Tekfil™ Polypropylene Depth Cartridge Filters

Tekfil™ is a high flow, graded depth filter with high contaminant capacity for long life. Constructed from FDA approved polypropylene with excellent performance characteristics, it is an economic choice for a wide range of applications.

Tekfil™ is available in a range of industrial standard lengths as either absolute or nominal rated cartridges. Also available in Nylon construction for solvent filtration.

Applications

Tekfil™ cartridges provide absolute and nominal filtration where the cost of filtration is critical. Suitable for the filtration of aqueous and organic liquids, Tekfil™ cartridges can be used as prefilters or final filters in the following applications:

- **Food and beverage**
  Process water, polishing lines and clarification.

- **Pharmaceuticals**
  Prefiltration and clarification.

- **Fine chemicals and solvents**
  Process streams.

- **Coatings**
  Coating lines, solvents, inks and dyes.

- **Photographic chemicals**
  Emulsions and process water.

- **Metal finishing electroplating**
  Paint and resin production.

- **Water treatment prior to reverse osmosis**
  Resin traps and potable water.

- **Cosmetics product filling**
  Water lines and batch filtration.
Features and Benefits

- **Tekfil™ cartridges**
  Extensive research and selection of the latest and most advanced polypropylene meltblown filter media, results in improved performance, leading to extended filter life at a given efficiency.

- **Graded depth media**
  The graded structure of the media provides prefiltration of the process fluid prior to the absolute rated final layer. This combination provides economy of use and a smaller process footprint.

- **High degree of chemical compatibility**
  Constructed entirely of polypropylene and/or nylon.

- **Absolute and nominal removal ratings**
  Tekfil™ cartridges are validated using recognised industry standard test methods.

- **Suitable for steam and hot water sanitisation**
  Tekfil™ cartridges are resistant to repeat steam sterilisation and hot water cycles.

- **Environmentally friendly**
  Tekfil™ filters are environmentally friendly, all spent cartridges can be readily incinerated to trace ash.

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**Cartridge Construction**

The high quality robust polypropylene and/or nylon construction of Tekfil™ cartridges, allows for excellent chemical compatibility with a wide range of fluids.

The meltblown polypropylene and nylon media provides a bonded matrix thus eliminating fibre migration.

The inherent structural stability of the Tekfil™ prevents ‘channelling’ and avoids the risk of particle unloading even under impulse conditions.

The Tekfil™ fusion bonded construction ensures cartridge integrity. No surfactants or bonding agents are used, minimising extractables.

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**Table 1**

<table>
<thead>
<tr>
<th>Code</th>
<th>Pore Rating (microns)</th>
<th>Absolute Rating 99.98% Beta 5000 (microns)</th>
<th>Nominal Rating 99.90% Beta 1000 (microns)</th>
<th>Nominal Rating 90.00% Beta 10 (microns)</th>
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</thead>
<tbody>
<tr>
<td>TA01</td>
<td>1</td>
<td>0.9</td>
<td>0.35</td>
<td>&lt;0.3</td>
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<tr>
<td>TA03</td>
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<td>1.8</td>
<td>1.2</td>
<td>1</td>
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Specifications

Materials of Manufacture
Filter media: Polypropylene/nylon
End fittings: Polypropylene

Cartridge Dimensions (Nominal)
Diameter: 63mm (2.5”)
Length: 254mm (10”), 508mm (20”), 762mm (30”), 1016mm (40”)

Gaskets and O-Rings
Ethylene Propylene, FEP encapsulated, Silicone, Viton®, Nitrile or Polypropylene felt available for non crush-fit end adapters.

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 3.5 bar (50psi)
60°C (140°F): 1.0 bar (15psi)
80°C (176°F): 0.5 bar (7psi)

Operating Temperature
Maximum continuous: 80°C (176°F)

Extractables
Minimum total extractables.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 254mm [10"] Tekfil™ single cartridge exhibits the
  flow-ΔP characteristics indicated below, for solutions
  with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity of greater than
  1 centipoise, multiply the indicated differential
  pressure by the viscosity in centipoise.

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**Table of Flow Rates**

<table>
<thead>
<tr>
<th>Differential Pressure (mbar)</th>
<th>Flow (l/min)</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>10</td>
<td>5</td>
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<td>20</td>
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<td>20</td>
</tr>
<tr>
<td>50</td>
<td>25</td>
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</tbody>
</table>

**Graph of Pressure Drop and Water Flow**

- TN01 (Nominal)
- TN05 (Nominal)
- TN10 (Nominal)
- TN20 (Nominal)

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**Table of Flow Rates**

<table>
<thead>
<tr>
<th>Pressure Drop (kg/cm²)</th>
<th>Water Flow (l/min)</th>
</tr>
</thead>
<tbody>
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<tr>
<td>0.4</td>
<td>0.5</td>
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</table>

**Graph of Pressure Drop and Water Flow**

- TA01 (Absolute)
- TA03 (Absolute)
- TA05 (Absolute)
- TA10 (Absolute)
- TA12 (Absolute)
- TA20 (Absolute)
- TAP5 (Absolute)

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Range
Suitable for use in Porvair filter housings and as direct replacements for existing cartridges, Tekfil™ cartridges can be supplied with end fittings to suit most hardware installations without modification. They are available in lengths of 10, 20, 30 and 40 inches, and in a choice of removal ratings from 1 to 100 micron.

Material Conformity and Validation
The bio-safety of all materials used in the manufacture of Tekfil™ cartridges is assured by FDA approval to Title 21CFR.177. Registered to ISO 9001, Porvair Filtration Group procedures are subject to high standards of quality assurance as demonstrated through its Drug Master File status.

Chemical Compatibility
The Tekfil™ materials of construction are compatible with a wide range of chemicals and solvents, however care must be taken to select the appropriate seal material. Advice on chemical compatibility is available. Since operating conditions vary considerably between applications, verification by the end user is recommended.

Filter Housings
Please contact a Porvair Filtration Group representative for further information on our range of filter housings.