1 bar D |
| ½ inch/12 mm         | 2 microns     | 360 psid/24.8 bar D         | 290 psid/20.0 bar D | 230 psid/15.8 bar D | 200 psid/13.8 bar D |
| ¾ inch/18 mm         | 5 microns     | 240 psid/16.5 bar D         | 200 psid/13.8 bar D | 160 psid/11.3 bar D | 140 psid/9.6 bar D  |
| ½ inch/12 mm         | 5 microns     | 260 psid/17.9 bar D         | 210 psid/14.5 bar D | 170 psid/11.7 bar D | 150 psid/10.3 bar D |

## Performance Data

| Filter Grade | Removal Ratings                                                     |                                       | Clean Pressure Drop                                                    |                         |                                                                                    |                         |
|--------------|---------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|-------------------------|
|              | Liquid Service                                                      | Gaseous Service                       | Liquid Service                                                         |                         | Gaseous Service                                                                    |                         |
|              | Rating in Microns at Which % Removal by Count Equals <sup>(1)</sup> | Rating Based Upon Particle Count Data | Aqueous Pressure Drop (psi/gpm/sq ft)/ (mbard/lpm/sq m) <sup>(2)</sup> |                         | Air Pressure Drop (psi/acfm/sq ft)/ (mbar/cubic meter/min/sq meter) <sup>(3)</sup> |                         |
|              | 99.98%                                                              | 99.98%                                | 0.5 inch/12 mm OD Tube                                                 | 0.75 inch/18 mm OD Tube | 0.5 inch/12 mm OD Tube                                                             | 0.75 inch/18 mm OD Tube |
| C020         | 2.0                                                                 | 0.3                                   | 0.62/1.05                                                              | 0.86/1.45               | 0.084/18.99                                                                        | 0.116/26.45             |
| C050         | 5.0                                                                 | 0.5                                   | 0.21/0.35                                                              | 0.29/0.49               | 0.023/5.20                                                                         | 0.033/7.23              |

(1) Liquid removal ratings are based upon a modified F2 test method and actual particle count data

(2) Pressure drop in PSID is obtained by multiplying value shown by the actual flow in gpm, viscosity of the fluid in centipoise and then dividing by the filter area deployed in sq ft.

(3) Pressure drop in PSID is obtained by multiplying value shown by the actual gaseous flow in acfm, multiplying by the viscosity of the gas in centipoise and then dividing by 0.018. Then divide this value by the filter area deployed in sq ft.

## Applications

AccuSep microfiltration tubular elements can be deployed as either retrofit products to fit into your existing equipment or as part of a new filtration system provided by Pall Corporation.

### Typical Applications Include

- Self Cleaning Jet Pulse or Reverse Flow Blowback Filters (Solids Removal From Gas)
- Self Cleaning Backwashable Filters (Solids Removal From Liquid)
- Cross Flow Microfiltration Elements • Spargers • High Temperature Gas Filter • Liquid Filter Cartridge For High Temperature or Aggressive Service Applications

## Features/Advantages/Benefits

| Features                                   | Advantages                                                                                                                            | Benefits                                                                                                                            |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Seamless construction                      | Higher effective surface area<br><br>Greater resistance to thermal and chemical stresses                                              | Lower filtration costs<br>Smaller filter systems required<br><br>Reliable and consistent product performance                        |
| Available in Up to 8 ft continuous lengths | Fewer seal points<br><br>Efficient manufacturing process                                                                              | Lower filtration costs                                                                                                              |
| Small diameter tubes                       | High packing (filter area per vessel volume) efficiency                                                                               | Smaller, lower cost filtration system                                                                                               |
| Proprietary inorganic medium               | Higher permeability than competitive ceramic or sintered metal products<br><br>Highly uniform pore size distribution crossflow filter | Longer filter life<br><br>Smaller filter systems required<br><br>Consistent operating flux when used as a backwashable, blowback or |

Besides AccuSep filter medium, Pall Corporation offers sintered metal products made from meshes, fibers and powders as well as engineered composites. With our manufacturing capability, we can create almost limitless combinations to meet your specific requirements.

To learn more about AccuSep filter medium, Pall's other sintered metal or ceramic filter products or the complete microfiltration systems we supply that utilize these inorganic filter media, please contact Pall Corporation or your local Pall distributor. Phone 516-484-5400 in New York State or 1-800-645-6532 outside New York.

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