Porvair Filtration Group

Filtration Catalogue
Product Range 2019

www.porvairfiltration.com
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The Company

Porvair is an international leader in the development and supply of materials and products for applications in filtration and separation.

Porvair manufactures in the UK, USA and China and has an extensive network of sales offices and distribution channels throughout the world. Our expertise is wide and varied, with products used in markets such as:

- Aerospace and Defence
- Food and Beverage
- Gasification
- Microelectronics
- Nuclear
- Pharmaceutical
- Porous Media and OEM Materials
- Printing
- Process
- Transportation
- Water

Our ongoing success is based on a dedication to technical excellence and superior customer service. Our future will be built on our investment in research and development to provide innovative new products that exceed expectations of our customers in solving the challenges that they face.

Aerospace and Defence

Porvair designs and manufactures specialist filtration equipment to meet the exceptional technical challenges of the aerospace and defence industry, for contamination control and condition monitoring in hydraulic, fuel, lubrication, coolant and air systems.

Our filters protect vital sub-systems in aircraft, helicopters, military vehicles, missiles and spacecraft such as flight controls, fuel management and inerting systems, thrust reversers, coolant systems, braking and steering, power generation and air intakes.

Food and Beverage

Porvair’s range of filters is installed to effectively remove particulates, yeast, mould spores and bacteria for use in applications, such as: wineries, breweries, cider, mineral water, soft drinks, food and dairy, culinary steam sterilisation and sanitisation, powder handling, sparging and dairy. Our products cover liquid, sterile air, compressed air and culinary steam filtration.

Our products are manufactured under strict quality process controls and are fully validated and technically supported by our qualified scientists and laboratory services. Our polymeric filter cartridges, manufactured from FDA-approved media under cleanroom conditions, include a wide range of end adaptors to enable easy retrofitting into new or existing competitor housings and all membrane filter cartridges are 100% integrity tested during production.

Gasification

Porvair is active in a number of areas concerning the generation and safeguarding of energy production. We are leading innovations in gasification technologies to enable the production of synthetic natural gas (syngas or biogas) as part of alternative clean energy techniques.
**Microelectronics**

Porvair offers a range of high purity gas filtration products to the semiconductor market, as well as to OEM suppliers in the microelectronics industry. Applications for this product range include gas safety management, exhaust venting systems, flow control, mass flow control, needle valve replacement, laminar flow diffusing, pressure snubbing and flame arresting.

**Nuclear**

Porvair has over 35 years’ experience in supplying high quality filtration solutions to the nuclear industry. Working across the fuel cycle, we offer solutions to the power generation, fuel production, reprocessing, decontamination, decommissioning and waste packaging sectors.

**Pharmaceutical**

The manufacturing of our high performance cost effective products is underpinned by our quality assurance programme, cGMP practices and cleanroom environment to ensure products meet the stringent requirements of the API, generics and veterinary medicine industries. Applications for these products include sterile filtration for parenteral drugs, sterile air for fermenter feeds, sterile vent filters, solvent extraction, vaccines, ophthalmic solutions, cell culture media and sera products.

**Porous Media and OEM Materials**

Porvair manufactures an extensive range of porous materials to provide optimum solutions for a wide variety of applications. These materials can be purchased for OEM products or integrated and packaged into finished products.

**Printing**

Inprinta® is the Inkjet sales division of Porvair Filtration Group. Inprinta® designs and manufactures a wide range of in-line and last chance filters to offer solutions for inkjet filtration throughout the body of the printer. These self-contained filter assemblies are provided for varied types of inkjet applications including CIJ coding, textile, ceramics and graphics.

**Process**

Porvair supplies the process industries with innovative and performance driven filtration equipment (elements, cartridges and vessels). We provide highly specialised filtration solutions for use throughout the manufacturing process, offering proven filtration solutions for the production of a vast range of chemicals including: nitric acid, maleic anhydride, ether, sulphuric acid, phosphoric acid, sodium chlorate, solvents as well as HDPE and LLDPE.

**Transportation**

Porvair’s experience and comprehensive product offerings cover everything from some of the world’s largest internal combustion engines to intricate inline hydraulic filters used for the protection of actuators and valves.

**Water**

Porvair supplies a range of diffused aeration products for the treatment of both industrial and municipal effluent. We also manufacture products to eliminate organic, chemical and other debris to meet stringent regulations for drinking water, as well as for the chemical, industrial, pharmaceutical and science markets.
Our Locations

Segensworth, Hampshire, UK

Porvair Filtration Group’s head office is located in Segensworth, UK. The following business units also operate out of Segensworth:

- Aerospace and Defence
- Energy
- Nuclear


Porvair Filtration Group Ltd., Segensworth Division
1 Concorde Close
Segensworth
Fareham
Hampshire
PO15 5RT
UK
Tel: +44 (0)1489 864330
Email: info@porvairfiltration.com

New Milton, Hampshire, UK

Our New Milton Division is home to our process departments, which include:

- Food and Beverage
- Pharmaceutical
- Polymer
- Printing
- Process


Porvair Filtration Group Ltd., New Milton Division
Queensway
Stem Lane
New Milton
Hampshire
BH25 5NN
UK
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

Ashland, Virginia, USA

Ashland Division in Virginia is our USA head office, as well as the USA manufacturer for many of the industries we are involved with.

This includes Aerospace and Defence, Biosciences and Scientific, Energy, Food and Beverage, Pharmaceutical, Porous Media and OEM Materials, Printing, Process, Nuclear and Water.


Porvair Filtration Group Inc., Ashland Division
301 Business Lane
Ashland, Virginia 23005
USA
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
Caribou, Maine, USA

Caribou, Maine, focuses on the manufacture of custom engineered porous sintered metal powder components and assemblies for use in a wide range of filtration and flow applications:

- Process and Analytical Instruments
- Porous Media and OEM Materials


Boise, Idaho, USA

Boise, Idaho, focuses on the manufacture of custom metal filtration components and assemblies with porous sintered metal and PTFE media for use in a range of applications within:

- Semiconductor, Solar/Photovoltaic, HBLED, and Wafer Manufacturing
- Flat Panel Display and Hard Disk Drive Manufacturing

Puorvair Filtration Group Inc., Boise Division
1226 Caldwell Boulevard
Nampa, Idaho 83651
USA
Tel: +1 208 461 2090
Email: infoUS@porvairfiltration.com

Xiaogan, Wuhan, China

Our Wuhan Division in China provides an operational base for marketing our extensive range of products within Asia.

Puorvair Filtration Group, Wuhan Division
Chengdong Area
Square Industrial Park, North District
Xiaogan Economic Development Zone
Xiaogan, 432000
China
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

Mumbai, Maharashtra, India

Our Mumbai Division in India provides an operational base for marketing our extensive range of products within India.

Puorvair Filtration India PVT. Ltd., Mumbai Division
Gangotri Glacier Annex, Kavesar
Opposite Vijay Nagar
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Email: infoIN@porvairfiltration.com
Porvair has a policy of continuous improvement in all areas of its business. Listening to customers’ present and future requirements is a vital part of our operations and a key part of driving change.

We understand that product development involves building multidisciplinary teams, both within our company, and in partnership with our customers. This continuous development of products and materials is vital to enable us to offer new and better solutions. We have implemented various methodologies to drive out waste and process variance across the company to achieve our goal of zero defects.

Our dedicated team of scientists, engineers, production and quality professionals work towards the best possible filtration solutions for our customers. We have a fully equipped test house and laboratory, and our experienced design engineers use the latest AutoCAD® technology, with 3D solid modelling, integrated with finite element analysis to give full structural assurance capability.

Quality is at the heart of every stage of our operation and a fundamental part of our culture. We are ISO9001 approved and hold many other accreditations for the industries we serve.

Research and Development

Development plays a fundamental part in our operations and has resulted in us developing a number of custom designed products based on our established porous polymeric materials (Vyon®) and sintered metal media (Sinterflo®), as well as developing a range of filters for fuel tank inerting applications.

We operate across many filtration and separation markets and there is significant interaction between each division in terms of product research and development. Our new product development team is drawn from scientists and engineers from across all divisions, encouraging new ideas and new solutions. The success of this approach has been in the interaction of chemists and engineers working together to find practical solutions to some extremely complex scientific challenges identified in the chosen market areas.

Manufacturing

Our filters, filtration systems and a range of porous materials are produced at our sites in the UK, USA and China. We manufacture for a wide variety of industrial, pharmaceutical and biomedical applications and supply filtration solutions for extreme conditions of temperature, pressure and corrosion for the aerospace and nuclear markets.

Our production capabilities include the complete element or cartridge construction, along with the build of entire tubeplate and vessel assemblies. We boast specialist fabrication skills and techniques in all of our manufacturing sites around the world and extensive ISO cleanroom facilities.
Engineering

From initial design concept through to manufacture and validation to in-service support, our highly experienced team of dedicated engineers work to develop the optimal filtration solution. Our team utilises the latest engineering tools of 3D AutoCAD®, Finite Element Stress Analysis, Computational Fluid Dynamics (CFD) and bespoke pressure vessel design software (PD5500, ASME VIII, EN13445). This is combined with our knowledge and strong ethos of working closely with our customers, ensuring filtration solutions that meet their market requirements.

Testing and Laboratory

Our dedicated test, development and laboratory services underpin our design and development activity; from filtration media and material characterisation, product verification testing to customer system simulation trials and in service performance evaluation. Our capabilities include filtration characterisation, environmental testing and analysis.

Technical Support Services

- **Validation services:**
  - Process specific validation
  - Filter compatibility
  - Retention studies
  - Microbial challenge tests
  - Endotoxin and particulate testing
  - Extractables testing
- **On-site services:**
  - Customer plant surveys
  - Process filter optimisation
  - Trouble-shooting
  - Pre-inspection review
- **Training:**
  - Integrity testing
  - SIP and CIP methods

Quality

Our policy is to provide products and services that consistently satisfy the commitments made to our customers by complying with their requirements, working together as a team and achieving continual improvement in our skills, systems, processes and performance.

We have a dedicated team of quality professionals with many years’ experience in definition, implementation and maintenance of quality management systems meeting multiple industry requirements. This extends across the workforce through a strong quality culture and a philosophy of ‘getting it right first time’ driven from the top of our organisation.

Our quality management systems are regularly audited internally and by customers and regulatory bodies. We hold ISO9001 at our manufacturing sites along with, EN 9100 and EASA Part 21 Subpart G at facilities in the UK and USA. We are NQA1 capable subject to specific project requirements.
Metallic Cartridges and Cleanable Filter Elements

Cleanable metallic filter cartridges and elements are used in the following industries:

- Aerospace and Defence
- Nuclear
- Food and Beverage
- Pharmaceutical
- Industrial Process
- Chemical Process
- Polymer

The robustness of design that is provided by a fully welded metallic element or cartridge is required to resist deterioration in harsh operating environments, including aggressive conditions, high temperatures and where operating differential pressures are high.
Manufactured from randomly laid metal fibres and sinter-bonded to form a uniform high porosity filter medium, Sinterflo® F demonstrates a significantly low pressure drop, high permeability and excellent dirt holding capacity.

Sintered metal fibre can be pleated to increase the available filtration area of a filter element, further increasing dirt holding capacity, minimising maintenance and maximising on-stream processing.

With the feasibility to formulate metal fibres to meet specific application requirements, combined with inherent durability, sintered metal fibre filters can be cleaned in situ without interrupting process flow, so providing the ultimate in process economics by reducing downtime to a minimum.

Typical Applications

- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration
  - Culinary steam
  - Process steam
- Pharmaceutical powder recovery
- Polymer melt

Features and Benefits

- Resistant to high temperatures and corrosive environments
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs
- Available in 316L as standard with other alloys such as Inconel® 601, Hastelloy® X, NiCrMo Alloy 59 and Fecralloy® on request
Specifications

Materials of Manufacture
316L stainless steel standard. Inconel®, Hastelloy®, NiCrMo Alloy 59 and Fecralloy® on request or by process selection. Additional alloys are available on request.

Element Dimensions*
Diameter: 66mm [2.6”] standard
Length:
- 05: 125mm [5”]
- 10: 250mm [10”]
- 20: 498mm [20”]
- 30: 745mm [30”]
- 40: 1012mm [40”]
* Other diameters and lengths available on request.

Effective Filtration Area
0.05m² (0.55ft²) per 250mm [10”] element

Gaskets and O-Rings*
EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.
* FDA approved seals are available.

Typical Maximum Differential Pressure* [all lengths]
Normal flow direction: 15bar [218psi]
Reverse flow direction: 3bar [44psi]
* Grade dependant.

Operating Temperature
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® F Stainless Steel Media Grades

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<th>Liquids (µm)*</th>
<th>Gases (µm)*</th>
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<td>(micron code)</td>
<td>[99.9% efficiency]</td>
<td>[99.9% efficiency]</td>
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<td>60 (0060)</td>
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* Single Pass Efficiency Test in accordance with ASTM795 ACFTD.

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Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Manufactured from randomly laid metal fibres and sinter-bonded to form a uniform high porosity filter medium, Sinterflo® F demonstrates a significantly low pressure drop, high permeability and excellent dirt holding capacity.

Pleated sintered metal fibre increases the available filtration area of a filter element, further increasing dirt holding capacity, so minimising maintenance and maximising on-stream processing.

With the feasibility to formulate metal fibres to meet specific application requirements combined with inherent durability, sintered metal fibre filters can be cleaned in situ without interrupting process flow. This will provide the ultimate in process economics by reducing downtime to a minimum.

**Typical Applications**
- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration
  - Culinary steam
  - Process steam
- Pharmaceutical powder recovery
- Polymer melt

**Features and Benefits**
- Resistant to high temperatures and corrosive environments
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs
- Pleatable structure, offering higher filtration area per cartridge
- Available in 316L as standard with other alloys such as Inconel® 601, Hastelloy® X, NiCrMo Alloy 59 and Fecralloy® on request
Specifications

Materials of Manufacture
316L stainless steel standard. Inconel®, Hastelloy®, NiCrMo Alloy 59 and Fecralloy® available on request or by process selection. Additional alloys are available on request.

Cartridge Dimensions*
Diameter: 66mm (2.6”) standard
Length: 05: 125mm (5”)
10: 250mm (10”)
20: 498mm (20”)
30: 745mm (30”)
40: 1012mm (40”)
* Other diameters and lengths available on request.

Effective Filtration Area
0.13m$^2$ (1.40ft$^2$) per 250mm (10”) cartridge

Gaskets and O-Rings*
EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.
* FDA approved seals are available.

Typical Maximum Differential Pressure* [all lengths]
Normal flow direction: 25bar (363psi)
Reverse flow direction: 3bar (44psi)
* Grade dependant.

Operating Temperature
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® F Stainless Steel Media Grades

<table>
<thead>
<tr>
<th>Micron Rating [µm] (micron code)</th>
<th>Liquids [µm]* (99.9% efficiency)</th>
<th>Gases [µm] (99.9% efficiency)</th>
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<td>60 (0060)</td>
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<td>16</td>
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</tbody>
</table>

* Single Pass Efficiency Test in accordance with ASTM5795 ACFTD.

Contact Information: China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Sinterflo® P
Cylindrical Sintered Metal Powder Filter Elements

Primarily produced from 316L grade powder; however, other stainless steel grades and powder alloys such as Inconel®, Hastelloy® and Monel® are available depending on the requirements of the operating conditions.

These materials offer resistance to most chemicals and can be used in temperatures up to 1000°C (1832°F).

Our isostatic pressing ensures greater media uniformity with no welds, leading to increased corrosion resistance.

Available in wall thickness of 1.6mm (0.07") and 3mm (0.12").

Typical Applications
• Catalyst recovery and retention
• Polymer melt
• Chemical production
• Steam filtration
  • Culinary steam
  • Process steam
• Liquids and liquid backwash

Features and Benefits
• Extremely robust construction
• Smooth surface finish preferable for backwash applications
• Self supporting construction eliminating the need for additional hardware
• Isostatic pressed, robust construction
• Broad range of fixed, uniform pore sizes
• Ability to withstand varying process conditions
• Available in 316L stainless steel as standard with other alloys such as 304L stainless steel, 904L stainless steel, 310 stainless steel, Inconel®, Hastelloy® and Monel® on request, as well as sintered powdered bronze

Ordering Information: For ordering information please go to page 204.

Contact Information: UK, New Milton Division
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
Specifications

Materials of Manufacture
316L stainless steel standard, 304L stainless steel, Inconel®, Hastelloy®, Monel® on request or by process selection. Additional alloys are available on request.

Element Dimensions
Diameter: 66mm [2.6"] standard
Length: 05: 125mm [5"]
10: 250mm [10"]
20: 498mm [20"]
30: 745mm [30"]
40: 1012mm [40”]
* Other diameters and lengths available on request.

Effective Filtration Area
0.05m² (0.55ft²) per 250mm (10”) element

Gaskets and O-Rings
EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.
* FDA approved seals are available.

Typical Maximum Differential Pressure* [all lengths]
Normal flow direction: 25bar (363psi)
Reverse flow direction: 10bar (145psi)
* Grade dependant.

Operating Temperature
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® P Stainless Steel Media Grades

<table>
<thead>
<tr>
<th>Stainless Steel Grades</th>
<th>Micron Rating (µm) (micron code)</th>
<th>Liquids (µm)* (99.9% efficiency)</th>
<th>Gases (µm) (99.99% efficiency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S10</td>
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* Single Pass Efficiency Test in accordance with ASTM795 ACFTD.

Contact Information:
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Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
The Sinterflo® M demonstrates good permeability, high tensile strength and is available from single wrap designs through to complex multi-layered structures in pleated constructions to optimise the area available. These meshes can be manufactured in diffusion bonded versions to increase performance security of pore shape and size and have the broadest range of pore sizes of any filter media type.

Sinterflo® M precision woven meshes are manufactured in various types of weaves. Plain square weave is available for simple sieving duties through various weave patterns (Reverse Plain Dutch, Broad Mesh Twill and Single Plain Weave). Dutch Twill Weave is provided for the most comprehensive selection of surface filtration duties.

Typical Applications
- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration
  - Culinary steam
  - Process steam
- Pharmaceutical powder recovery
- Polymer melt

Features and Benefits
- Manufactured in various types of weaves
- Precise aperture in size and shape
- Good permeability
- All welded, robust construction
- Available from single layered designs to complex multi-layered structures
- Available in the broadest range of pore sizes of any filter media type
- Smooth surface variant preferable for backwash applications
- Available in 316L stainless steel as standard with other alloys such as 304L stainless steel, Inconel®, Hastelloy® and Monel® on request.
Specifications

Materials of Manufacture
316L stainless steel standard. 304L stainless steel, Inconel®, Hastelloy® and Monel® available on request or by process selection.

Element Dimensions*  
Diameter: 66mm (2.6"") standard 
Length: 05: 125mm (5")
10: 250mm (10")
20: 498mm (20")
30: 745mm (30")
40: 1012mm (40")
* Other diameters and lengths available on request.

Effective Filtration Area
0.05m² (0.55ft²) per 250mm (10") element

Gaskets and O-Rings*  
EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.  
* FDA approved seals are available.

Typical Maximum Differential Pressure* [all lengths]  
Normal flow direction: 15bar (218psi)  
Reverse flow direction: 3bar (44psi)  
* Grade dependant.

Operating Temperature  
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting  
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® M Stainless Steel Media Grades

<table>
<thead>
<tr>
<th>Micron Rating (µm) (micron code)</th>
<th>Liquids (µm)* (99.9% efficiency)</th>
<th>Gases (µm) (99.9% efficiency)</th>
</tr>
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<tbody>
<tr>
<td>3 (0003)</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>5 (0005)</td>
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<td>13</td>
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<tr>
<td>10 (0010)</td>
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<td>50</td>
<td>45</td>
</tr>
<tr>
<td>70 (0070)</td>
<td>75</td>
<td>60</td>
</tr>
</tbody>
</table>

* Hard spherical particle maximum passed.

Contact Information: China, Wuhan Division  
Tel: +86 (0)712 2878955  
Email: infoCN@porvairfiltration.com  
India, Mumbai Division  
Tel: +91 22 25 976464 / +91 22 25 976465  
Email: infoIN@porvairfiltration.com
Pleated metal mesh filter cartridges demonstrate good permeability, high tensile strength and are available from single wrap designs through to complex multi-layered structures in pleated constructions to optimise the area available. These meshes can be manufactured in diffusion bonded versions to increase performance security of pore shape and size and have the broadest range of pore sizes of any filter media type.

Sinterflo® M precision woven meshes are manufactured in various types of weaves. Plain square weave is available for simple sieving duties through various weave patterns (Reverse Plain Dutch, Broad Mesh Twill and Single Plain Weave). Dutch Twill Weave is provided for the most comprehensive selection of surface filtration duties.

Sinterflo® M is available in 316L stainless steel as standard with other alloys such as 304L stainless steel, Inconel® and Monel® on request.

**Typical Applications**
- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration
  - Culinary steam
  - Process steam
- Pharmaceutical powder recovery
- Polymer melt

**Features and Benefits**
- Manufactured in various types of weaves
- Precise aperture in size and shape
- Good permeability
- All welded, robust construction
- Available from single layered designs to complex multi-layered structures in pleated constructions to optimise the area available
- Available in the broadest range of pore sizes of any filter media type
- Smooth surface variant preferable for backwash applications
- Available in 316L stainless steel as standard with other alloys such as 304L stainless steel, Inconel®, Hastelloy® and Monel® on request.
Specifications

Materials of Manufacture
316L stainless steel standard. 304L stainless steel, Inconel®, Hastelloy® and Monel® on request or by process selection. Additional alloys are available on request.

Cartridge Dimensions*
Diameter: 66mm (2.6”) standard
Length: 05: 125mm (5")
10: 250mm (10")
20: 498mm (20")
30: 745mm (30")
40: 1012mm (40")

* Other diameters and lengths available on request.

Effective Filtration Area
0.13m² (1.40ft²) per 250mm (10") cartridge

Gaskets and O-Rings*
EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.

* FDA approved seals are available.

Typical Maximum Differential Pressure* [all lengths]
Normal flow direction: Up to 25bar (363psi)
Reverse flow direction: 3bar (44psi)

* Grade dependant.

Operating Temperature
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® M Stainless Steel Media Grades

<table>
<thead>
<tr>
<th>Micron Rating (µm)</th>
<th>Liquids (µm)* (99.9% efficiency)</th>
<th>Gases (µm) (99.9% efficiency)</th>
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</thead>
<tbody>
<tr>
<td>3 (0003)</td>
<td>10</td>
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<td>70 (0070)</td>
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</tr>
</tbody>
</table>

* Hard spherical particle maximum passed.

Contact Information:
China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Candle Filters
for the Polymer Melt Industry

Candle filters are available in both cylindrical and pleated formats, in industry standard designs, and can be custom designed to fit any particular housing. Available in both sintered metal fibre and woven wire mesh.

Available in filtration ratings from 3 to 100 microns, our candle filters are normally supplied with an outer guard, both to protect the media and to allow reverse flow during cleaning. Our candles are readily cleanable with current technology.

All candles are provided with internal volume reduces to avoid stagnant flow regions within the candle design. Flow diverter features within the volume reducer provide good distribution over the candles as the polymer enters the housing.

Using our range of high strength, highly permeable stainless steel fibre media, results in candle filters with low initial pressure drops and long on-stream life.

Typical Applications
- Polyester bottle chip
- Polyester fibre
- Cellulose acetate fibre
- Nylon 6 and 66 fibre

Features and Benefits
- Proven robustness for cleaning and repeat use
- Long filter life
- Operate in high temperature environments
- High carbon resistance
- High filtration area for pleated candle version

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Ordering Information: For ordering information please contact a member of the Sales Team.

Contact Information:  
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Email: info@porvairfiltration.com

US, Ashland Division  
Tel: +1 804 550 1600  
Email: infoUS@porvairfiltration.com
Rempak™ Candle Filters
for the Polymer Melt Industry

Rempak™ candle filters are manufactured with removable hardware fittings and replaceable media, resulting in lower operating costs.

Available in both cylindrical and pleated formats, in industry standard designs, and can be custom designed to fit any particular housing. These are available in both sintered metal fibre and woven wire mesh.

All candles are provided with internal volume reducers to avoid stagnant flow regions within the candle design. Flow diverter features within the volume reducer provide good distribution over the candles as the polymer enters the housing.

Typical Applications
• Polyester bottle chip
• Polyester fibre
• Cellulose acetate fibre
• Nylon 6 and 66 fibre

Features and Benefits
• Proven robustness for cleaning and repeat use
• Long filter life
• Operate in high temperature environments
• High carbon resistance

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Ordering Information: For ordering information please contact a member of the Sales Team.

Contact Information: China, Wuhan Division
Tel: +86 (0)17122878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A range of pleated filter elements, for the aerospace and defence industries, are used for critical contamination control in a variety of aircraft systems.

The filter media for pleated elements can be polymeric, glass fibre or sintered metal fibre used in combination with a variety of support and drain meshes to optimise cost and performance. Typical absolute filtration ratings are 5, 10, 15 and 25 micron with a Beta ratio greater than 200.

**Sinterflo® M Sintered Metal Mesh**

Our Sinterflo® M metal mesh pleated filters demonstrate good permeability, high tensile strength and are available in complex multi-layered structures. These filters are cleanable under specific conditions, which can be defined by a member of our Sales Team.

We also supply a range of sintered metal fibre, glass fibre, polymeric or resin-impregnated cellulose pleated elements For more information please refer to page 35.

**Typical Applications**

- Hydraulic
- Lubricant
- Coolant
- Fuel
- Air
- Environmental control

**Features and Benefits**

- High filtration efficiency
- Lightweight
- Enhanced operating life

**Filter Assemblies**

Filter assemblies for hydraulic, fuel, lubrication and air systems. Applications include:

- Hydraulic pressure, return and case drain
- Thrust reverser actuation systems
- Fuel supply for both main engine and APU's
- Fuel inerting systems
- Gearbox lubrication

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
Leaf disc and solid plate filters are designed for critical hot melt polymer filtration applications, such as the manufacture of PET packaging film, PEEK chip and film.

These filters are designed to achieve greater gel control by providing smoother flow and therefore greater gel retention on the filter.

In addition to offering a wide range of filter media, our leaf disc filters offer the latest design features, ensuring lower pressure drops leading to longer on stream life. The robust construction allows for many cleaning cycles, reducing whole life costs.

With our wide experience and broad range of filter media, our application and design engineers can custom design optimum filtration products for each product and process. This includes support during the design process in order to achieve on-line performance.

Our technical laboratory services have facilities to characterise our media and elements’ performance using flow tests, porosimetry, microscopy, chemical analysis, tensile testing, metallography and the quantification of polymer contaminant with image analysis.
A range of stainless steel fibre and powder leaf disc filters are manufactured for use within the polymer melt industry. Stacked disc capsules are preferred when low residence time and uniform flow are important, and where degradation is a concern. Capsules also produce a singular downstream flow path, which eliminates the need for mixers to prevent flow lines in finished film.

Capsules are available with diameters of 178mm (7”), 254mm (10”) and 305mm (12”), all industry standard hub designs and dimensions, with optional loose or welded spiders. A wide range of efficiencies are available including 3 to 40 microns in sintered steel fibre media and 10 to 40 microns in sintered steel powder media using stainless or speciality steels.

These stainless steel fibre media filters have the following features and benefits:

- **Photo etched plate support**
  The non-perforated edge improves welding strength at the edge of the disc, increasing the strength and rigidity of the filter

- **Mesh separator**
  Precision 316L alloy stainless steel mesh increases the overall strength and rigidity of the filter

- **Advanced hard hub**
  Maximum strength and 35% more open area, reducing pressure drop without compromising disc strength

**Features and Benefits**
- Optimum strength and performance
- Readily cleanable
- Long on-stream life
- Constant pore size distribution during manufacture

**Specifications**

**Materials of Manufacture**
304L / 316L stainless steel standard

**Method of Construction**
Fusion welded

**Method of Sealing**
Metal fibre gasket

**Dimensions**
- 305mm (12”) x 63.5mm (2.5”)
- 305mm (12”) x 85.1mm (3.35”)
- 178mm (7”) x 47.75mm (1.88”)

**Minimum Differential Pressure**
300bar (4351psi) at 350°C (662°F)

**Operating Temperature**
Maximum continuous: up to 400°C (752°F)

**Disc Stack Sealing Load**
8 tonne maximum

**Typical Applications**
- Polyester film
- PEEK material

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
Solid plate leaf disc filters are manufactured for use within the polymer melt industry.

Our solid plate capsule filter is designed for high performance film and fibre production, with a rugged construction offering increased strength and durability and minimal residence time.

The solid plate greatly improves the appearance and performance of thin film products and limits the creation of gels and degraded polymer at high temperatures.

With Prolog tracking, each filter is uniquely identified and certified by weight and bubble point at manufacture to allow for precise verification of the cleaning process.

Typical Applications
- Polycarbonate films

Features and Benefits
- Easy to clean
- Inherent strength
- Low interference drainage channels
- No filter support material required
- Can be re-clothed
- Low residence time

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
Disposable Filter Elements and Cartridges

A range of disposable polymeric filters are manufactured for use within the following industries:

**Biopharmaceutical**
Our disposable polymeric cartridge filters are constructed from FDA approved materials carrying the CFR 21 number for biological safety and our materials of construction meet USP Class VI-121°C plastics. Designed and manufactured for robustness, these sterilising grade polymeric membrane filters are fully validated providing retention of >10⁷ colony forming units per square centimetre of effective filtration area as stipulated by PDA Technical Reports 26 and 40.

**Food and Beverage**
Our range of filters are installed to effectively remove particulates, yeast, mould spores and bacteria for use in wineries, breweries, cider, mineral water, soft drinks, food and dairy products, culinary steam, powder handling and sparging applications.

**Industrial and Chemical Process**
Our filter range can be used in process applications such as specialist inks, UV curable inks, laminates, coatings and lacquers, electronics grade chemicals, water treatment, carbon fibre precursor, paint, parts washing, powder handling and transmission, cosmetics and toiletries.

**Printing**
Inprinta’s extended range of filters offers solutions for inkjet requirements including capsule, in-line, last chance, and bulk ink filtration.
Pleated Filter Elements
For the Aerospace Industry

Our range of pleated filter elements for the aerospace and defence industries are used for critical contamination control in a variety of aircraft systems.

The filter media for disposable pleated elements can be polymeric, glass fibre or sintered metal fibre, used in combination with a variety of support and drain meshes to optimise cost and performance. Typical absolute filtration ratings are 5, 10, 15 and 25 micron with a Beta ratio greater than 200.

Polymeric or Resin-Impregnated Cellulose
Moderate dirt-holding capacity and lightweight. Offer a cost-effective solution for low pressure and temperature fuel filtration.

Glass Fibre
Reduced pressure drop, increased dirt-holding capacity and can withstand greater pressures and temperatures than cellulose filters.

Sinterflo® F Sintered Metal Fibre
Sinterflo® F sintered metal fibre filters offer unparalleled performance and can withstand extremes of temperature and pressure. Studies indicate a superior resistance to the downstream deposit of contamination and maintaining integrity during dynamic flow conditions.

We also supply a range of sintered metal mesh pleated elements. For more information, please refer to page 26.

Typical Applications
- Hydraulic
- Lubricant
- Coolant
- Fuel
- Air
- Environmental control

Features and Benefits
- High filtration efficiency
- Lightweight
- Enhanced operating life

Filter Assemblies
Filter assemblies for hydraulic, fuel, lubrication and air systems. Applications include:
- Hydraulic pressure, return and case drain
- Thrust reverser actuation systems
- Fuel supply for both main engine and APUs
- Fuel inerting systems
- Gearbox lubrication

Ordering Information: For ordering information please contact a member of the Sales Team.

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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A range of high-quality nominally-rated pleated polypropylene cartridge filters, suitable for challenging filtration environments, including chemical processing, process water and food and beverage.

PolyKey™ filter cartridges are manufactured from melt-blown and spun-bonded pleated polypropylene media, ensuring a highly efficient media with excellent particulate removal as well as low pressure drops.

**Typical Applications**
- Food and beverage
- Reverse osmosis pre-filtration
- Potable and de-ionised water
- Process water
- Chemical processing
- Coatings
- Oils

**Features and Benefits**
- Excellent chemical compatibility
- Variety of end caps
- High-efficiency design
- Outer guard in a single module
- Wide range of options
Standard

Materials of Manufacture
Filter media: Polypropylene
Membrane support: Polypropylene
End caps: Polypropylene (thermal bonded)

Effective Filtration Area
4.5ft² (0.4m²) per 10” (254mm) length

Operating Characteristics
Maximum ΔP: 60psid (4.1bar) @ 140°F (60°C)
Changeout recommended at 30psid (2.1bar)

Cartridge Dimensions (Nominal)
Diameter: OD 2.75” (70mm)
2.5” (64mm)
ID 1” (25mm)
Length: 5” (127mm)
10” (254mm)
20” (508mm)
30” (762mm)
40” (1,016mm)
Other lengths available on request.

Filter Retention Specifications*

<table>
<thead>
<tr>
<th>Nominal micron rating</th>
<th>Particulate removal efficiency (Beta ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90% (10)</td>
</tr>
<tr>
<td>0.1</td>
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<tr>
<td>0.2</td>
<td>0.2</td>
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<td>0.45</td>
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<tr>
<td>1</td>
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</tr>
<tr>
<td>10</td>
<td>7</td>
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<tr>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

*Data acquired by multi-pass testing. Ratings are based on laboratory tests using ISO ultra-fine test dust for 0.2, 0.45 and 1µ and ISO fine test dust for 5µ. Flow rate 1 gpm/sq. ft. at room temperature. Field results will be influenced by the type of fluid and contaminant as well as the flow rate and temperature.
GIANT Wide Diameter Cartridges

High Efficiency GIANT Pleated Cartridges
GIANT 222 and DOE wide diameter cartridges offer maximum filtration capacity within a compact unit, featuring a 4.5" (114mm) diameter with differing length options.

These cartridges are composed of 10ft² (0.9m²) of effective surface area per 10" (254mm) cartridge.

Used in conjunction with Porvair’s GIANT HOUSING® Series 222 Polypropylene filter housings, these systems offer an economical alternative to multi-cartridge stainless steel housings with standard diameter filter cartridges. These are also suitable to retrofit into most industry standard wide diameter housings.

Materials of Manufacture
Media: Polypropylene or Polyester
End caps: Polypropylene assembled with Polypropylene hot melt adhesive

Effective Filtration Area
10ft² (0.9m²) per 10" (254mm) length

Nominal Micron Ratings
0.2, 0.45, 1 in Polypropylene media
5 micron in Polyester media

Cartridge Dimensions
Diameter: OD 4.5" (114mm)
Length: 10" (254mm) 20" (508mm)
Sized to fit in the 222 GIANT HOUSING® series

Filter Retention Specifications*

<table>
<thead>
<tr>
<th>Nominal micron rating</th>
<th>Particulate removal efficiency (Beta ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90% (10)</td>
</tr>
<tr>
<td>0.2 Polypropylene</td>
<td>0.2</td>
</tr>
<tr>
<td>0.45 Polypropylene</td>
<td>0.45</td>
</tr>
<tr>
<td>1 Polypropylene</td>
<td>1</td>
</tr>
<tr>
<td>5 Polyester</td>
<td>5</td>
</tr>
</tbody>
</table>

Flow rates shown are based on an extrapolation of results taken from the standard range.

*Data acquired by multi-pass testing. Ratings are based on laboratory tests using ISO ultra-fine test dust for 0.2, 0.45 and 1µ and ISO fine test dust for 5µ. Flow rate 1 gpm/sq.ft. at room temperature. Field results will be influenced by the type of fluid and contaminant as well as the flow rate and temperature.
A range of high quality pleated microfibre glass cartridge filters, suitable for challenging filtration environments.

MicroKey™ cartridge filters are manufactured from microfibre glass layered with spun-bonded polyester, to produce a highly efficient media with excellent particulate removal as well as low pressure drops.

**Typical Applications**
- High temperature
- Process water
- Produced water
- Coatings
- Printing
- Reverse osmosis pre-filtration
- Oils

**Features and Benefits**
- Excellent compatibility at high temperature
- Maximum processing
- High-efficiency
Specifications

Materials of Manufacture
Filter media: Microfibreglass layered with spun-bonded polyester; 50 micron is 100% polyester
Membrane support: Polypropylene or polyester/Nylon

Nominal Micron Ratings
0.1, 0.2, 0.45, 1, 3, 10, 30, 50
Ratings derived from independent laboratory tests using latex bead suspensions and particle counter readings.

Effective Filtration Area
4 ft² per layer per 10” length (0.37 m² per 254 mm length)

Operating Characteristics
Maximum ΔP:
- 75 psid (5.2 bar) @ 68°F (20°C)
- 40 psid (2.8 bar) @ 150°F (66°C)

Maximum Operating Temperature:
- 140°F (60°C) for standard version (S)
- 200°F (93°C) for high temperature version (H)

Cartridge Dimensions
Diameter: OD: 2.75” (70 mm), ID 1” (25 mm)
Nominal Lengths: 5” (127 mm) to 40” (1,016 mm)

Filter Retention Specifications

<table>
<thead>
<tr>
<th>Nominal micron rating</th>
<th>Liquid Service</th>
<th>Gas service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90% (10)</td>
<td>99% (100)</td>
</tr>
<tr>
<td>0.1</td>
<td>0.1</td>
<td>0.45</td>
</tr>
<tr>
<td>0.2</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>0.45</td>
<td>0.45</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>30</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>50</td>
<td>30</td>
<td>40</td>
</tr>
</tbody>
</table>

Flow / Pressure Drop

Microfibreglass media in a pleated construction provides excellent flow rates with minimum pressure drop. Flow rates shown are for a nominal 10” (254 mm) cartridge. For fluids other than water, multiply the pressure drop by the fluid viscosity in centipoise.
Activated Carbon, a porous substance with strong physical adsorption properties, has the highest volume of adsorbing porosity of any material known.

By carbonisation and activation, activated carbon can be made from many substances containing high carbon content such as coal, wood, bamboo and coconut shells.

Activated carbon filters are widely applied in industrial process and civil use as the most efficient method of removing odours, chlorine, volatile organic compounds (VOC), colours, tastes and other contaminants from fluids.

The Carbofil™ series is the new generation of carbon cartridges produced by the extrusion process. They provide long service life and superior adsorption performance compared to conventional granular activated carbon cartridges together with minimum fines. With a high mechanical strength and low ash content, the carbon block structure prevents channelling, bypassing, fluidising or unloading of carbon fines.

To prevent premature blocking of the activated carbon layer, Carbofil™ filters incorporate an effective pre-filtration layer designed to intercept gels and large particles.

The Carbofil™ series activated carbon filter cartridges use premium grade coconut shell extruded carbon blocks and can be supplied in any length and end cap configuration, to meet the requirements of the process application.

Typical Applications
- PCB solutions
- Plating and coating solutions
- Industrial water treatment
- Drinking water treatment
- Chlorine and VOC removal
- Tastes, odours and organic pigments
- Chlorinated compounds reduction
- Oils and aromatic compounds removal

Features and Benefits
- Safe handling without any loose powder
- Sanitary installation and removal
- Fits into a variety of standard filter housings
- Rapid and high capacity adsorption of contaminants

Ordering Information: For ordering information please go to page 206.

Contact Information:
UK, New Milton Division
Tel: +44 (0) 1425 612010
Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
Specifications

Materials of Manufacture
Filter media: PAC impregnated cellulose
Netting: Polyethylene
Reinforcement backing: Cellulose polyester
Core: Polypropylene
Outer support: Polypropylene
End caps: Polypropylene

Cartridge Dimensions (Nominal)
Outside diameter: 70mm (2.8”)
Inside diameter: 27mm (1.1”)
Length: 254mm (10”)
508mm (20”)
762mm (30”)
1016mm (40”)

Gaskets and O-Rings
Ethylene Propylene

Operating Temperature
From 40°F (4°C) to 125°F (52°C)

Cartridge Performance

<table>
<thead>
<tr>
<th>Filter Code</th>
<th>Cartridge Length (mm)</th>
<th>Micron Rating (µm)</th>
<th>Initial Δp (psig) @ flow rate lpm</th>
<th>Chlorine Reduction @ flow rate lpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR05-N1</td>
<td>250mm (10”)</td>
<td>5</td>
<td>1.4psi @ 4 lpm</td>
<td>&gt;23,000 litres @ 4 lpm</td>
</tr>
<tr>
<td>CR05-N2</td>
<td>508mm (20”)</td>
<td>5</td>
<td>1.5psi @ 8 lpm</td>
<td>&gt;46,000 litres @ 8 lpm</td>
</tr>
<tr>
<td>CR05-N3</td>
<td>762mm (30”)</td>
<td>5</td>
<td>1.5psi @ 15 lpm</td>
<td>&gt;69,000 litres @ 15 lpm</td>
</tr>
<tr>
<td>CR05-N4</td>
<td>1016mm (40”)</td>
<td>5</td>
<td>1.5psi @ 20 lpm</td>
<td>&gt;92,000 litres @ 20 lpm</td>
</tr>
</tbody>
</table>

Additional Information
The Carbofil™ cartridge contains a very small amount of carbon fines (very fine black powder) - a new cartridge after installation should be flushed with sufficient water to remove traces of the fines from your water system before using the water. It is recommended that you run (flush) for at least 20 seconds prior to using water.

Estimated capacity tested at given flow rate using 2ppm free available chlorine at continuous flow to with greater than 90% reduction. Increased flow rates may result in less effective chlorine reduction.

Micron ratings are based on 85% removal of given particle size.

WARNING
For drinking water applications, do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.
Cryptofil™ filter cartridges are used for the control of Cryptosporidium oocysts in water used in the food, beverage and ultrapure water industries.

The Cryptofil™ cartridge has been developed following extensive research and has resulted in filter media with continuously graded fibre density; this yields progressively finer oocyst retention through the depth of the media.

This graded density depth filtration mechanism, combined with optimised pleated pack configuration and resultant high surface area, affords high flow capability and exceptional oocyst retention capacity.

Cryptosporidium oocysts removed from the water flow are captured within the media and are not subject to release by system fluctuations. The voids volume of Cryptofil™ combined with advanced cartridge construction results in a filter capable of retaining high concentrations of oocysts ensuring extended service life and reduced filtration costs.

**Typical Applications**
- Mineral water
- Food processing
- Embarkation water supply
- Leisure

**Features and Benefits**
- Graded multi-layer media
- Guaranteed removal ratings
- High filtration area
- Cartridge integrity and low TOC levels
- Suitable for steam and hot water sanitisation
- Environmentally friendly
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter media: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8")
Length:
1 module: 254mm (10")
2 modules: 762mm (30")
508mm (20")
1016mm (40")

Effective Filtration Area
Up to 0.6m² per 250mm module

Cartridge Treatment
Standard: Cleaned without further treatment
Flushed: Rinsed with pyrogen free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
Ethylene Propylene, FEP encapsulated, Silicone, Viton®, Nitrile or Polypropylene felt

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0 bar (87psi)
80°C (176°F): 4.0 bar (58psi)
100°C (212°F): 3.0 bar (44psi)
120°C (248°F): 2.0 bar (29psi)
125°C (257°F): 1.5 bar (22psi)
Reverse flow direction at:
20°C (68°F): 2.1 bar (30psi)
80°C (176°F): 1.0 bar (15psi)
100°C (212°F): 0.5 bar (7psi)

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

Sterilisation
In situ steam 60 x 30 minute cycles at 130°C (266°F)
Hot water 200 x 20 minute cycles at 80°C (176°F)

Extractables
Minimum total extractables. Please refer to the Cryptofil™ Validation Guide.

Integrity Testing
Each Cryptofil™ module of every cartridge is individually integrity tested using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 254mm (10") Cryptofil™ 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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Contact Information:
China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A range of absolute rated cartridge filters are manufactured, featuring the latest developments in meltblown polypropylene filter media technology; Klearfil™ cartridges are based on a robust all polypropylene construction, offering removal ratings from 0.5 to 75 micron absolute.

The combination of up to eight separate filtration layers provides true depth filtration, within a pleated cartridge construction. This design reduces fouling of the filter surface area caused by a broad spectrum of contaminants.

Klearfil™ cartridges are ideally suited for the filtration of process fluids that contain contaminants with a wide range of particle sizes.

The graded multi-layer polypropylene media provides pre-filtration of the process fluid prior to the absolute rated final layer. The unique design of the Klearfil™ cartridge helps to achieve lower running costs and a smaller process footprint.

Klearfil™ is highly resistant to integrity failure caused by steam sterilisation and has excellent chemical compatibility characteristics.

Klearfil™ is suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

**Typical Applications**
- Pharmaceuticals and bioprocessing
- Foods and beverages
- Process water systems
- Fine chemicals
- Cosmetics

Klearfil™ cartridges can also be used as pre-filters or final filters in bulk inkjet filtration, suitable for manufacture with all major ink types:
- Aqueous
- UV
- Solvent
- Dye
- Pigment

**Features and Benefits**
- Graded multi-layer media
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Environmentally friendly
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter media: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8")
Length:
1 module (short): 125mm (5")
1 module: 254mm (10")
508mm (20")
2 modules: 762mm (30")
1016mm (40")

Cartridge Treatment
Standard: Cleaned without further treatment
Flushed: Flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
Ethylene Propylene, FEP encapsulated, Silicone, Vilon®, Nitrile or Polypropylene felt

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0 bar (87psi)
80°C (176°F): 4.0 bar (58psi)
100°C (212°F): 3.0 bar (44psi)
120°C (248°F): 2.0 bar (29psi)
125°C (257°F): 1.5 bar (22psi)
Reverse flow direction at:
20°C (68°F): 2.1 bar (30psi)
80°C (176°F): 1.0 bar (15psi)
100°C (212°F): 0.5 bar (7psi)

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

Sterilisation
In situ steam 80 x 30 minute cycles at 135°C (275°F)
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables. Please refer to the Klearfil™ Validation Guide.

Integrity Testing
Klearfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 254mm (10") Klearfil™ 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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Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A range of absolute rated cartridge filters are manufactured, featuring the latest developments in borosilicate glass fibre filter media technology; Microfil™ cartridges are constructed from robust glass fibre and polypropylene filtration layers, offering removal ratings from 0.5 to 5 micron absolute.

Microfil™ cartridges are suitable for absolute removal of unwanted particulates and for pre-filtration to membrane filters.

Microfil™ cartridges incorporate a polypropylene pre-filtration layer, combined with a high dirt capacity glass fibre media. This has the effect of longer service life, improved operating costs and smaller process footprint.

Microfil™ filter cartridges are highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics.

They are suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

**Typical Applications**
- Foods and beverages
- Process water systems
- Pharmaceuticals and bioprocessing
- Fine chemicals
- Cosmetics

**Features and Benefits**
- Zeta potential
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Resistance to Cleaning-In-Place (CIP) regimes
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter media: Glass fibre
Pre-filtration layer: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8")
Length:
1 module (short): 125mm (5")
1 module: 254mm (10"), 508mm (20")
2 modules: 762mm (30"), 1016mm (40")

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Removal Rating</th>
<th>Effective Filtration Area (each 254mm (10&quot;) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5, 0.8, 1.0, 2.0 and 5.0μm</td>
<td>0.4m² (4.4ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned without further treatment
Flushed: Flushed with pyrogen-free water

Gaskets and O-Rings
Ethylene Propylene, FEP encapsulated, Silicone, Viton®, Nitrile or Polypropylene felt

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0 bar [87psi]
80°C (176°F): 4.0 bar [58psi]
100°C (212°F): 3.0 bar [44psi]
120°C (248°F): 2.0 bar [29psi]
Reverse flow direction at:
20°C (68°F): 2.1 bar [30psi]
80°C (176°F): 1.0 bar [15psi]
100°C (212°F): 0.5 bar [7psi]

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

Sterilisation
In situ steam 20 x 30 minute cycles at 130°C (266°F)
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables. Please refer to the Microfil® Validation Guide.

Integrity Testing
Microfil® filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 254mm (10") Microfil® 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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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Microfil™ WF
Pleated Depth Filter or Final Polishing Filter

Microfil™ wide format (WF) filter cartridges are designed for applications requiring a very high flow rate. They are equally suitable for use as pre-filters or final polishing filters in applications that do not require membrane filtration. The use of a spacer mesh as an upstream pleat support means that fluid flow is uniform across the entire surface of the filter medium. The mesh holds the flow channels open thereby maximising dirt holding capacity and minimising pressure drop across the filter.

Our filter cartridges are absolute rated, tested to Beta 5000 using the industry standard single pass OSU-F2 test procedure with ISO 12103 part 1 A2 Fine and A4 Coarse test dust as appropriate.

Manufactured in the UK using all polypropylene hardware with glass fibre filter media, these filter cartridges have excellent chemical compatibility.

Thermal bonded construction eliminates the requirement for adhesives, maintaining product integrity in demanding applications and minimising the level of extractables in the filtrate. All the materials conform to the relevant requirements of FDA CFR21 part 17.

Features and Benefits

- Absolute micron ratings to ensure consistent, repeatable performance
- Inside to out flow ensures that contamination is collected inside the filter cartridge for easy disposal
- Manufactured in the UK
- Large surface area, typically 5 metres per 40”, and pleat spacing mesh on the inner layer ensures low initial pressure drops and high dirt holding capacity, for extended service life
- All polypropylene hardware with glass fibre filter media, thermally bonded, means wide chemical compatibility and a minimum level of extractables
- Suitable for steam sterilisation, autoclaving and hot water sanitisation
- Available in 20”, 40” and 60” lengths to retrofit into most existing installations
Specifications

Materials of Manufacture
Filter medium: Glass fibre
Drainage layers: Polypropylene
Support mesh: Polypropylene
Outer core: Polypropylene
End caps: Polypropylene

Cartridge Dimensions
Outside Diameter: 154mm (6”)
Inside Diameter: 75mm (3”)
Length:
- 508mm (20”)
- 1016mm (40”)
- 1524mm (60”)

Pore Sizes
0.5µm, 1.0µm, 5.0µm and 10µm

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Rating</th>
<th>Effective Filtration Area (each 1016mm (40”) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.45, 1, 5, 10, 25, 50, 0.65 and 100µm</td>
<td>5m² (53.8ft²)</td>
</tr>
</tbody>
</table>

Gaskets and O-Rings
EPDM, FEP encapsulated, Silicone, Viton® and Nitrile

Maximum Differential Pressure
Normal flow direction at:
- 20°C (68°F): 3.5 bar (51psi)
- 65°C (149°F): 1.8 bar (26psi)
- 80°C (176°F): 1.0 bar (15psi)

Reverse flow is not recommended.

Recommended Changeout Differential Pressure
- 20°C (68°F): 1.5bar (22psi)

Sanitation
Steam or autoclave: 121°C (250°F) for 15 minutes
Hot water sanitation: 90°C (194°F) for 30 minutes repeatedly

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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A range of absolute rated cartridge filters are created, featuring the latest developments in meltblown polypropylene filter media technology. Polyfil™ II cartridges are based on a robust all polypropylene construction, offering removal ratings from 0.5 to 105 micron absolute.

Polyfil™ II cartridges are suitable for absolute removal of unwanted particulates and for pre-filtration to membrane filters. The graded multi-layer polypropylene media provide pre-filtration of the process fluid prior to the absolute rated final layer. The unique design of the Polyfil™ II cartridges helps to achieve lower running costs and a smaller process footprint.

Polyfil™ II filters are also highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics. They are suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

Typical Applications
- Pharmaceuticals and bioprocessing
- Foods and beverages
- Inks and coatings
- Fine chemicals
- Cosmetics
- Process water systems

Features and Benefits
- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Environmentally friendly
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter media: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length:
- 1 module (short): 125mm (5”)
- 1 module: 254mm (10”)
- 508mm (20”)
- 2 modules: 762mm (30”), 1016mm (40”)

Effective Filtration Area
Up to 0.6m² per 250mm module (depending on pore rating)

Cartridge Treatment
Standard: Cleaned without further treatment
Flushed:Flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
Ethylene Propylene, FEP encapsulated, Silicone, Viton®, Nitrile or Polypropylene felt

Maximum Differential Pressure
Normal flow direction at:
- 20°C (68°F): 6.0 bar [87psi]
- 80°C (176°F): 4.0 bar [58psi]
- 100°C (212°F): 3.0 bar [44psi]
- 120°C (248°F): 2.0 bar [29psi]
- 125°C (257°F): 1.5 bar [22psi]
Reverse flow direction at:
- 20°C (68°F): 2.1 bar [30lb/in²]
- 80°C (176°F): 1.0 bar [15lb/in²]
- 100°C (212°F): 0.5 bar [7lb/in²]

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

Sterilisation
In situ steam 80 x 30 minute cycles at 135°C (275°F)
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables. Please refer to the Polyfil™ II Validation Guide.

Integrity Testing
Polyfil™ II filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
• Typical clean water flow rate:
  A 254mm (10”) Polyfil™ II 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.
Polyfil™ wide format (WF) filter cartridges are designed for applications requiring a very high flow rate. They are equally suitable for use as pre-filters or final polishing filters in applications that do not require membrane filtration. The use of a spacer mesh as an upstream pleat support means that fluid flow is uniform across the entire surface of the filter medium. The mesh holds the flow channels open thereby maximising dirt holding capacity and minimising pressure drop across the filter.

Our filter cartridges are absolute rated, tested to Beta 5000 using the industry standard single pass OSU-F2 test procedure with ISO 12103 part 1 A2 Fine and A4 Coarse test dust as appropriate.

Manufactured in the UK from all polypropylene media and hardware, these filter cartridges have excellent chemical compatibility.

Thermal bonded construction eliminates the requirement for adhesives, maintaining product integrity in demanding applications and minimising the level of extractables in the filtrate. All the materials conform to the relevant requirements of FDA CFR21 part 177 and cartridges using polypropylene filter media meet the requirements for food contact as detailed in European Regulation 1935/2004.

Features and Benefits

- Absolute micron ratings to ensure consistent, repeatable performance
- Inside to out flow ensures that contamination is collected inside the filter cartridge, for easy disposal
- Our Polyfil™ WF filters meet the requirements for food contact as detailed in EC 1935/2004
- Manufactured in the UK
- Large surface area, typically 5 metres per 40”, and pleat spacing mesh on the inner layer ensures low initial pressure drops and high dirt holding capacity, for extended service life
- 100% Polypropylene construction (PP only) and thermal bonding mean wide chemical compatibility and a minimum level of extractables
- Suitable for steam sterilisation, autoclaving and hot water sanitisation
- Available in 20", 40” and 60” lengths to retrofit into most existing installations
Specifications

Materials of Manufacture
Filter medium: Polypropylene or glass fibre
Drainage layers: Polypropylene
Support mesh: Polypropylene
Outer core: Polypropylene
End caps: Polypropylene

Cartridge Dimensions (Nominal)
Outside Diameter: 154mm [6”]
Inside Diameter: 75mm [3”]
Length: 508mm [20”] 1016mm [40”] 1524mm [60”]

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 1016mm [40”] module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.45, 1, 5, 10, 25, 50</td>
<td>5m² (53.8ft²)</td>
</tr>
<tr>
<td>0.65 and 100μm</td>
<td></td>
</tr>
</tbody>
</table>

Gaskets and O-Rings
EPDM, FEP encapsulated, Silicone, Viton® and Nitrile

Maximum Differential Pressure
Normal flow direction at:
- 20°C (68°F): 3.5 bar [51psi]
- 65°C (149°F): 1.8 bar [26psi]
- 80°C (176°F): 1.0 bar [15psi]

Reverse flow is not recommended.

Recommended Changeout Differential Pressure
- 20°C (68°F): 1.5bar [22psi]

Sanitation
Steam or autoclave: 121°C [250°F] for 15 minutes
Hot water sanitation: 90°C [194°F] for 30 minutes repeatedly

Clean Water Flow Rates
Polypropylene Media:

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India, Mumbai Division
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Tekfil™ Absolute
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.

Typical Applications

- Foods and beverages
- Pharmaceuticals
- Fine chemicals and solvents
- Coatings
- Photographic chemicals
- Metal finishing electroplating
- Water treatment prior to reverse osmosis
- Cosmetics product filling

Tekfil™ cartridges can also be used as pre-filters or final filters in bulk inkjet filtration; suitable for manufacture with all major ink types:

- Aqueous
- UV
- Solvent
- Dye
- Pigment

Features and Benefits

- Graded depth media
- High degree of chemical compatibility
- Absolute and nominal removal ratings
- Suitable for steam and hot water sanitisation
- Environmentally friendly

Ordering Information: For ordering information please go to page 206.

Contact Information: UK, New Milton Division
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
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 (51psi)
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.

Contact Information:
China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 2225 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Tekfil™ WF wide format (WF) filter cartridges are designed for applications requiring a very high flow rate. They are equally suitable for use as pre-filters or final polishing filters in applications that do not require membrane filtration. The use of a spacer mesh as an upstream pleat support means that fluid flow is uniform across the entire surface of the filter medium. The mesh holds the flow channels open thereby maximising dirt holding capacity and minimising pressure drop across the filter.

Our filter cartridges are absolute rated, tested to Beta 5000 using the industry standard single pass OSU-F2 test procedure with ISO 12103 part 1 A2 Fine and A4 Coarse test dust as appropriate.

Manufactured in the UK using all polypropylene and hardware, these filter cartridges have excellent chemical compatibility. Thermal bonded construction eliminates the requirement for adhesives, maintaining product integrity in demanding applications and minimising the level of extractables in the filtrate. All the materials conform to the relevant requirements of FDA CFR21 part 17.

Features and Benefits

- Absolute micron ratings to ensure consistent, repeatable performance
- Multi layer graded density structure gives high contaminant holding capacity resulting in a longer filter service life
- Available with or without a core
- Manufactured in the UK
- Formed by thermal bonding with no resins, binders or adhesives
- 100% polypropylene or nylon construction, provides wide process fluids compatibility and a minimum level of extractables
- Suitable for high flow applications as the large surface area and high void volume media result in low pressure drops and high contaminant capacity
- Available in 20” and 40” lengths to retrofit into most existing installations
- Compliant with NSF42 and FDA CFR title 21
Specifications

Materials of Manufacture
Filter media: Polypropylene or nylon

Cartridge Dimensions (Nominal)
Outside diameter: 152mm (6”)
Inside diameter: 114mm (4.5”)
Length: 508mm (20”)
1016mm (40”)

Micron Rating
5µm, 10µm, 25µm, 40µm, 75µm and 100µm

Effective Filtration Area
Absolute Microbial Rating | Effective Filtration Area (each 1016mm (40”) module)
--- | ---
5µm, 10µm, 25µm, 40µm, 75µm and 100µm | 5m² (53.8ft²)

Recommended Operating Conditions

<table>
<thead>
<tr>
<th></th>
<th>Polypropylene</th>
<th>Nylon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended ΔP @ 20°C (68°F)</td>
<td>2 bar (29psi)</td>
<td>2 bar (29psi)</td>
</tr>
<tr>
<td>Maximum ΔP @ 20°C (68°F)</td>
<td>4 bar (58psi)</td>
<td>4 bar (58psi)</td>
</tr>
<tr>
<td>Maximum ΔP @ 80°C (176°F)</td>
<td>1 bar (15psi)</td>
<td>2 bar (29psi)</td>
</tr>
<tr>
<td>Maximum ΔP @ 135°C (275°F)</td>
<td>n/a</td>
<td>0.5 bar (7psi)</td>
</tr>
</tbody>
</table>

Maximum Differential Pressure
Normal flow direction at:
- 20°C (68°F): 3.5 bar (51psi)
- 65°C (149°F): 1.8 bar (26psi)
- 80°C (176°F): 1.0 bar (15psi)

Recommended Changeout Differential Pressure
- 20°C (68°F): 1.5 bar (22psi)

Flow Rate / Pressure Drop

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Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Tekfil™ GV
Filter Cartridge for the Filtration of Gels and Viscous Fluids

Tekfil™ GV meltblown filter cartridges are designed specifically for the filtration of high viscosity fluids, such as paints, inks and resins. The graded density of depth filters is highly suited for the retention of gels and other deformable particles.

Tekfil™ GV filters are manufactured by controlling the fibre diameters which maintain high tensile strength, high void volume and higher differential pressure than conventional meltblown filters.

Tekfil™ GV cartridges provide absolute and nominal filtration where the retention of deformable particles is critical at cost effective prices. Suitable for the filtration of either viscous inorganic and organic liquids, Tekfil™ cartridges can be used as prefilters or final filters.

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.

The all-polypropylene construction of the filters are free from silicone and binders and ensures zero fibre mitigation during the recommended process conditions.

Tekfil™ GV filters are available with a wide range of thermally welded endcaps.

Typical Applications

- High viscosity fluids
- Paints
- Inks
- Coatings
- Resins

Features and Benefits

- **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 offering broad chemical compatibility.

- **High dirt holding capacity**
  4 layer graded density, providing true depth filtration and high dirt holding capacity for a longer service life.

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

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

- **Silicone Free**
  Tekfil™ GV filters are manufactured from silicone free materials, therefore ensuring no contamination of the filtered product, which could lead to the rejection of the final product.
Specifications

Materials of Manufacture
Filter media: Polypropylene
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): 5 bar (73psi)

Recommended Changeout Pressure
2.5 bar (36psi)

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

Extractables
Minimum total extractables

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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
The Trapfil™ filter has been specifically developed for the retention of diatomite and polyvinylpolypyrrolidone (PVPP) particles. It is manufactured from materials which are 100% FDA (Food and Drug Administration) approved and fully welded for strength and integrity.

The all polypropylene construction enables the Trapfil™ filter to be resistant to hot caustic solution and standard CIP practices. It is also compatible with steam and hot water sanitising procedures.

Designed to be backflushed in situ to remove diatomite and PVPP particles, it has been industry proven to withstand up to 100 backflush cycles with hot caustic solution at 70-80°C (158-176°F). This backflushing process regenerates the Trapfil™ filter providing improved economics.

The Trapfil™ filter is available in a variety of lengths and industry standard adaptors. Trapfil™ cartridges are available in 5, 10 and 15 micron ratings, validated at Beta 5000.

Each Trapfil™ filter carries a unique serial number to enable full traceability of material components.

Typical Applications
- Stabilisation
- Clarification

Features and Benefits
- Backflushing
- Chemical regeneration
- Suitable for steam and hot water sanitisation
- Guaranteed removal ratings
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter media: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8"
Length: 1 module: 254mm (10"), 508mm (20"
2 modules: 762mm (30"), 1016mm (40"

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Removal Rating</th>
<th>Effective Filtration Area (each 254mm (10&quot;) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 10 and 15μm</td>
<td>0.53m² (5.7ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed with pyrogen-free water

Gaskets and O-Rings
FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

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

Sterilisation
In situ steam 100 x 30 minute cycles at 125°C (257°F)
Hot water 250 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables. Please refer to the Trapfil™ Validation Guide.

Integrity Testing
Trapfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
• Typical clean water flow rate:
  A 254mm (10") Trapfil™ 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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India, Mumbai Division
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Email: infoIN@porvairfiltration.com
A range of cartridge filters are designed, featuring the latest developments in membrane technology. Aquafil™ cartridges are based on a naturally hydrophilic polyethersulphone membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques common to all Porvair cartridge filters, the polyethersulphone membrane provides a high strength, long life cartridge.

Aquafil™ cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. Careful media selection ensures that Aquafil™ cartridges are suited to retention down to 0.2 micron ratings. Aquafil™ cartridges offer high flux rates and low differential pressures, a feature common to polyethersulphone membranes.

Aquafil™ cartridges benefit from the low non-specific protein binding characteristics of polyethersulphone membranes. They are resistant to steam sterilisation and have excellent chemical compatibility characteristics. They do not hydrolyse, making them ideal for use in ultra pure water supply systems (≥18MΩ. cm).

Aquafil™ cartridges provide a combination of features and benefits that were, until now, unavailable from cartridges based on PVDF, nylon, mixed esters of cellulose or polysulphone membranes. They are suitable for applications ranging from bioburden reduction and the clarification of a wide range of process liquids and end products.

Typical Applications
- Pure water supply
- Biopharmaceuticals
- Ophthalmic solutions
- Electronics and semiconductors
- Fine chemicals
- Beverages

Features and Benefits
- Removal ratings
- Low protein binding
- Will not hydrolyse
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membrane: Polyethersulphone
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length:
- 1 module: 254mm (10”)
- 2 modules: 508mm (20”)
- 3 modules: 762mm (30”)
- 4 modules: 1016mm (40”)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Pore Size Rating</th>
<th>Effective Filtration Area (each 254mm (10”) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2, 0.45, 0.65 and 1.2μm</td>
<td>0.69m² (7.4ft²)</td>
</tr>
</tbody>
</table>

Gaskets and O-Rings
FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
- 20°C (68°F): 6.0bar (87psi)
- 80°C (176°F): 4.0bar (58psi)
- 100°C (212°F): 3.0bar (44psi)
- 120°C (248°F): 2.0bar (29psi)
Reverse flow direction at:
- 20°C (68°F): 2.1bar (30psi)
- 80°C (176°F): 1.0bar (15psi)
- 100°C (212°F): 0.5bar (7psi)

Operating Temperature
Maximum continuous: 60°C (140°F)

Sterilisation
In situ steam 80 x 20 minute cycles at 125°C (257°F)
Hot water 100 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables

Clean Water Flow Rates
- Typical clean water flow rate: A 254mm (10”) Aquafil™ 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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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A range of microbi ally rated cartridge filters are manufactured featuring the latest developments in membrane technology. Biofil™ II cartridges are based on a naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the polyethersulphone membrane provides a high strength, long life cartridge of consistently precise microbial retention.

Biofil™ II cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. Careful media selection ensures these cartridges are suited to critical particle control down to 0.04 micron ratings. Biofil™ II cartridges offer high flux rates and low differential pressures, a feature common to polyethersulphone membranes.

Biofil™ II cartridges benefit from the low non-specific protein binding characteristics of polyethersulphone membranes. They are highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics. As they will not hydrolyse, Biofil™ II cartridges are ideal for use in ultra pure water supply systems (18MΩ.cm).

Biofil™ II cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, nylon, mixed esters of cellulose or polysulphone membranes. They are suitable for applications ranging from sterile filtration, bioburden reduction and the clarification of a wide range of process liquids and end products.

Typical Applications
- Biopharmaceuticals
- Ophthalmic solutions
- Electronics and semiconductors
- Fine chemicals
- Beverages
- Pure water supply

Features and Benefits
- Guaranteed microbial ratings
- Low protein binding
- Will not hydrolyse
- Excellent chemical compatibility
- Cartridge integrity and low TOC levels
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membrane: Polyethersulphone
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length: 1 module: Biofil™ II Junior
1 module: 254mm (10”)
2 modules: 508mm (20”)
3 modules: 762mm (30”)
4 modules: 1016mm (40”)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 254mm (10”) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.04, 0.1, 0.2, 0.45, 0.65 and 1.2μm</td>
<td>0.69m² (7.4ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
120°C (248°F): 2.0bar (29psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

Operating Temperature
Maximum continuous: 85-90°C (185-194°F)

Sterilisation
In situ steam 80 x 20 minute cycles at 125°C (257°F)
Hot water 100 x 20 minute cycles at 90°C (194°F)

Extractables
Minimum total extractables. Please refer to the Biofil™ II Validation Guide.

Integrity Testing
Each Biofil™ II module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

Clean Water Flow Rates
• Typical clean water flow rate:
  A 254mm (10”) Biofil™ II single cartridge exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.

• Other solutions:
  For solutions with a viscosity greater than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.

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A Biofil™ Plus microbial rated cartridge has been developed and manufactured for the filtration of liquids within pharmaceutical, biotechnology and other critical applications.

Biofil™ Plus utilises a naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure. The cartridge’s unique built in pre-filtration membrane layer provides longer life and higher throughput.

When combined with quality all-polypropylene components and high integrity manufacturing techniques, the Biofil™ Plus filter cartridge is ideally suited to the most demanding process conditions.

Biofil™ Plus cartridges are constructed in a cleanroom under tightly controlled conditions using advanced, highly specialised machinery. Quality and consistency of product is assured by the quality control and manufacturing procedures which are in place throughout all stages of manufacture. Biofil™ Plus membrane cartridges are 100% integrity tested during manufacture by the forward flow diffusion test method.

### Typical Applications
- Biopharmaceuticals
- Fermentation
- Ophthalmic solutions
- APIs
- LVPs
- Beverages
- Pure water supply

### Features and Benefits
- Guaranteed microbial ratings
- Low protein binding
- Will not hydrolyse
- Excellent chemical compatibility
- Cartridge integrity and low TOC levels
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Pre-filter membrane: Polyethersulphone
Final membrane: Polyethersulphone
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length: 1 module: Biofil™ Plus Junior
2 modules: 508mm (20”)
3 modules: 762mm (30”)
4 modules: 1016mm (40”)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 254mm (10”) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2, 0.45 and 0.65μm</td>
<td>0.48m² (5.2 ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
120°C (248°F): 2.0bar (29psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

Operating Temperature
Maximum continuous: 85-90°C (185-194°F)

Sterilisation
In situ steam 80 x 20 minute cycles at 125°C (257°F)
Hot water 100 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables. Please refer to the Biofil™ Plus Validation Guide.

Integrity Testing
Each Biofil™ Plus module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

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

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Email: infoIN@porvairfiltration.com
Chemifil™ cartridges are manufactured using a polypropylene membrane of uniform thickness and high voids, with a homogeneous structure and controlled pore size.

Designed for the removal of sub-micron organic and inorganic particulate matter, the inherent structural stability of the membrane eliminates any risk of media migration and minimises the release of particles.

For solvent and aggressive chemical filtration applications, Chemifil™ cartridges offer a wide range of chemical compatibility. Suitable for the most demanding microfiltration applications, the cartridges can be used for the filtration of aggressive chemical solutions including acids, alkalis, solvents and etchants.

Chemifil™ cartridges can also be used for a wide range of sterile venting and gas filtration applications.

**Typical Applications**

- Fine chemicals and solvents
- Photoresists and developers
- Pure water supply systems
- Sterile process gases
- Sterile vents

**Features and Benefits**

- Guaranteed microbial ratings
- Flow ΔP characteristics
- Steam sterilisation
- Cartridge integrity and low TOC levels
- Solvents and aggressive chemicals
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture

Filter membrane: Polypropylene
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Sealing: Fusion bonding

Cartridge Dimensions (Nominal)

Diameter: 70mm (2.8")
Length:
- 1 module: Chemifil™ Junior
  - 1 module: 254mm (10")
  - 2 modules: 508mm (20")
  - 3 modules: 762mm (30")
  - 4 modules: 1016mm (40")

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 254mm (10&quot;) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 and 0.2μm</td>
<td>0.66m² (7.1ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment

Standard: Cleaned and flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings

Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure

Normal flow direction at:
- 20°C (68°F): 6.0bar (87psi)
- 80°C (176°F): 4.0bar (58psi)
- 100°C (212°F): 3.0bar (44psi)
- 120°C (248°F): 2.0bar (29psi)
- 125°C (257°F): 1.5bar (22psi)
Reverse flow direction at:
- 20°C (68°F): 2.1bar (30psi)
- 80°C (176°F): 1.0bar (15psi)
- 100°C (212°F): 0.5bar (7psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilisation

In situ steam 100 x 30 minute cycles at 125°C (257°F)

Extractables

Minimum total extractables. Please refer to the Chemifil™ Validation Guide.

Integrity Testing

Each Chemifil™ module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Procedural details are available from Pervair.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Chemifil™ 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.

Gas Flow Rates

- Typical clean air flow rate:
  A 254mm (10") Chemifil™ single cartridge exhibits the flow-ΔP characteristics indicated below.

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Fluorofil™ cartridges are manufactured using a highly hydrophobic ePTFE membrane offering exceptionally high gas flow rates at low pressure differentials. Fluorofil™ cartridges are recommended for sterile gas filtration and venting applications. The hydrophobic characteristics of the ePTFE membrane make the Fluorofil™ filter cartridge particularly suitable for wet gas sterilising applications, such as fermenter air feed.

For solvent and aggressive chemical filtration applications, these cartridges offer a wide range of chemical compatibility with high thermal stability. Suitable for the most demanding microfiltration applications, the cartridges can be used for the filtration of aggressive chemical solutions including acids, alkalis, solvents and etchants.

Typical Applications

- Sterile process gases
- Sterile vents
- Fine chemicals and solvents
- Photoresists and developers
- Pure water supply systems

Features and Benefits

- Guaranteed microbial ratings
- Bacterial spores and viruses
- Flow ΔP characteristics
- Steam sterilisation
- Cartridge integrity and low TOC levels
- Solvents and aggressive chemicals
- Full traceability
- Controlled manufacturing environment
### Specifications

#### Materials of Manufacture
- Filter membrane: ePTFE
- Membrane support: Polypropylene
- Irrigation mesh (support): Polypropylene
- Drainage layer: Polypropylene
- Inner core: Polypropylene
- Outer support: Polypropylene
- End fittings: Polypropylene
- Sealing: Fusion bonding

#### Cartridge Dimensions (Nominal)
- Diameter: 70mm (2.8”)
- Length:
  - 1 module: Fluorofil™ Junior
  - 1 module: 254mm (10”)
  - 2 modules: 508mm (20”)
  - 3 modules: 762mm (30”)
  - 4 modules: 1016mm (40”)

#### Effective Filtration Area
<table>
<thead>
<tr>
<th>Absolute Microbial Rating (in liquids)</th>
<th>Effective Filtration Area (each 254mm [10”] module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.02, 0.1, 0.2 and 0.45μm</td>
<td>0.73m² (7.8 ft²)</td>
</tr>
</tbody>
</table>

#### Cartridge Treatment
- Standard: Cleaned and flushed, without further treatment
- Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

#### Gaskets and O-Rings
- Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

#### Maximum Differential Pressure
- Normal flow direction at:
  - 20°C (68°F): 6.0bar (87psi)
  - 80°C (176°F): 4.0bar (58psi)
  - 100°C (212°F): 3.0bar (44psi)
  - 120°C (248°F): 2.0bar (29psi)
  - 125°C (257°F): 1.5bar (22psi)
- Reverse flow direction at:
  - 20°C (68°F): 2.1bar (30psi)
  - 80°C (176°F): 1.0bar (15psi)
  - 100°C (212°F): 0.5bar (7psi)

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

#### Sterilisation
- In situ steam 100 x 20 minute cycles at 135°C (275°F) to 150 x 20 minute cycles at 125°C (257°F).

### Extractables
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

### Integrity Testing
Each Fluorofil™ module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

### Gas Flow Rates
- Typical clean air flow rate: A 254mm [10”] Fluorofil™ single cartridge exhibits the flow-ΔP characteristics indicated below.

#### Clean Water Flow Rates
- Typical clean water flow rate: A 254mm [10”] Fluorofil™ single cartridge with 0.2μm microbial rating 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.
Fluorofil™ Plus cartridges are manufactured using a highly hydrophobic ePTFE membrane. The enhanced ePTFE membrane offers exceptionally high gas flow rates at low pressure differentials.

Fluorofil™ Plus cartridges are recommended for sterile gas filtration and venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Fluorofil™ Plus filter cartridge particularly suitable for wet gas sterilising applications, such as fermenter air feed.

The construction of the Fluorofil™ Plus cartridge has design features that allow higher membrane surface area, lower pressure drops and incorporates a stainless steel core for greater mechanical strength when operated at higher temperatures.

**Typical Applications**

- Sterile process gases
- Sterile vents
- Biotechnology
- Powder handling and tabletting

**Features and Benefits**

- Guaranteed microbial ratings
- Bacterial spores and viruses
- Flow ΔP characteristics
- Mechanical strength
- Steam sterilisation
- Cartridge integrity and low TOC levels
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membrane: ePTFE
Membrane support: Polypropylene
Irrigation mesh [support]: Polypropylene
Drainage layer: Polypropylene
Inner core: 316L stainless steel
Outer support: Polypropylene
End fittings: Polypropylene
Sealing: Fusion bonding

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8")
Length: 1 module: 127mm (5")
1 module: 254mm (10")
2 modules: 508mm (20")
3 modules: 762mm (30")
4 modules: 1016mm (40")

Effective Filtration Area
<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area</th>
<th>(each 254mm (10&quot;) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2μm</td>
<td>0.8m² (8.6ft²)</td>
<td></td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed, without further treatment

Gaskets and O-Rings
Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
120°C (248°F): 2.0bar (29psi)
125°C (257°F): 1.5bar (22psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

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

Sterilisation
In situ steam 500 x 30 minute cycles at 135°C (275°F).
In situ steam cycles for 200 hours at 142°C (286°F).

Extractables
Minimum total extractables. Please refer to the Fluorofil™ Plus Validation Guide.

Integrity Testing
Each Fluorofil™ Plus module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Procedural details are available from Povair.

Gas Flow Rates
- Typical clean air flow rate:
  A 254mm (10") Fluorofil™ Plus single cartridge exhibits the flow-ΔP characteristics indicated below.
**Fluorofil™ F100**

PTFE Membrane Cartridges for Solvent Filtration

Fluorofil™ F100 cartridges are manufactured using a highly hydrophobic 1 micron PTFE membrane. The enhanced PTFE membrane offers exceptionally high liquid flow rates at low pressure differentials, making Fluorofil™ F100 cartridges ideally suited to solvent filtration.

For solvent and aggressive chemical filtration applications, Fluorofil™ F100 cartridges offer a wide range of chemical compatibility with high thermal stability. Suitable for the most demanding microfiltration applications, the cartridges can be used for the filtration of aggressive chemical solutions including acids, alkalis, solvents and etchants.

**Typical Applications**
- Carbon fines removal
- Fine chemical and solvents
- Photoresists and developers

**Features and Benefits**
- Guaranteed particle retention in a liquid challenge
- Flow ΔP characteristics
- Cartridge integrity and low TOC levels
- Solvents and aggressive chemicals
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membrane: PTFE
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Sealing: Fusion bonding

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length:
1 module: 254mm (10”)
2 modules: 508mm (20”)
3 modules: 762mm (30”)
4 modules: 1016mm (40”)

Effective Filtration Area
Absolute Micron Rating (in water) | Effective Filtration Area (each 254mm (10”) module)
1.0μm (β5000, 99.98%) | 0.68m² (7.3ft²)

Cartridge Treatment
Standard: Cleaned and flushed, without further treatment
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
FEP encapsulated, Viton®, Ethylene Propylene, Nitrile or Silicone

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

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

Extractables
Minimum total extractables. Please refer to the Fluorofil™ F100 Validation Guide.

Integrity Testing
Each Fluorofil™ F100 module of every cartridge is individually integrity tested using the Reverse Bubble Point Test, which correlates to the particle retention rating determined by the modified OSU F-2 Single Pass Challenge Test. Non-destructive integrity testing, using the Reverse Bubble Point Test, can be performed by the end user. Procedural details are available from Povair.

Clean Water Flow Rates
• Typical clean water flow rate:
  A 254mm (10”) Fluorofil™ F100 single cartridge with 1.0μm particle retention rating 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.
Microbially rated cartridge filters featuring the latest developments in membrane technology, Hydrofil™ HT cartridges, are based on a naturally hydrophilic nylon membrane. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the nylon membrane provides a high strength, long life cartridge of consistently precise particle retention across a wide range of particle sizes.

Hydrofil™ cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. Careful media selection ensures that Hydrofil™ cartridges are very suited to critical particle control down to 0.03 micron ratings. These cartridges offer high flux rates and low differential pressures, a feature common to nylon membranes.

Hydrofil™ cartridges benefit from high protein binding characteristics of nylon membranes. They are highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics.

Hydrofil™ cartridges are ideal for use in ultra pure water supply systems (18MΩ.cm).

Hydrofil™ cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, mixed esters of cellulose or polysulphone membranes. They are suitable for a range of applications including sterile filtration, bioburden reduction and the clarification of a wide range of process liquids and end products.

### Typical Applications
- Biopharmaceuticals
- Electronics and semiconductors
- Fine chemicals
- Beverages
- Pure water supply

### Features and Benefits
- Guaranteed microbial ratings
- Excellent chemical compatibility
- Cartridge integrity and low TOC levels
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
- Filter membrane: Nylon 6.6
- Membrane support: Polypropylene
- Irrigation mesh (support): Polypropylene
- Drainage layer: Polypropylene
- Inner core: Polypropylene
- Outer support: Polypropylene
- End fittings: Polypropylene
- Support ring: Stainless steel

Cartridge Dimensions (Nominal)
- Diameter: 70mm (2.8")
- Length:
  - 1 module: 254mm (10”)
  - 2 modules: 508mm (20”)
  - 3 modules: 762mm (30”)
  - 4 modules: 1016mm (40”)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 254mm (10&quot;) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.03, 0.1, 0.2 and 0.45μm</td>
<td>0.69m² (7.4ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
- Standard: Cleaned and flushed with pyrogen-free water
- Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
- FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
- Normal flow direction at:
  - 20°C (68°F): 6.0bar (87psi)
  - 80°C (176°F): 4.0bar (58psi)
  - 100°C (212°F): 3.0bar (44psi)
  - 120°C (248°F): 2.0bar (29psi)
- Reverse flow direction at:
  - 20°C (68°F): 2.1bar (30psi)
  - 80°C (176°F): 1.0bar (15psi)
  - 100°C (212°F): 0.5bar (7psi)

Operating Temperature
- Maximum continuous: 60°C (140°F)

Sterilisation
- In situ steam 30 x 25 minute cycles at 125°C (257°F)

Extractables
- Minimum total extractables. Please refer to the Hydrofil™ Validation Guide.

Integrity Testing
- Each Hydrofil™ module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HiMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 254mm (10") Hydrofil™ 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.

<table>
<thead>
<tr>
<th>Differential Pressure (mbar)</th>
<th>Flow Rate (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>200</td>
<td>5</td>
</tr>
<tr>
<td>400</td>
<td>10</td>
</tr>
<tr>
<td>600</td>
<td>25</td>
</tr>
</tbody>
</table>

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  Tel: +91 22 25 976464 / +91 22 25 976465
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Hydrofil™ Plus
dual nylon 6.6 layer membrane cartridge filters

Hydrofil™ Plus microbial rated cartridges have been developed and manufactured for the filtration of liquids in the pharmaceutical, biotechnology and other critical applications. Hydrofil™ Plus utilizes a naturally hydrophilic Nylon 6.6 membrane with a mirrored asymmetric pore structure. The cartridge’s unique built in pre-filtration membrane layer provides longer life and higher throughput.

When combined with quality all-polypropylene components and high integrity manufacturing techniques, the Hydrofil™ Plus filter cartridge is ideally suited to the most demanding process conditions.

Hydrofil™ Plus cartridges are constructed in a cleanroom under tightly controlled conditions using advanced, highly specialised machinery. Quality and consistency of product is assured by the quality control and manufacturing procedures, which are in place throughout all stages of manufacture.

Hydrofil™ Plus membrane cartridges are 100% integrity tested during manufacture by the forward flow diffusion test method.

Typical Applications
- Biopharmaceuticals
- Fermentation
- APIs
- LVPs
- Beverages
- Pure water supply

Features and Benefits
- Guaranteed microbial ratings
- Excellent chemical compatibility
- Cartridge integrity and low TOC levels
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

Ordering Information: For ordering information please go to page 207.

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Sterilisation

Materials of Manufacture
Pre-filter membrane: Nylon
Final membrane: Nylon
Filter membrane: Nylon
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8“)
Length:
1 module: 254mm (10“)
2 modules: 508mm (20“)
3 modules: 762mm (30“)
4 modules: 1016mm (40“)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 254mm (10&quot;) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2μm</td>
<td>0.5m² (5.38ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
120°C (248°F): 2.0bar (29psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

Operating Temperature
Maximum continuous: 60°C (140°F)

Sterilisation
In situ steam 30 x 25 minute cycles at 125°C (257°F)

Extractables
Minimum total extractables. Please refer to the Hydrofil™ Validation Guide.

Integrity Testing
Each Hydrofil™ Plus module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

Clean Water Flow Rates
• Typical clean water flow rate:
A 254mm (10") Hydrofil™ Plus 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.

![Flow Rate vs Differential Pressure Graph]

Absolute Microbial Effective Filtration Area Rating (each 254mm (10") module)
0.2μm 0.5m² (5.38ft²)

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Vinofil™ membrane cartridges are specifically designed for wine and beer filtration, as a final filter for cold biological stabilisation. Vinofil™ cartridges utilise a double layer of naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure, providing graded filtration throughout its depth, resulting in higher throughputs and long service life. When combined with quality all-polypropylene components and high integrity manufacturing techniques, the Vinofil™ filter cartridge is ideally suited to the most demanding process conditions.

Vinofil™ cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. Careful media selection ensures that Vinofil™ cartridges are suited to critical particle control down to 0.2 micron ratings. These cartridges offer high flux rates and low differential pressures, a feature common to polyethersulphone membranes.

Vinofil™ cartridges benefit from the low binding characteristics of polyethersulphone membranes. They are highly resistant to integrity failure caused by steam sterilisation and have excellent compatibility with CIP sterilising agents.

As a consequence, Vinofil™ cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, nylon, mixed esters of cellulose or polysulphone membranes. They are suitable for a range of applications including sterile filtration, stabilisation and the clarification of a wide range of beverages.

Typical Applications
- Wine and sparkling wine
- Beer
- Mineral water and soft drinks
- Process water supply

Features and Benefits
- Guaranteed microbial ratings
- Low binding and fouling
- Will not hydrolyse
- Excellent chemical compatibility
- Cartridge integrity and low TOC levels
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membranes: Dual Polyethersulphone
Membrane support: Polypropylene
Irrigation mesh [support]: Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length:
1 module (short): 125mm (5”)
1 module: 254mm (10”)
2 modules: 508mm (20”)
3 modules: 762mm (30”)
4 modules: 1016mm (40”)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating</th>
<th>Effective Filtration Area (each 254mm (10”) module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2, 0.45 and 0.65µm</td>
<td>0.48m² (5.2ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed with pyrogen-free water

Gaskets and O-Rings
FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® or Nitrile

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
120°C (248°F): 2.0bar (29psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

Operating Temperature
Maximum continuous: 85-90°C (185-194°F)

Sterilisation
In situ steam 80 x 20 minute cycles at 125°C (257°F)
Hot water 100 x 20 minute cycles at 85-90°C (185-194°F)

Extractables
Minimum total extractables. Please refer to the Vinofil™ Validation Guide.

Integrity Testing
Each Vinofil™ module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 254mm (10”) Vinofil™ 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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Microfil™ Junior

Absolute Rated Pleated Glass Fibre Cartridge Filters for Small-Scale Applications

A range of absolute rated cartridge filters are designed for retrofitting into existing junior-style housings.

Featuring the latest developments in borosilicate glass fibre filter media technology, Microfil™ Junior cartridges are constructed from robust glass fibre and polypropylene filtration layers, offering removal ratings from 0.5 to 5 micron absolute.

Microfil™ Junior cartridges are suitable for absolute removal of unwanted particulates and for pre-filtration to membrane filters.

Microfil™ Junior cartridges incorporate a polypropylene pre-filtration layer, combined with a high dirt capacity glass fibre media, resulting in longer service life, improved operating costs and smaller process footprint.

The Microfil™ Junior filter cartridges are highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics.

They are suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

Available in J-style with internal O-ring, S-style with moulded flange seal and L-style with 4-lug locking end cap with double external O-rings.

Typical Applications

- Small-scale pharmaceuticals and bioprocessing
- Pilot-scale studies
- Batch processing

Features and Benefits

- Zeta potential
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Full traceability
- Controlled manufacturing environment

Ordering Information: For ordering information please go to page 208.
Specifications

Materials of Manufacture
Filter media: Glass fibre
Pre-filtration layer: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 56mm [2.2”]
Length: 77.5mm [2.5”]
136mm [5”]

Effective Filtration Area
<table>
<thead>
<tr>
<th>Absolute Removal Rating</th>
<th>Effective Filtration Area (for 5” cartridge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5, 0.8, 1.0, 2.0</td>
<td>0.15m² (1.6ft²)</td>
</tr>
<tr>
<td>and 5.0μm</td>
<td></td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned without further treatment
Flushed: Flushed with pyrogen-free water

Gaskets and O-Rings
J-style: Silicone (other materials are available on request)
S-style: Not supplied
L-style: Silicone (other materials are available on request)

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0 bar [87psi]
80°C (176°F): 4.0 bar [58psi]
100°C (212°F): 3.0 bar [44psi]
120°C (248°F): 2.0 bar [29psi]
Reverse flow direction at:
20°C (68°F): 2.1 bar [30psi]
80°C (176°F): 1.0 bar [15psi]
100°C (212°F): 0.5 bar [7psi]

Operating Temperature
Maximum continuous: 80°C [176°F]

Sterilisation
J-style: In situ steam 70 x 25 minute cycles at 130°C (266°F)
S-style: Autoclave 100 x 25 minute cycles at 125°C (257°F)
L-style: In situ steam 70 x 25 minute cycles at 130°C (266°F)

Extractables
Minimum total extractables. Please refer to the MicrofilTM Validation Guide.

Integrity Testing
Microfil™ Junior filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate:
  A 136mm [5"] Microfil™ Junior 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.

<table>
<thead>
<tr>
<th>Clean Water Flow Rate (l/min)</th>
<th>Differential Pressure (mbarg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>6</td>
<td>120</td>
</tr>
<tr>
<td>8</td>
<td>160</td>
</tr>
<tr>
<td>10</td>
<td>200</td>
</tr>
</tbody>
</table>

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India, Mumbai Division
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A range of absolute rated cartridge filters are designed for retrofitting into existing junior-style housings. Featuring the latest developments in meltblown polypropylene filter media technology, Polyfil™ Junior cartridges are based on a robust all polypropylene construction, offering removal ratings from 0.5 to 5 micron absolute.

Polyfil™ Junior cartridges are suitable for absolute removal of unwanted particulates and for pre-filtration to membrane filters. The graded multi-layer polypropylene media provide pre-filtration of the process fluid prior to the absolute rated final layer. The unique design of the Polyfil™ Junior cartridges helps to achieve lower running costs and a smaller process footprint.

Polyfil™ Junior cartridges are resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics. They are suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

Available in J-style with internal O-ring, S-style with moulded flange seal and L-style with 4-lug locking end cap with double external O-rings.

Typical Applications
- Small-scale pharmaceuticals
- Ophthalmic solutions
- Electronics and semiconductors
- Small-scale fine chemicals
- Pilot-scale studies
- Inks and coatings

Features and Benefits
- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Environmentally friendly
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter media: Polypropylene
Support layers: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 56mm (2.2”)
Length: 77.5mm (2.5”)
136mm (5”)

Effective Filtration Area
Up to 0.15m² (1.6ft²) per 136mm module (depending on pore rating)

Cartridge Treatment
Standard: Cleaned without further treatment
Flushed: Flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings
J-style: Silicone (other materials are available on request)
S-style: Not supplied
L-style: Silicone (other materials are available on request)

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0 bar [87psi]
80°C (176°F): 4.0 bar [58psi]
100°C (212°F): 3.0 bar [44psi]
120°C (248°F): 2.0 bar [29psi]
125°C (257°F): 1.5 bar [22psi]
Reverse flow direction at:
20°C (68°F): 2.1 bar [30psi]
80°C (176°F): 1.0 bar [15psi]
100°C (212°F): 0.5 bar [7psi]

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

Sterilisation
J-style: In situ steam 70 x 25 minute cycles at 125°C (257°F)
S-style: Autoclave 100 x 25 minute cycles at 125°C (257°F)
L-style: In situ steam 70 x 25 minute cycles at 125°C (257°F)

Extractables
Minimum total extractables. Please refer to the Polyfil™ II Validation Guide.

Integrity Testing
Polyfil™ Junior filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from Porvair.

Clean Water Flow Rates
- Typical clean water flow rate: A 136mm (5”) Polyfil™ Junior 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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India, Mumbai Division
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Email: infoIN@porvairfiltration.com
A range of microbially rated cartridge filters are designed for retrofitting into existing junior-style housings. Biofil™ Junior cartridges are based on a naturally hydrophilic polyethersulphone membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the polyethersulphone membrane provides a high strength, long life cartridge of consistently precise microbial retention.

Biofil™ Junior cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. Careful media selection ensures that Biofil™ Junior cartridges are suited to critical particle control down to 0.04 micron ratings. These cartridges offer high flux rates and low differential pressures, a feature common to polyethersulphone membranes.

Biofil™ Junior cartridges benefit from the low non-specific protein binding characteristics of polyethersulphone membranes. They are highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics. As they will not hydrolyse, Biofil™ Junior cartridges are ideal for use in ultra pure water supply systems (18MΩ.cm).

Biofil™ Junior cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, nylon, mixed esters of cellulose or polysulphone membranes. They are suitable for applications ranging from sterile filtration, bioburden reduction to the clarification of process liquids and end products.

Available in J-style with internal O-ring, S-style with moulded flange seal and L-style with 4-lug locking end cap with double external O-rings.

Typical Applications
- Small-scale biopharmaceuticals
- Ophthalmic solutions
- Electronics and semiconductors
- Small-scale fine chemicals
- Pilot-scale studies
- Point-of-use water supply

Features and Benefits
- Guaranteed removal ratings
- Low protein binding
- Will not hydrolyse
- Excellent chemical compatibility
- Cartridge integrity and low TOC levels
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membrane: Polyethersulphone
Membrane support: Polypropylene
Irrigation mesh (support): Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Support ring: Stainless steel

Cartridge Dimensions (Nominal)
Diameter: 56mm (2.2”)
Length: 77.5mm (2.5”)
136mm (5”)

Effective Filtration Area
Absolute Microporous Rating: 0.04, 0.1, 0.2, 0.45, 0.65 and 1.2μm
Effective Filtration Area (for each 5” cartridge): 0.19m² (2.05ft²)

Cartridge Treatment
Standard: Cleaned and flushed with pyrogen-free water
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Cartridge Dimensions (Nominal)
Diameter: 56mm (2.2”)
Length: 77.5mm (2.5”)
136mm (5”)

Gaskets and O-Rings
J-style: Silicone (other materials are available on request)
S-style: Not supplied
L-style: Silicone (other materials are available on request)

Maximum Differential Pressure
Normal flow direction at:
20°C (68°F): 6.0bar (87psi)
80°C (176°F): 4.0bar (58psi)
100°C (212°F): 3.0bar (44psi)
120°C (248°F): 2.0bar (29psi)
Reverse flow direction at:
20°C (68°F): 2.1bar (30psi)
80°C (176°F): 1.0bar (15psi)
100°C (212°F): 0.5bar (7psi)

Operating Temperature
Maximum continuous: 85-90°C (185-194°F)

Sterilisation
J-style: In situ steam 70 x 25 minute cycles at 125°C (257°F)
S-style: Autoclave 100 x 25 minute cycles at 125°C (257°F)
L-style: In situ steam 70 x 25 minute cycles at 125°C (257°F)

Extractables
Minimum total extractables. Please refer to the Biofil™ II Validation Guide.

Integrity Testing
Each Biofil™ Junior module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

Gas Flow Rates
- Typical clean water flow rate:
  A 136mm (5”) Biofil™ Junior 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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Fluorofil™ Junior cartridges are manufactured using a highly hydrophobic ePTFE membrane and are designed for retrofitting into existing Junior-style housings. The enhanced ePTFE membrane offers exceptionally high gas flow rates at low pressure differentials (see graph).

The Junior range is available in two formats: J-style, a single open-ended element with a single internal O-ring seal on the downstream end cap and S-style, a single open-ended element incorporating an integral flange on the downstream end cap.

Fluorofil™ Junior cartridges are recommended for small-scale sterile gas filtration and venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Fluorofil™ Junior filter cartridge particularly suitable for wet gas sterilising applications, such as small-scale fermenter air feed.

For small-scale solvent and aggressive chemical filtration applications, Fluorofil™ Junior cartridges offer a wide range of chemical compatibility with high thermal stability. Suitable for the most demanding microfiltration applications, the cartridges can be used for the small-scale filtration of aggressive chemical solutions including acids, alkalis, solvents and etchants.

Fluorofil™ Juniors can be used in scale-up bench-top experiments and pilot plant evaluations to confirm suitability in new process applications.

Available in J-style with internal O-ring, S-style with moulded flange seal and L-style with 4-lug locking end cap with double external O-rings.

**Typical Applications**
- Sterile vents
- Small-scale sterile process gases
- Small-scale fine chemicals and solvents
- Small-scale photoresists and developers

**Features and Benefits**
- Zeta potential
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Full traceability
- Controlled manufacturing environment

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**Ordering Information:** For ordering information please go to page 208.

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**US, Ashland Division**
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Email: infoUS@porvairfiltration.com
**Specifications**

**Materials of Manufacture**
- Filter membrane: ePTFE
- Membrane support: Polypropylene
- Irrigation mesh (support): Polypropylene
- Drainage layer: Polypropylene
- Inner core: Polypropylene
- Outer support: Polypropylene
- End fittings: Polypropylene
- Sealing: Fusion bonding
- Internal adaptor support ring: Stainless steel

**Cartridge Dimensions (Nominal)**
- Diameter: 56mm (2.2”)
- Lengths: 77.5mm (2.5”)
  136mm (5”)

**Effective Filtration Area**
- Absolute Microbial Rating (in liquids) | Effective Filtration Area (for 5” cartridge)
  - 0.2μm | 0.19m² (2.05ft²)

**Cartridge Treatment**
- Standard: Cleaned and flushed, without further treatment
- Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

**Gaskets and O-Rings**
- J-style: Silicone (other materials are available on request)
- S-style: Not supplied
- L-style: Silicone (other materials are available on request)

**Maximum Differential Pressure**
- Normal flow direction at:
  - 20°C (68°F): 6.0bar (87psi)
  - 80°C (176°F): 4.0bar (58psi)
  - 100°C (212°F): 3.0bar (44psi)
  - 120°C (248°F): 2.0bar (29psi)
  - 125°C (257°F): 1.5bar (22psi)

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

**Sterilisation**
- Autoclave 70 x 25 minute cycles at 135°C (275°F)

**Extractables**
- Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

**Integrity Testing**
- Each Fluorofil™ Junior cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

**Gas Flow Rates**
- Typical clean air flow rate: A 136mm (5”) Fluorofil™ Junior cartridge exhibits the flow-ΔP characteristics indicated below.

**Clean Water Flow Rates**
- Typical clean water flow rate: A 136mm (5”) Fluorofil™ Junior cartridge (J-style) with 0.2μm microbial rating 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.
Ventafil™ cartridges are manufactured using a highly hydrophobic ePTFE membrane and are designed for autoclave venting. The enhanced ePTFE membrane offers exceptionally high gas flow rates at low pressure differentials.

Ventafil™ cartridges are designed with a ½” BSP male thread for autoclave and small tank venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Ventafil™ filter cartridge particularly suitable for rapid vacuum break in autoclaves.

Typical Applications
- Autoclave vents
- Sterile product storage vessels

Features and Benefits
- Guaranteed microbial ratings in a liquid challenge
- Bacterial spores and viruses
- Flow ΔP characteristics
- Steam sterilisation
- Cartridge integrity and low TOC levels
- Full traceability
- Controlled manufacturing environment
Specifications

Materials of Manufacture
Filter membrane: ePTFE
Membrane support: Polypropylene
Irrigation mesh [support]: Polypropylene
Drainage layer: Polypropylene
Inner core: Polypropylene
Outer support: Polypropylene
End fittings: Polypropylene
Sealing: Fusion bonding

Cartridge Dimensions (Nominal)
Diameter: 70mm (2.8”)
Length: 64mm (2.5”)
136mm (5”)

Effective Filtration Area

<table>
<thead>
<tr>
<th>Absolute Microbial Rating (in liquids)</th>
<th>Effective Filtration Area (for 5” cartridge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2μm</td>
<td>0.37m² (4.0 ft²)</td>
</tr>
</tbody>
</table>

Cartridge Treatment
Standard: Cleaned and flushed, without further treatment
Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18 MΩ·cm

Adaptor and O-Ring
Silicone (other materials are available on request)
½” BSP male thread

Maximum Differential Pressure
Normal flow direction at:
- 20°C (68°F): 6.0bar (87psi)
- 80°C (176°F): 4.0bar (58psi)
- 100°C (212°F): 3.0bar (44psi)
- 120°C (248°F): 2.0bar (29psi)
- 125°C (257°F): 1.5bar (22psi)

Sterilisation
In situ steam 70 x 25 minute cycles at 135°C (275°F)

Extractables
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

Integrity Testing
Each Ventafil™ cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Procedural details are available from Porvair.

Clean Air Flow Rates
- Typical clean air flow rate:
  A 136mm (5”) Ventafil™ cartridge exhibits the flow-ΔP characteristics indicated below.

![Clean Air Flow Rate Graph]

Clean Air Flow Rates
- Vacuum break application:
  If the initial vacuum is at -980 mbarg, the time required before the vacuum break conditions required to safely open the autoclave door (at -20mbarg) are achieved, is indicated below.

![Time Required to Reach Vacuum Break Graph]
The Compfil™ DF filter is a wound depth, with stainless steel end caps, inner and outer guard. Consisting of a 3 dimensional borosilicate depth media, the DF achieves a void volume of 95%, ensuring a high containment capacity at high flow rates and low differential pressure. During operation, the filter achieves a retention rate of > 99.99998% related to 0.01 µm.

The Compfil™ DF is manufactured in accordance with cGMP requirements and to DIN EN ISO:9001. All components meet the FDA requirements for contact with food in accordance with the CFR requirements (Code of Federal Regulations) title 21.

**Typical Applications**
- Aseptic packing
- Biotechnology
- Breweries
- Chemical Industry
- Dairies
- Fermentation processes
- Food and beverage
- Pharmaceutical
- Water treatment systems

**Features and Benefits**
- Robust construction
- Non fibre releasing element
- Absolute retention rate of 99.99998% related to 0.01µm
- Three-dimensional borosilicate depth filter media
- Biologically and chemically inert
- 100 sterilisation cycles guaranteed
- Available in 13 sizes
- Stainless steel core and end-caps
- Meets industry standards
Specifications

Materials of Manufacture
Filter media: Borosilicate
Membrane support: Polyester
Inner core: Stainless steel 1.4301/304.
Outer core: Stainless steel 1.4301/304.
End caps: Stainless steel 1.4301/304.
Bonding materials: Silicone
O-rings: Silicone (standard), Buna N, EPDM, Viton®

Filtration Surface
494cm² (5.317ft²) per 10” element

Maximum Differential Pressure
Sbar (73psi), independent of operation pressure of flow direction

Operating Temperature
-20 to 200 ºC (-4 to 392ºF)

Sterilisation
DF filter elements are guaranteed for 100 sterilisation cycles without loss of integrity.
In-line sterilisation with slow speed saturated steam:
max. 121ºC (250°F) for 30 minutes
max. 131ºC (268°F) for 20 minutes
max. 141ºC (286°F) for 10 minutes
Autoclave:
125ºC (257°F) for 30 minutes

Bacterial Retention
LRV > 7/cm² [1.09in²] for T1 Coliform

Absolute Retention Rate
99.99998 % related to 0.01µm

Dimensions

<table>
<thead>
<tr>
<th>Element size</th>
<th>A mm (in)</th>
<th>B mm (in)</th>
<th>C mm (in)</th>
<th>D mm (in)</th>
<th>CF Flange</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/20</td>
<td>104 [4.09]</td>
<td>14 [0.55]</td>
<td>25.1 [1]</td>
<td>52 [2.05]</td>
<td>0.19</td>
</tr>
<tr>
<td>05/25</td>
<td>128 [5.03]</td>
<td>14 [0.55]</td>
<td>25.1 [1]</td>
<td>62 [2.44]</td>
<td>0.32</td>
</tr>
<tr>
<td>05/30</td>
<td>128 [5.03]</td>
<td>16 [0.63]</td>
<td>50.8 [2]</td>
<td>86 [3.39]</td>
<td>0.46</td>
</tr>
<tr>
<td>07/30</td>
<td>180 [7.09]</td>
<td>16 [0.63]</td>
<td>50.8 [2]</td>
<td>86 [3.39]</td>
<td>0.68</td>
</tr>
</tbody>
</table>

Flow rates

<table>
<thead>
<tr>
<th>Flow rate of a 10” SRF element at 1bar.</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differential pressure mbar</td>
<td>0</td>
<td>3.6</td>
<td>7.2</td>
<td>10.8</td>
<td>14.4</td>
<td>18.0</td>
<td>21.6</td>
<td>25.2</td>
</tr>
<tr>
<td>Volume flow m³/h</td>
<td>0</td>
<td>100</td>
<td>200</td>
<td>300</td>
<td>400</td>
<td>500</td>
<td>600</td>
<td>700</td>
</tr>
</tbody>
</table>

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Compfil™ AC activated carbon filters are designed for the removal of oil vapour and other hydrocarbons.

These filter elements consist of a two-stage filtration process. All particles are retained within the nanofibre depth filter media, while the activated carbon adsorbs all oil vapours and gaseous hydrocarbons. The filter can achieve residual oil content of <0.003 mg/m³ with appropriate pre-filtration.

**Typical Applications**
- Chemical and petrochemical
- Pharmaceutical
- Breathing air
- Prefiltration of sterile filters
- Filling machines
- Food and beverage
- Packing machines
- Industrial processes

**Features and Benefits**
- High load of activated carbon
- Flow distribution at the air inlet
- Embedded activated carbon
- Depth filter stage of binder-free woven nanofibres

Ordering Information: For prices including volume discounts please enquire.

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Specifications

Materials of Manufacture
Filter membranes: Borosilicate nanofibres
Membrane support: Polyamide
Support sleeves: Stainless steel 1.4301/304
Adsorption stage: Ground activated carbon embedded in PUR foam
Bonding: Polyurethane
O-rings: Perbunan®, silicone free and free from parting compounds
Support ring: Stainless steel 1.4301/304

Operating Temperature
10 to 40°C (50 to 104°F)

Retention Rate
Residual oil content of < 0.003 mg/m³, with pre-filtration

Recommended Pre-Filtration
Residual oil content < 0.01 mg/m³, e.g. by sub-nanofilter IA-S

Initial differential pressure at nominal flow:
0.07 bar (1.02 psi)

Adsorption efficiency of AK:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethane</td>
<td>Slight</td>
</tr>
<tr>
<td>Toluene</td>
<td>Very good</td>
</tr>
<tr>
<td>Acetic acid</td>
<td>Very good</td>
</tr>
<tr>
<td>Methanol</td>
<td>Good</td>
</tr>
<tr>
<td>Acetone</td>
<td>Good</td>
</tr>
<tr>
<td>Isopropyl ether</td>
<td>Very good</td>
</tr>
<tr>
<td>Methyl acetate</td>
<td>Good</td>
</tr>
<tr>
<td>Sulphuric acid</td>
<td>Very good</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>Poor</td>
</tr>
<tr>
<td>Chlorine</td>
<td>Good</td>
</tr>
<tr>
<td>Freon</td>
<td>Poor</td>
</tr>
<tr>
<td>Ammonia</td>
<td>Poor</td>
</tr>
<tr>
<td>Citrus fruits</td>
<td>Very good</td>
</tr>
<tr>
<td>Perfumes</td>
<td>Very good</td>
</tr>
</tbody>
</table>

Adsorption filter (oil free / odourless)
1. Adsorption stage
2. Adsorption stage
Compfil™ IA filters are high performance industrial air filters, designed to remove water and oil aerosols as well as particulates from compressed air and gas streams.

Thanks to the unique combination of binder-free, non-woven nanofibre filter and pleating technology, these high performance filters can achieve a 70% reduction in energy costs, as well as improve filtration performance.

The nanofibre material is naturally oleophobic. Oil and water are actively rejected, so the differential pressure drop and therefore operational costs are reduced to a minimum compared with a conventional filter element.

Typical Applications
- Chemical and petrochemical industry
- Pharmaceutical industry
- Food and beverage
- Plastic industry
- Process filtration
- Instrument air

Features and Benefits
- Binder free, thermally welded nanofilter media
- Oleophobic filter media
- Pleated media filter
- Support sleeves of stainless steel (316L)
- 70% less energy costs
Specifications

Materials of Manufacture

Filter media: Binder-free nanofibres
Support sleeves inner/outer: Stainless steel 1.4301/304.
Pre-and after filter medium: Pleated Cerex
Outer foam sock:
- HT/CR sock up to 120°C (248°F)
- HT/NX sock up to 180°C (356°F)
Bonding: Polyurethane
End caps: Stainless steel
O-rings: Perbunan®, Silicone free and free from parting compounds

Maximum Differential Pressure
5 bar at 20°C (72.5 psi at 68°F), independent from operation pressure

<table>
<thead>
<tr>
<th>Type</th>
<th>Residual oil content at 3 mg/m³</th>
<th>Residual oil content at 10 mg/m³</th>
<th>Oil retention rate acc. to ISO 12500-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA-F</td>
<td>&lt;0.1 ppm</td>
<td>0.2 ppm</td>
<td>99.6%</td>
</tr>
<tr>
<td>IA-M</td>
<td>&lt;0.03 ppm</td>
<td>0.03 ppm</td>
<td>99.7%</td>
</tr>
<tr>
<td>IA-S</td>
<td>&lt;0.01 ppm</td>
<td>0.02 ppm</td>
<td>99.8%</td>
</tr>
</tbody>
</table>

Operating Temperature

Maximum continuous: 85-90°C (185-194°F)

Start-up Differential Pressure

- IA-F: 0.04 bar (0.58 psi)
- IA-M: 0.08 bar (1.16 psi)
- IA-S: 0.09 bar (1.31 psi)

Retention rate at a particle size of 0.01 µm (ISO 8573-1)

- IA-F: 99.999%
- IA-M: 99.99998%
- IA-S: 99.99999%

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The Compfil™ VY polyethylene pre-filters are designed to retain particles from compressed air and gas streams.

Compfil™ VY filters are made of a sintered polyethylene filter media and guarantee absolute retention rates.

By using various filtration mechanisms, such as direct impact and sieve effect, the filter can retain contaminants down to 25µm.

Typical Applications

- Machinery industry
- Chemical and petrochemical industry
- Pharmaceutical industry
- Food and beverage industry
- Plastics industry
- Process industry
- Instrumentation and control air
- Climate control

Features and Benefits

- Robust construction
- Contaminant removal
- Large filter surface available
- High volume
- Wide operating temperature

Ordering Information: For prices including volume discounts please enquire.

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Email: infoUS@porvairfiltration.com
Specifications

**Materials of Manufacture**
- **Filter media:** Pure, highly molecular polyethylene
- **Membrane support:** Polyester
- **End caps:** Aluminium
- **Bonding materials:** Perbunan®
  - Silicone free and free from parting compounds

**Flow rates**

**Maximum Differential Pressure**
- 2 bar at 20°C (29 psi at 68°F), independent from operating pressure

**Initial differential pressure at nominal flow**
- 0.03 bar (0.44 psi)

**Retention Rate**
- 100% in gases

**Element type** | Correction factor filter surface
---|---
02/05 | 0.08
03/05 | 0.10
03/10 | 0.12
04/10 | 0.17
04/20 | 0.19
05/20 | 0.25
05/25 | 0.32
07/25 | 0.47
07/30 | 0.68
10/30 | 1.0
15/30 | 1.55
20/30 | 2.10
30/30 | 3.20
30/50 | 5.65

```
<table>
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<tr>
<th>Volume flow (Nm³/h)</th>
<th>SCFM</th>
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<tr>
<td>0</td>
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<td>20</td>
<td>62.5</td>
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<td>125</td>
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<td>60</td>
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<td>100</td>
<td>312.5</td>
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<table>
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<th>Differential pressure (bar)</th>
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<td>0</td>
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<tr>
<td>0.03</td>
<td>20</td>
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<tr>
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<td>40</td>
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<tr>
<td>0.2</td>
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</tr>
<tr>
<td>0.3</td>
<td>80</td>
</tr>
</tbody>
</table>
```

Contact Information:

**China, Wuhan Division**
- Tel: +86 (0)712 2878955
- Email: infoCN@porvairfiltration.com

**India, Mumbai Division**
- Tel: +91 22 25 976464 / +91 22 25 976465
- Email: infoIN@porvairfiltration.com
Compfil™ UF filters are high performance depth filters, designed to remove water and oil aerosols as well as particulates from compressed air and gas streams.

Thanks to the unique combination of binder-free, non-woven ultra fibre filter media and pleating technology, these high performance filters can achieve a 70% reduction in energy costs with improved filtration, when compared with a conventional element.

The ultra fibre material is naturally oleophobic. Oil and water are actively rejected, minimising pressure drop and operating costs.

**Typical Applications**
- Chemical and petrochemical industry
- Pharmaceutical industry
- Food and beverage
- Plastic industry
- Process filtration
- Instrument air

**Features and Benefits**
- Binder free, thermally welded ultra filter media
- Oleophobic filter media
- Pleated media filter
- Stainless steel inner and outer core
- 70% less energy costs
Specifications

Materials of Manufacture

Filter media: Binder-free ultra fibres of borosilicate
Support sleeves inner/outer: Stainless steel 304
Pre-and after filter medium: Pleated Cerex
Outer foam sock: Blue polyurethane foam sock up to 80°C (176°F)
HT/CR sock up to 120°C (248°F)
HT/NX sock up to 180°C (356°F)
Bonding: Polyurethane
End caps: Aluminium
O-rings: Perbunan®, silicone free and free from parting compounds

Maximum Differential Pressure

Sbar at 20°C (72.5psi at 68°F), independent from operation pressure

Start-up Differential Pressure

UF-F: 0.04bar (0.58psi)
UF-M: 0.08bar (1.16psi)
UF-S: 0.09bar (1.31psi)

Retention rate at a particle size of 0.01µm

UF-F: 99.999%
UF-M: 99.99998%
UF-S: 99.99999%

<table>
<thead>
<tr>
<th>Type</th>
<th>Residual oil content at 3 mg/m³</th>
<th>Residual oil content at 10 mg/m³</th>
<th>Oil retention rate acc. to ISO 12500-1</th>
</tr>
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<tbody>
<tr>
<td>UF-F</td>
<td>&lt;0.1 ppm</td>
<td>0.2 ppm</td>
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<td>UF-M</td>
<td>&lt;0.03 ppm</td>
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<table>
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<td>05/25</td>
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<td>07/25</td>
<td>0.47</td>
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<td>30/30</td>
<td>3.28</td>
</tr>
<tr>
<td>30/50</td>
<td>5.90</td>
</tr>
</tbody>
</table>
A full range of stainless steel industrial and sanitary housings are available from 10 to 20bar (145-290psi), with both single and multi-element housings to suit every application. The housings have in-line BSP port connections for ease of installation. Tri-clover and weld connections are available.

A special range of high-pressure 350bar (5,076psi) rated housings are also available on request. Housings manufactured from other alloys and made to other design codes are also available on request, please contact us for further details.
A full range of stainless steel industrial and sanitary housings are available from 10 to 20 bar (145-290 psi), with both single and multi-element housings to suit every application. The housings have in-line BSP port connections for ease of installation. Tri-clover and weld connections are available.

Our current range of filter housings are available in rounds from 1-30.

A special range of high-pressure 350 bar (5,076 psi) rated housings are available on request.

Housings manufactured from other alloys and made to other design codes are available on request. Please contact us for further details.

Typical Applications
- Metal filter elements
- Disposable filter cartridges

Features and Benefits
- Resistant to high temperatures and corrosive environments
- Suitable for aggressive air and liquid filtration applications
- Inherent strength for long service life in arduous applications
- Controlled pore size, ensures optimum repeat performance
Optional Material and Surface Treatments

- Stainless steel 316L
- Hastelloy®
- Internal welds ground flush and smooth
- Electro polished
- Mirror finished
- Surface finish 240 grit
- Various coatings

Control Systems

Some of the control options available are:

- Solenoid operated valve
- Control timer

Coded Vessels

Vessels can be supplied to BS5500, ASME VIII U'Stamp, ADM-TÜV. Other standards are available upon request.

The systems are designed and built to individual customer’s specifications and needs. A tailored pulsed jet supply system is vital to a good performance of the filter assembly.
High-pressure filter housings are designed for high efficiency filtration of gases and liquids in critical applications.

Available in alternative materials such as Monel® or Hastelloy® for applications that require a higher level of resistance to aggressive gases and liquids. BSPP pipe connections as standard and other connections are available. Manufactured from solid steel bar stock, in accordance with NACE MR-01-75 specification, they can be used in the pressure range from full vacuum to 350barg (5000psig).

These stainless steel high pressure filter housings can be ordered on their own or supplied with filter inserts as a complete assembly. These are available in Sinterflo® F Fibre, Sinterflo® M Mesh or Sinterflo® P Powder stainless steel. A variety of filtration ratings are available, please contact us for details.

Typical Applications
• High purity bottled gas
• Liquid or gas samples to process analysers
• Liquid or gas samples with minimum response time
• High pressure or vacuum filtration
• Sterile gas
• Precision in-line valves and equipment protection

Features and Benefits
• Resistant to high temperatures and corrosive environments
• Robust and durable construction
• Cleanable and reusable
• Suitable for use in acidic gases
• Ideal for stack sampling
• Low cost, long life unit
• Can be installed in permanent analysis equipment

Specifications

**Maximum pressure drop**
50bar (725psi)

**Maximum pressure loss**
25bar (360psi)

**Temperature range**
-250°C to 500°C (-425°F to 930°F)
Our plastic filter housings are ideal for use within a wide range of industries where filtered liquids must remain free of contamination. These housings are particularly effective in the process water, food and beverage and chemical processing industries.

In critical applications, all-natural housings guarantee the cost-effective filtration of a variety of solvents, acids, alcohols and chemicals without leaching or bacterial build up.

Our 100% polypropylene filter housings, without color, adders, fillers, reinforcements or lubricants, provide an inexpensive alternative to Teflon™ or fluoropolymer housings.

Features and Benefits

- **Excellent Chemical Compatibility**
  - Suitable for use with a variety of solvents, acids, alcohols and chemicals.

- **Flexible Options**
  - Plastic filter housings are available for use with industry standard 2-1/2” and 4-1/2” diameter filter cartridges. Available in a wide variety of materials and pipe connections to match application requirements: FDA Grade Polypropylene, Clear Styrene Acrylonitrile (SAN), High Strength Glass Reinforced Nylon (for high temperature applications) and Pure Polypropylene.

- **Cannot be Over Tightened**
  - Plastic housings feature a unique bowl to head thread design which prevents overtightening, reducing the risk of water leakage.

- **Fully Tested**
  - Full testing to industry standards to the Water Quality Association for burst pressure, water tightness and fatigue resistance.

Applications

Our plastic filter housings are suitable for a wide range of process liquids. Typical applications include:

- **Food and Beverage**
  - Process waters, polishing lines and clarification

- **Process and Potable Water**
  - The filtration of process water installations for removal of general contamination and resin fines

- **Semi-conductor**
  - High-purity and fine chemical filtration

- **Reverse Osmosis Pre-filtration**
  - Particulate removal prior to reverse osmosis polishing

- **De-ionised Water**
  - For use in de-mineralised and de-ionised water systems, for the supply of ultra-pure water

- **Chemical Processing**
  - For the clarification and sterilisation of a wide range of process chemicals

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

- **Printing**
  - For bulk ink and chemical filtration, as well as the clarification of fountain and wash solutions

- **Oils**
  - Including lubricating, hydraulic and cutting fluids
Standard Housings

Standard housings offer the following:

- White talc reinforced polypropylene head with blue talc reinforced or clear styrene acrylonitrile (SAN) bowl
- Standard \( \frac{3}{4} \) NPT or \( \frac{3}{4} \) BSP connections
- Securely retained Buna “N” O-ring to ensure effective static sealing
- Positive head to bowl ‘stop’ to prevent bowl over tightening
- Available from stock with or without pressure relief vent button
- Custom colors available by special order
- Mounting bosses in head for available bracket
- Accepts industry standard cartridge size:
  - OD: \( 2 \frac{3}{4} \) (70mm)
  - ID: \( 1 \) (25mm)
  - Length: Half: \( 4 \frac{3}{4} \) (124mm)
    - Full: \( 9 \frac{3}{4} \) (248mm)
    - Double: \( 20 \) (508mm)
- Full testing to industry standards of the Water Quality Association for burst pressure, water tightness and fatigue resistance

Specifications

<table>
<thead>
<tr>
<th>Model number†</th>
<th>Max. operating temperature °F (°C)</th>
<th>Max. operating pressure psi (bar)**</th>
<th>Shipping weight lb (kg)***</th>
<th>Cartridge size</th>
<th>Housing material and style (all have white polypropylene head)</th>
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</thead>
<tbody>
<tr>
<td>11N</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>3.3 (1.50)</td>
<td>10&quot; (254mm)</td>
<td>Blue polypropylene bowl</td>
</tr>
<tr>
<td>12N</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>2.6 (1.18)</td>
<td>5&quot; (127mm)</td>
<td>Blue polypropylene bowl</td>
</tr>
<tr>
<td>13N</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>4.5 (2.04)</td>
<td>20&quot; (508mm)</td>
<td>Blue polypropylene bowl</td>
</tr>
<tr>
<td>21N</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>3.3 (1.50)</td>
<td>10&quot; (255mm)</td>
<td>Clear styrene bowl</td>
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<tr>
<td>22N</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>2.6 (1.18)</td>
<td>5&quot; (127mm)</td>
<td>Clear styrene bowl</td>
</tr>
<tr>
<td>23N</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>4.5 (2.04)</td>
<td>20&quot; (508mm)</td>
<td>Clear styrene bowl</td>
</tr>
</tbody>
</table>

* Housings can be ordered with a differential pressure gauge by adding the letter “G” after the model number. Housings can be ordered without a relief button by adding the letter “X” after the model number.
† NPT fittings as standard. Add a B after the model number to order BSP fittings.
** At 70°F (21°C) ***Multiply by 12 to obtain weight per case.

The model 11N, 21N, and 23N filter housings are tested and certified by NSF International under ANSI/NSF Standard 42 for material and structural integrity requirements.
High Temperature Nylon Housings

This range of filter housings is suitable for high temperature applications. Features include:

- High strength glass reinforced nylon head and bowl
- Securely retained Buna “N” O-ring to ensure effective static sealing
- Distinctive red color
- Standard 3/4” NPT or 1/2” BSP connections
- Full testing to industry standards of the Water Quality Association for burst pressure, water tightness and fatigue resistance
- Not available with pressure relief vent button

**Specifications**

<table>
<thead>
<tr>
<th>Model number</th>
<th>Max. operating temperature °F (°C)</th>
<th>Max. operating pressure psid (bar)*</th>
<th>Shipping weight lb (kg)**</th>
<th>Cartridge size</th>
<th>Housing material and style</th>
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</thead>
<tbody>
<tr>
<td>31</td>
<td>165 (74)</td>
<td>100 (6.9)</td>
<td>3.2 (1.45)</td>
<td>10” (254mm)</td>
<td>Red reinforced nylon head and bowl</td>
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<tr>
<td>32</td>
<td>165 (74)</td>
<td>100 (6.9)</td>
<td>2.3 (1.04)</td>
<td>5” (127mm)</td>
<td>Red reinforced nylon head and bowl</td>
</tr>
</tbody>
</table>
Pure Polypropylene Housings

Our pure polypropylene filter housings are ideal for use in all industries where filtered liquids must remain totally free of contamination. These housings are especially essential in the semi-conductor, pharmaceutical and chemical processing industries. They are constructed entirely of virgin polypropylene without color, adders, fillers, reinforcements or lubricants.

In critical applications, these all-natural housings ensure pure, cost-effective filtration of a variety of solvents, acids, alcohols and chemicals without leaching or bacterial build up. Our 100% polypropylene housings provide an inexpensive alternative to Teflon™ or fluoropolymer housings.

Applications include:
- De-ionised water
- Laboratory instrumentation and equipment
- Pharmaceutical /cosmetic solvents
- Electronic solutions and chemicals
- Post filter for reverse osmosis or ultrafiltration

Features include:
- 100% polypropylene construction
- Smooth contact surfaces to prevent bacteria and dirt buildup
- Includes a non-lubricated silicone O-ring as standard
- Standard ¾” NPT or ⅜” BSP connections

Specifications

<table>
<thead>
<tr>
<th>Model number‡</th>
<th>Max. operating temperature °F (°C)</th>
<th>Max. operating pressure bar (psi)**</th>
<th>Shipping weight kg (lb)***</th>
<th>Cartridge Size</th>
<th>Housing style</th>
</tr>
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<tbody>
<tr>
<td>51NX</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>2.4 (1.09)</td>
<td>10” (254mm)</td>
<td>w/o pressure relief button</td>
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<tr>
<td>51NXD</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>2.4 (1.09)</td>
<td>10” (254mm)</td>
<td>w/ tapped drain</td>
</tr>
<tr>
<td>51NXD-222</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>2.4 (1.09)</td>
<td>10” (254mm)</td>
<td>w/ 222 O-ring configuration</td>
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<td>52NX</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>1.2 (0.54)</td>
<td>5” (127mm)</td>
<td>w/o pressure relief button</td>
</tr>
<tr>
<td>53NX</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>3.4 (1.54)</td>
<td>20” (508mm)</td>
<td>w/o pressure relief button</td>
</tr>
<tr>
<td>53NXD</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>3.4 (1.54)</td>
<td>20” (508mm)</td>
<td>w/ tapped drain</td>
</tr>
<tr>
<td>53NXD-222</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>3.4 (1.54)</td>
<td>20” (508mm)</td>
<td>w/ 222 O-ring configuration</td>
</tr>
<tr>
<td>53NXD-222</td>
<td>125 (52)</td>
<td>150 (10)</td>
<td>3.4 (1.54)</td>
<td>20” (508mm)</td>
<td>w/ 222 O-ring configuration</td>
</tr>
</tbody>
</table>

* Housings can be ordered with a differential pressure gauge by adding the letter “G” after the model number.
‡ NPT fittings as standard. Add a B after the model number to order BSP fittings.
**At 70°F (21°C). ***Multiply by 12 to obtain weight per case. ¼” NPT vent and drain.

Ordering Information:
For prices including volume discounts please enquire.

Contact Information:
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Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
Porvair’s GIANT HOUSING® Series

The GIANT HOUSING® series offers maximum filtration capacity in a compact unit. These housings feature:

- Talc polypropylene, clear styrene, pure polypropylene and glass reinforced nylon construction
- Unique ‘stacked threads’ - both 1” and 1-1/2” NPT or BSP connections in the same head
- Bag housings in all materials, (bags are also available)
- Optional differential pressure gauge available

The GIANT HOUSING® series, with a 222 fitting in the head will only take 222 style GIANT cartridges. These are available with white talc polypropylene heads and white talc polypropylene or clear styrene bowls.

Specifications - for cold liquid applications

<table>
<thead>
<tr>
<th>Model number*†</th>
<th>Max. operating temperature °F (°C)</th>
<th>Max. operating pressure psi (bar)*</th>
<th>Shipping weight lb (kg)**</th>
<th>Cartridge size</th>
<th>Housing material and style</th>
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</thead>
<tbody>
<tr>
<td>BG 10</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>5.10 (2.31)</td>
<td>10” (254mm)</td>
<td>White polypropylene head, blue polypropylene bowl</td>
</tr>
<tr>
<td>BG 20</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>7.13 (3.23)</td>
<td>20” (508mm)</td>
<td>White polypropylene head, blue polypropylene bowl</td>
</tr>
<tr>
<td>CG 10</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>4.13 (1.87)</td>
<td>10” (254mm)</td>
<td>White polypropylene head, clear styrene bowl</td>
</tr>
<tr>
<td>CG 20</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>7.12 (3.23)</td>
<td>20” (508mm)</td>
<td>White polypropylene head, clear styrene bowl</td>
</tr>
<tr>
<td>NPGX10</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>3.13 (1.42)</td>
<td>10” (254mm)</td>
<td>Pure polypropylene w/o pressure relief button</td>
</tr>
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<td>NPGXD10</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>3.13 (1.42)</td>
<td>20” (508mm)</td>
<td>Pure polypropylene w/ tapped drain</td>
</tr>
<tr>
<td>NPGX20</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>5.15 (2.34)</td>
<td>20” (508mm)</td>
<td>Pure polypropylene w/o pressure relief button</td>
</tr>
<tr>
<td>NPGXD20</td>
<td>125 (52)</td>
<td>100 (6.9)</td>
<td>5.15 (2.34)</td>
<td>20” (508mm)</td>
<td>Pure polypropylene w/ tapped drain</td>
</tr>
</tbody>
</table>

* At 70°F (21°C).
† NPT fittings as standard. Add a B after the model number to order BSP fittings.
**Multiply by 12 to obtain weight per case. ¼” NPT vent and drain.

Specifications - for high temperature applications

<table>
<thead>
<tr>
<th>Model number*</th>
<th>Max. operating temperature °F (°C)</th>
<th>Max. operating pressure psi (bar)*</th>
<th>Shipping weight lb (kg)**</th>
<th>Cartridge size</th>
<th>Housing material and style</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTGX10</td>
<td>180 (82)</td>
<td>100 (6.9)</td>
<td>5.88 (2.67)</td>
<td>Full</td>
<td>Reinforced nylon head and bowl</td>
</tr>
<tr>
<td>HTGX20</td>
<td>180 (82)</td>
<td>100 (6.9)</td>
<td>8.25 (3.74)</td>
<td>Double</td>
<td>Reinforced nylon head and bowl</td>
</tr>
</tbody>
</table>

* NPT fittings as standard. Add a B after the model number to order BSP fittings.
** Multiply by 12 to obtain weight per case.
AH standard filter housings are designed for the purification of compressed air and gases in an industrial operation. This product series offers housings ranging from a volume flow of 20 m³/h to 2880 m³/h (related to 1 bar and 20°C). The housings are designed to offer low differential pressures at high flow rates.

The filter housing also includes an energy cost monitor, which indicates the most efficient time to replace the filter to achieve optimum performance and maximum filter life. Optionally, a transmitter can be fitted to indicate this remotely.

Features and Benefits

- **Three-part and optimised filter housing**
  Push and turn technology ensures easy exchange of the filter elements, whilst the optimised housing guarantees minimal pressure loss due to improved flow technology.

- **Modular concept**
  Robust flange connection enables secure and simple combination of filter housings with one sealing surface.

- **High filtration efficiency and longer life**
  Ultra air high performance filters provide better efficiency, and thanks to epoxy resin coating, a longer life. The energy cost monitor shows the best time to change the filter, which has a 10 year working guarantee.

- **Optimised design**
  Easy and safe connection of filter housings and flexible wall mounting with robust wall brackets. The conical design and smooth lower filter zone ensures no condensate transferred.

- **Acoustic alarm signal**
  Provides maximum safety for element maintenance.

- **Float drain**
  Integral float helps prevent blockages, for reduced maintenance.
### Specifications

#### Materials of Manufacture
- **Material housing:** Aluminium
- **Surface finish:** Epoxy resin
- **Sealing:** Perbunan®
- **Screw locking ring:** Aluminium
- **Energy cost monitor:** Plastic

#### Maximum Operating Pressure
- 6 bar (232psi)

#### Operating Temperature
- 120ºC (48ºF)

### Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume flow Nom. m³/h (ft³/h)</th>
<th>Max. m³/h (ft³/h)</th>
<th>G/DN</th>
<th>Dimensions mm (in)</th>
<th>Filter element</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>0002</td>
<td>20 (706)</td>
<td>40 (1,413)</td>
<td>G 1/4</td>
<td>95 (3.74)</td>
<td>289 (11.38)</td>
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<tr>
<td>0004</td>
<td>40 (1,413)</td>
<td>60 (2,119)</td>
<td>G 3/8</td>
<td>95 (3.74)</td>
<td>289 (11.38)</td>
</tr>
<tr>
<td>0006</td>
<td>60 (2,119)</td>
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</table>
The Compfil™ SH stainless steel filter housings, which are available in 18 different sizes, are used for the purification of compressed air and other gases. The optimised construction of the Compfil™ SH offers low differential pressure at high flow rates.

Applications

- Chemical
- Aseptic packing
- Pharmaceutical
- Biotechnology
- Cosmetics
- Breweries
- Dairies
- Food and beverages
- Water treatment systems
- Fermentation processes

Features and Benefits

- **Various size options available**

  18 different sizes for operating volumes from 60 Nm³/h (0.38 lb/ft³) to 23,040 Nm³/h (146.67 lb/ft³) related to 7 bar (101.5 psi).

- **Compliant**

  Complies to the requirements of the European directive 2014/68/EU for pressure vessels.

- **Safe installation**

  Plug connection guarantees that the elements remain safely fixed at all times.

- **Filter flexibility**

  Different element sizes can be installed due to the modular design.
Specifications

Materials of Manufacture

Filter housing: Stainless steel 1.4301 (304) or 1.4404 (316L)
Coupling nut: Stainless steel 1.4301 (304)
Plug: Stainless steel 1.4301 (304)
Housing gasket: EPDM (other gasket upon request)

Connection Types

BSP thread connection: Standard for 0006 - 0288 single housing
DIN Flange: Standard, starting at 0432 multiple housing

Maximum Operating Pressure

0006 - 0192: 16bar (232psi)
0288: 12bar (174psi)
0432 - 1920: 10bar (145psi)

Maximum Operating Temperature

200°C (392°F)

Surface Finish

Inner: Etched and passivated
Ra 1.6: 0006 - 0288 / 0432 - 1920

Outer: Etched, passivated and polished
Ra 1.6: 0006 - 0288
Etched and passivated (not polished)
0432 - 1920

Threaded BSP Socket

Flanged DN2633

Contact Information:
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India, Mumbai Division
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Email: infoIN@porvairfiltration.com
### Weight and Dimensions

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<th>Weight in kg (lb)</th>
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FILTER ELEMENT AND CARTRIDGE HOUSINGS

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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com

Type SH
Volume flow at 7 bar m³/h
(102psi ft³/h)

Connections Filter element

0006 60  (2,119) 90  (3,178)  R 1/4" DN 10
03/10
0009 90  (3,178) 120  (4,238)  R 3/8" DN 10
04/10 1
0012 120  (4,238) 180  (6,357)  R 1/2" DN 15
04/20 1
0018 180  (6,357) 270  (9,535)  R 3/4" DN 20
05/20 1
0027 270  (9,535) 360  (12,713)  R 1" DN 25
05/25 1
0036 360  (12,713) 480  (16,951)  R1 1/4" DN 32
07/25 1
0048 480  (16,951) 720  (25,427)  R1 1/2" DN 40
07/30 1
0072 720  (25,427) 1,080  (38,140)  R 2" DN 50
10/30 1
0108 1,080  (38,140) 1,440  (50,853)  R 2" DN 50
15/30 1
0144 1,440  (50,853) 1,920  (67,804)  R2 1/2" DN 65
20/30 1
0192 1,920  (67,804) 2,880  (101,706)  R 3" DN 80
30/30 1
0288 2,880  (101,706) 4,320  (152,560)  R 3" DN 80
30/50 1
0432 4,320  (152,560) 5,760  (203,412)  DN 100
20/30 3
0576 5,760  (203,412) 7,680  (271,217)  DN 100
30/30 3
0768 7,680  (271,217) 11,520  (506,825)  DN 150
30/30 4
1152 11,520  (506,825) 15,360  (542,433)  DN 150
30/30 6
1536 15,360  (542,433) 19,200  (678,042)  DN 200
30/30 8
1920 19,200  (678,042) 23,040  (813,650)  DN 200
30/30 10

Weight and Dimensions

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In-Line and Last Chance Filters

Last chance filters perform a complimentary role to main system filters. These are designed to remove and retain contamination such as machining chips, burrs, wear debris and fluid breakdown products induced during operation or built in downstream of the main system filters.

This range of filters, all designed to specific performance and installation requirements, are available in the following media configurations:

- Sinterflo® F sintered metal fibre
- Sinterflo® P sintered metal powder
- Sinterflo® M metal mesh
- Sinterflo® MC sintered metal mesh composite
- Laser drilled
- Polymers: polypropylene, acetal, peek, nylon, PTFE.

Inprinta® is the Inkjet sales division of Porvair Filtration Group. Inprinta® designs and manufactures a wide range of in-line and last chance filters to offer solutions for inkjet filtration throughout the body of the printer.

These self-contained filter assemblies are provided for varied types of inkjet applications including CIJ coding, textile, ceramics and graphics.
A comprehensive range of filters are designed for complete system protection. These include metal mesh filter discs, available in both pleated and flat versions, to suit specific application requirements.

The metal mesh filter discs are designed and manufactured to provide filtration protection in liquid and gas flow systems.

These cost-effective mesh filter discs provide a significant increase in filtration area for a similar installation.

These lightweight stainless steel filter discs are capable of operating with a variety of fluids at temperatures from -270-450°C (-454-842°F), and with differential pressures up to 3bar (43psi).

Metal mesh filters are available in two distinct types, rimmed and unrimmed.

Typical applications include spin pack filters used in the manufacture of man-made polymer fibre materials for textile products.

Typical Applications
- Liquid filtration
- Air filtration
- Hydraulics
- Spin pack filters

Features and Benefits
- Low pressure drop
- Easily cleanable
- High operating temperatures

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue's ordering guides. For further information, please contact a member of the Sales Team.
Metal Fibre Filter Discs
Flat and Pleated

A comprehensive range of fibre disc filters for complete system protection in both gaseous and liquid applications. These can be supplied in either flat or pleated versions to suit requirements.

Inexpensive flat discs are suited to applications where space is a premium, and where limited contaminant is expected.

For systems where a larger filtration area or lower pressure drop is required, but still within a limited footprint, we offer a pleated disc. Both designs are available with or without a sealing rim and in a comprehensive range of filtration ratings to suit a variety of operating conditions.

Typical applications include spin pack filters used in the manufacture of man made polymer fibre materials for textile products.

Typical Applications
• Liquid filtration
• Air filtration
• Hydraulics
• Spin pack filters

Features and Benefits
• Low pressure drop
• Easily cleanable
• Wide range of operating temperatures
• Variety of filtration ratings available
• Lightweight and robust construction
• Suitable for gaseous and liquid applications

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Ordering Information: For ordering information please contact a member of the Sales Team.

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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A wide range of metal powder filter discs are available in diameters from 0.5mm (0.02") to over 203mm (8") with a wide range of thicknesses.

Powder metallurgy techniques are used to produce porous discs with interconnected porosity and densities ranging from 35% to 75%. The porosity of the disc consists of a wide pore size distribution centred around a mean pore size.

Porous sintered metal discs are available in 15 different standard micron grades with pore sizes ranging from a 0.003 to 200 micrometres.

Disc sizes and tolerances are dependent on the material, micron grade and the density requirements.

Typical Applications

- Liquid and gas filtration
- Frits
- Pressure snubbers
- Aerators
- Support for chromatography columns
- Base components or assemblies

Features and Benefits

- Low pressure drop
- Easily cleanable
- High operating temperatures
In-Line Elements and Screens

To enhance performance capabilities, we produce a vast range of tubular last chance filters and screens.

Designed to be fully integrated into customer systems, these filters are manufactured using a number of techniques including micro resistance welding, fusion welding, laser drilling and injection moulding.

These elements are designed for long on-stream life and can be designed and constructed to withstand full system pressure.

Materials of construction
- Stainless steel or nickel-based alloys
- Sinterflo® F sintered metal fibre
- Sinterflo® P sintered metal powder
- Sinterflo® M metal mesh

Typical Applications
- Hydraulics
- Pneumatics
- Oil and lubrication systems
- Fuel systems
- Printing inks

Features and Benefits
- Available in pleated or cylindrical element designs
- Variety of filtration ratings available to suit a wide range of applications

Please note, this product is custom-made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

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Email: infoIN@porvairfiltration.com
In applications where the filter assembly is to be fitted for life, or when it is not practical to handle the filter after use, we can supply fully welded assemblies for direct installation into various systems. These are available in both metallic and polymeric forms, depending upon the system requirement.

In many applications the filter discs or tubular inserts are supplied fully integrated into a miniature housing, which forms part of the customer’s system, allowing easy replacement of the filter.

Filters can be integrated within a variety of standard industry fittings.

Housings can be made from a variety of materials including aluminium alloy, stainless steel, titanium and engineering thermoplastics.

**Typical Applications**

- Hydraulics
- Pneumatics
- Oil and lubrication systems
- Fuel systems
- Printing inks

**Features and Benefits**

- Available in pleated or cylindrical element designs
- Variety of filtration ratings available to suit a wide range of applications
- Variety of end fittings available including threaded and push-fit barbed connectors

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

**Ordering Information:** For ordering information please contact a member of the Sales Team.

**Contact Information:**

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Email: info@porvairfiltration.com

**US, Ashland Division**
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
In-Line Filter Housings

A range of in-line filter housing assemblies are designed for highly contaminated systems.

These filters feature a removable pleated or cylindrical filter cartridge with an increased filter area and, therefore, operational life. Additional optional features include bypass devices and system condition monitors.

**Materials of construction**
- Stainless steel or nickel-based alloys
- Variety of polymeric materials

**Typical Applications**
- Hydraulics
- Pneumatics
- Oil and lubrication systems
- Fuel systems
- Printing inks

**Features and Benefits**
- Variety of filtration ratings available to suit a wide range of applications
- Variety of end fittings available including threaded and push-fit barbed connectors

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

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Email: infoCN@porvairfiltration.com

**India, Mumbai Division**
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
A final, or last chance, filter is manufactured from stainless steel and is 100% chemically compatible to volatile inkjet materials.

This fully welded filter gives excellent structural integrity for the filter mesh and effective removal of any remaining contaminants before they reach the printhead.

Specifications

**Filter Code**

8069

**Materials of Manufacture**

Filter media: Stainless steel mesh
Housing material: Stainless steel

**Micron Rating**

5µm, 15µm, 25µm, 40µm

**Dimensions**

Filter length: 50mm (1.97")
Filter width: 12mm (0.47")

**Filter Area**

1.9cm² (0.29in²)

**Maximum Operating Pressure**

6bar (87psi)

**Operating Temperature**

From 0°C to 50°C (32°F to 122°F)
In-Line Filters
Stainless Steel

A small in-line filter manufactured for digital inkjet printers.

The stainless steel construction provides a filter with low extractables and 100% compatibility with all inkjet fluids to ensure an extended life span.

Specifications

Filter Code
8073

Materials of Manufacture
Filter media: Stainless steel mesh
Housing material: Stainless steel

Micron Rating
10µm

Dimensions
Filter length: 35mm (1.38”)
Filter width: 8mm (0.31”)

Filter Area
7cm² (1.08in²)

Connectors
2.6mm O/D barb

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)
A small unrimmed stainless steel disc filter is designed for use on inkjet printers. A fully welded self contained filter with an integrated mesh media in a range of micron ratings. Complete chemical compatibility gives the filter an extended lifespan.

Specifications

Filter Code
8071

Materials of Manufacture
Filter media: Stainless steel mesh
Housing material: Stainless steel

Micron Rating
2µm, 5µm, 10µm, 20µm

Dimensions
Disc diameter: 9.5mm (0.37”)
Disc width: 2.2mm (0.08”)

Filter Area
1.1cm² (0.17in²)

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)
A stainless steel in-line filter is designed to meet all digital inkjet requirements.
Superior filtration integrity is achieved through a fully welded housing incorporating a stainless steel mesh filter. Full chemical compatibility gives the filter an extended lifespan.

**Specifications**

**Filter Code**
8067

**Materials of Manufacture**
Filter media: Stainless steel mesh
Housing material: Stainless steel

**Micron Rating**
5µm, 10µm, 20µm

**Dimensions**
Disc diameter: 30mm (1.18")
Disc width: 22mm (0.87")

**Filter Area**
5cm² (0.76in²)

**Connectors**
Barb: 2.6mm O/D barb
4.9mm O/D barb

**Maximum Operating Pressure**
6.5bar (94psi)

**Operating Temperature**
From 0°C to 50°C (32°F to 122°F)
A stainless steel in-line filter; designed for graphics printers and fully welded for complete filtration integrity.

With excellent flow rates, this filter is 100% chemically compatible with all inkjet fluids giving an extended life span and reduced printer service requirements.

**Specifications**

**Filter Code**
8077

**Materials of Manufacture**
Filter media: Stainless steel mesh
Housing material: Stainless steel

**Micron Rating**
5µm, 10µm, 20µm

**Dimensions**
Disc diameter: 47mm (1.85”)
Disc width: 30mm (1.18”)

**Filter Area**
13cm² (2.01in²)

**Connectors**
Barb: 2.6mm O/D barb
        4.9mm O/D barb
        6.5mm O/D barb
Jaco®: 3mm
NPT: ¼” NPT

**Maximum Operating Pressure**
6bar (87psi)

**Operating Temperature**
From 0°C to 50°C (32°F to 122°F)
A small pre-head filter is manufactured from stainless steel mesh.

The filter comes complete with a compatible O-ring and is designed as a last chance filter, giving excellent protection to the printhead.

### Specifications

**Filter Code**
8156

**Materials of Manufacture**
Filter media: Stainless steel mesh

**Micron Rating**
See ordering guide

**Dimensions**
- Disc diameter: 23mm (0.9”)
- Disc width: 2mm (0.08”)

**Filter Area**
4.2cm² (0.65in²)

**Maximum Operating Pressure**
5bar (72.5psi)

**Operating Temperature**
From 0°C to 50°C (32°F to 122°F)
High purity gasket filtration products are optimised for the protection of critical valves, pressure regulators, mass flow controllers and other components used in semiconductor gas delivery systems.

These gasket filtration products install into ¼” face vacuum seal fittings.

Typical Applications

- Microelectronics gas delivery equipment
- Protection of silicon precursor delivery pumps and componentry
- Protection of gas panel components, including valves and regulators

Features and Benefits

- **Compact, in-line design**
  
  Suitable for retrofitting into gas panels without changing the overall gas panel footprint.

- **Economical**
  
  No filter housing is required.

- **Removal ratings**
  
  99.95% efficiency at 0.4μm.

- **Robust construction**
  
  Gaskets have a 10Ra surface finish. Porous sintered powder metal filters are available in 316L stainless steel.

- **Service in severe environments**
  
  Excellent compatibility with a wide range of processing gases. Superior mechanical strength for high pressure (100psid@68°F (20°C)) and elevated temperature resistance (850°F (455°C)) for inert gas applications.

For further information, please contact a member of the Sales Team. Visit us online for current and comprehensive Gasket filter information.
GasPro™
High Purity Sinterflo® P Metal Powder Filters

High purity Sinterflo® P sintered powder metal media for OEM filters is used in critical Semiconductor and other Microelectronics gas handling applications.

The GasPro™ porous Sinterflo® P sintered powder metal filter media consists of a rigid, 3 dimensional network of extremely fine pores. These high efficiency filters are offered in 316L stainless steel and nickel media.

The filter media will withstand a pressure differential of 68bar (1000psi). The mechanical strength of the 316L stainless steel filter housings will provide reliable service for over 100,000 cycles in high pressure service (up to 206.8bar (3000 psig) @ 20°C (68°F)).

GasPro™ high purity filter welding is performed in an ultra-high purity inert atmosphere to ensure the best weld quality. All filters are 100% integrity tested, 100% helium leak checked, cleaned and dried, then double bagged in a Class 100 Cleanroom to ensure the highest out-of-box quality and cleanliness.

Typical Applications
- Semiconductor and other microelectronics gas distribution applications
- Semiconductor point-of-use process filtration

Features and Benefits
- **Superior filter efficiency**
  Porous sintered powder metal point-of-use filters are proven to provide greater than 9 LRV (99.9999999%) particle retention efficiency at 0.003μm (3 nanometres), and at the most penetrating particle size of 0.08μm per SEMI F38-0699 in gas filtration applications.
- **Service in severe environments**
  Porous Sinterflo® P sintered powder metal media provides excellent mechanical strength, enhanced corrosion resistance and elevated temperature service in challenging environments.
- **Temperature resistance**
  The all 316L stainless steel or nickel construction provides elevated temperature service up to 500°C (930°F) in reducing or inert gas applications.
- **Corrosion resistance**
  Our GasPro™ point-of-use filter hardware features 5Ra, electro polished surfaces to prevent corrosion and particle formation for reliable service. Robust construction and excellent corrosion resistance allow for service in a wide range of etch and CVD processing gases.

For further information, please contact a member of the Sales Team. Visit us online for current and comprehensive Sinterflo® P filter information.
High purity Sinterflo® F sintered fibre metal media is used in critical Semiconductor, Photovoltaic and other Microelectronics gas handling applications.

GasPro™ high purity filter welding is performed in an ultra-high purity inert atmosphere to ensure the best weld quality. All filters are 100% helium leak checked, 100% integrity tested, cleaned and dried, then bagged in a cleanroom to ensure the highest out-of-box quality and cleanliness.

Typical Applications
- Semiconductor, photovoltaic, and other microelectronics gas handling applications
- Competitive filter replacements

Features and Benefits
- Superior filter efficiency
  Porous sintered fibre metal in-line filters are proven to provide highly efficient particle retention efficiency at 0.003μm (3 nanometres), tested and verified at the most penetrating particle size of 0.8μm.
- Service in severe environments
  Porous Sinterflo® F sintered fibre metal media provides excellent mechanical strength, enhanced corrosion resistance and elevated temperature service operation.
- Corrosion resistance
  Our GasPro™ point-of-use filter hardware features electro polished surfaces to prevent corrosion and particle formation for reliable service. Robust construction and excellent corrosion resistance allow for service in a wide range of etching and CVD processing gases.

For further information, please contact a member of the Sales Team. Visit us online for current and comprehensive GasPro™ series and PV1 Sinterflo® F filter information.
High purity PTFE filters are used in critical Semiconductor and Microelectronics gas handling applications.

GasPro™ TEM filters, with a hydrophobic PTFE membrane, are ideal for applications that require the highest gas compatibility. PFA, FEP, or PTFE membrane supports provide the highest degree of cleanliness and gas compatibility while polypropylene supported PTFE is available for high purity inert gas and CDA applications.

These filters offer an outstanding cost-flux rate value compared to all-metal filters, maintaining high 3nm particle removal efficiency.

Manufacturing is done in a cleanroom using ISO 9001 Certified Quality System. A DI water flush, followed by a high pressure, 0.003μm filtered nitrogen flush removes particles and prevents particle shedding. Filters are vacuum dried to ppb out-of-box moisture levels.

All filters are 100% helium leak checked, 100% integrity tested, cleaned and dried, then bagged in a cleanroom to ensure the highest out-of-box quality and cleanliness.

Typical Applications
- Semiconductor, flat panel display, photovoltaic, and other microelectronics gas handling applications

Features and Benefits
- Superior filter efficiency
  Tested to provide particle retention efficiency at 0.003μm (3 nanometres) in gas filtration applications.
- Service environment
  Media provides excellent permeability and chemical resistance. The assemblies have an electro polished 316L stainless steel housing and a temperature resistance up to 100°C (212°F) in reducing or inert gas applications.
- Corrosion resistance
  Point-of-use filter hardware features 10Ra, electro polished surfaces to improve corrosion resistance and reduce particle formation for long reliable service.
- Cleanliness
  Point-of-use filters are manufactured in a cleanroom with organic free handling and bagging to maximise the out-of-package cleanliness.
- Best in class quality
  100% integrity tested and helium leak checked to 1 x 10-9 atm cc/sec.

For further information, please contact a member of the Sales Team. Visit us online for current and comprehensive GasPro™ Teflon™ filter information.
Air filters with a hydrophobic filter membrane act as a barrier to all contaminants.

**Specifications**

**Filter Code**
8163

**Materials of Manufacture**
Filter media: PTFE
Housing material: Polypropylene

**Micron Rating**
0.2µm

**Dimensions**
Disc diameter: 15mm [0.59"]
Disc width: 16mm [0.62"]

**Connectors**
Female luer / male syringe

**Maximum Operating Pressure**
5bar (72.5psi)

**Operating Temperature**
From 0ºC to 50ºC (32ºF to 122ºF)
Air filters with a hydrophobic filter membrane act as a barrier to all contaminants.

**Specifications**

**Filter Code**
8164

**Materials of Manufacture**
Filter media: PTFE
Housing material: Polypropylene

**Micron Rating**
0.2µm

**Dimensions**
Disc diameter: 25mm (0.98”)
Disc width: 19mm (0.74”)

**Connectors**
Female luer / male syringe

**Maximum Operating Pressure**
5bar (72.5psi)

**Operating Temperature**
From 0°C to 50°C (32°F to 122°F)
A filter of superior quality and design, the 33mm in-line disc filter is manufactured to the highest specifications for the super-wide format graphics market.

This inkjet specific self-contained unit is designed around an all Acetal construction and is available in standard white housing, or black housing for UV applications.

Ultrasonically welded with no binding agents for low extractables, the filter ensures complete compatibility with inkjet solvents. The inner mesh ensures precise filter specification to the required absolute micron rating.

### Specifications

**Filter Code**
8159

**Materials of Manufacture**
- Filter media: Stainless steel mesh
- Housing material: Acetal
- Housing colour: White or black

**Micron Rating**
- 5µm, 10µm, 20µm, 50µm

**Dimensions**
- Disc diameter: 33mm (1.3”)
- Disc width: 8mm (0.31”)
- Overall width: Connector dependant

**Filter Area**
12.5cm² (1.94in²)

**Connectors**
- Jaco*: 3mm Jaco*
- Luer: Female luer

**Maximum Operating Pressure**
5bar (72.5psi)

**Operating Temperature**
- From 0°C to 50°C (32°F to 122°F)
A filter of superior quality and design, the 45mm in-line disc filter is manufactured to the highest specifications for the super-wide format graphics market.

Ultrasound welded with no binding agents for low extractables, the filter ensures complete compatibility with inkjet solvents. The inner mesh ensures precise filter specification to the required absolute micron rating.

Specifications

**Filter Code**
8111

**Materials of Manufacture**
- Filter media: Stainless steel mesh
- Housing material: Acetal
- Housing colour: White or black

**Micron Rating**
- 5µm, 10µm, 20µm, 50µm

**Dimensions**
- Disc diameter: 45mm (1.77"
- Disc width: 9mm (0.35"
- Overall width: Connector dependant

**Filter Area**
12.5cm² (1.94in²)

**Connectors**
- Luer and CPC

**Maximum Operating Pressure**
- 5bar (72.5psi)

**Operating Temperature**
- From 0°C to 50°C (32°F to 122°F)
**Microdisc™ 4PV**

45mm Polymeric Volume Disc Filters

Inprinta’s black acetal pre-pump filter is manufactured specifically for use with Digital Inkjet equipment.

The high grade materials give good flow rates and complete chemical compatibility under all required conditions for extended life span.

### Specifications

**Filter Code**

8074

**Materials of Manufacture**

Filter media: Stainless steel mesh
Housing material: Acetal

**Micron Rating**

5µm, 10µm, 15µm, 20µm, 50µm

**Dimensions**

Disc diameter: 45mm (1.77”)
Disc width: 37mm (1.46”)

**Filter Area**

12.5cm² (1.94in²)

**Connectors**

¼” Jaco® and 6mm Jaco®

**Maximum Operating Pressure**

5bar (72.5psi)

**Operating Temperature**

From 0°C to 50°C (32°F to 122°F)

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**Ordering Information:** For ordering information please go to page 215.

**Contact Information:**

**UK, New Milton Division**
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

**US, Ashland Division**
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
Microdisc™ 7PS
74mm Polymeric Disc Filters

Inprinta™’s Microdisc™ 7PS is a large over-moulded polypropylene disc filter that gives excellent flow rates. The Microdisc™ 7PS also ensures complete chemical compatibility for all UV and solvent inkjet applications.

Specifications

Filter Code
8169

Materials of Manufacture
Filter media: Polypropylene
Housing material: Polypropylene
Housing colour: Opaque black and natural

Micron Rating
5µm, 10µm, 20µm, 50µm

Dimensions
Disc diameter: 74mm (2.91”)
Disc width: 47mm (1.85”)

Filter Area
19cm² (2.95in²)

Connectors
¼” Jaco® and 6mm Jaco®

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)
A fully integrated polypropylene filter media precision manufactured into a polypropylene housing.

This in-line filter has excellent chemical compatibility to inkjet fluids. The high efficiency filters give long service life and are bonded for minimal extractables.

**Specifications**

**Filter Code**
6612-XXXX-X

**TUBE FITTING**
1 Slip taper
2 Barbed

**MICRON RATING** (Nominal)
- 5 Micron = 0005
- 20 Micron = 0020

**Materials of Manufacture**
- Filter media: Polypropylene
- Housing material: Polypropylene

**Micron Rating**
- 5µm, 10µm

**Dimensions**
- Filter length: 61mm (2.4”)
- Filter width: 11mm (0.43”)

**Connectors**
- Barb

**Maximum Operating Pressure**
- 6bar (87psi)

**Operating Temperature**
- From 0°C to 50°C (32°F to 122°F)
This filter is an inkjet in-line filter manufactured from PEEK material and a stainless steel mesh.

These materials make it a superior product with extended life in your inkjet printer.

Specifications

Filter Code
8098

Materials of Manufacture
Filter media: Stainless steel mesh
Housing material: PEEK
Housing Colour: Opaque black or natural

Micron Rating
3µm, 5µm

Dimensions
Filter length: 44mm (1.73”)
Filter width: 15mm (0.59”)

Filter Area
3.5cm² (0.54in²)

Connectors
3mm Jaco®

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Available in black/natural colours.

Ordering Information: For ordering information please go to page 215.

Contact Information: China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Last Chance Inkjet Filters

This filter is manufactured in black acetal and designed to be used on inkjet equipment in conjunction with an Inprinta® main (capsule) filter. Situated close to the printhead, this filter is designed to capture any particles before damage can be caused to the printhead. This filter is 100% chemically compatible to all inkjet fluids giving an extended lifespan.

Specifications

Filter Code
8087

Materials of Manufacture
Filter media: Stainless steel mesh
Housing material: Acetal

Micron Rating
3µm, 5µm, 50µm

Dimensions
Filter length: 21mm (0.83”)
Filter width: 8mm (0.31”)

Filter Area
12cm² (1.86in²)

Connectors
2.6mm barb

Maximum Operating Pressure
1bar (14.5psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)
Disposable Capsule Filters for Inkjet Filtration

Inprinta® is the Inkjet sales division of Porvair Filtration Group, supplying quality inkjet filtration assemblies. Inprinta®'s filters are designed and manufactured in the UK for the digital printing market, with specialist applications in capsule filters.

This main system filter is specifically designed for the requirement of digital inkjet printer filtration. The self contained unit is designed around an all-polypropylene construction with no binding agents, to give low extractables and ensure 100% compatibility with inkjet fluids. All capsule filters are available for standard solvent, aqueous and UV ink systems.

- Capsule filters are pressure tested to guarantee capsule integrity
- All filter housing is high grade polypropylene
- An integrated Vyon® core gives added security
- Operating temperature from 0°C to 50°C (32°F to 122°F)
- 6bar (87psi) operating pressure

Inprinta® capsules are self contained, ready to use, disposable devices. The filter body is constructed with a natural or opaque black housing and is available with a wide range of connector configurations to suit different systems. All capsules will provide consistent, reliable printing performance with maximised print head protection.
Microcap™
Main System Capsule Filters

Main system filter, specifically designed for the requirement of graphics printer filtration.

The inkjet specific, self-contained unit is designed around an all polypropylene construction with no binding agents, to give low extractables and ensure 100% compatibility with inkjet fluids.

Available for standard or UV inks, this unit also has a wide range of connectors and filter ratings.

Specifications

Filter Code
8089

Materials of Manufacture
Filter media: Polypropylene
Housing material: Polypropylene
Housing colour: Opaque black and natural

Micron Rating
0.5μm, 1μm, 3μm, 5μm, 10μm, 20μm, 40μm and 60μm (additional ratings are available on request).

Dimensions
Filter diameter: 65mm (2.56")
Filter height: 88mm (3.46") (plus connectors)

Filter Area
500cm² (77.5in²)

Connectors
Barb: ¼” barb
NPT: ¼” NPT male
Jaco®: ¼” Jaco® 90°
6mm Jaco® 90°
6mm Jaco®
QRC: Quick Release Connector
Luer: Luer
Luer 90°

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Flow Rate

Ordering Information: For ordering information please go to page 216.

Contact Information: UK, New Milton Division
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
The Microprint™ II filter capsule has been specifically designed to offer maximum protection of printheads on digital printers. The self-contained unit is designed from a robust fully welded polypropylene construction. Available in both natural and black opaque for UV based inks, the Microprint™ II is made from materials free from binding agents, to give low extractables and protection from fibre release downstream, so ensuring a clean fluid system.

Microprint™ II capsule is available with a choice of our proprietary Polyfil™ and Klearfil™ filter media to suit solvent, aqueous and UV based inks. The different option of fluid inlet and outlet connectors allows the capsule to fit the majority of inkjet printer systems.

**Features**

- Industry standard and custom engineered filters
- Compatible with aqueous, UV and solvent based inks
- Clean, zero filter shedding and validated filters
- Multiple connectors and micron ratings

**Specifications**

**Filter Code**

8022

**Materials of Manufacture**

Filter media: Polypropylene
Housing material: Polypropylene
Housing colour: Opaque black and natural

**Micron Rating**

0.5μm, 1μm, 3μm, 5μm, 10μm, 20μm, 40μm and 60μm (additional ratings available on request)

**Connectors**

Jaco®: ¾” Jaco®
6mm Jaco®
QRC: Quick Release Connector ¾” NPT thread

**Maximum Operating Pressure**

<6.5bar (94psi)

**Operating Temperature**

From 0°C to 50°C (32°F to 122°F)

**Dimensions**

In Out

22.75mm 36mm 87mm 46mm

**Ordering Information:** For ordering information please go to page 216.
Microjet™ Main System Filters

A main system filter is specifically designed for the requirement of the wide and superwide format graphics printer market. The inkjet specific self-contained unit is designed around an all polypropylene construction, with no binding agents, to give low extractables and ensure 100% compatibility with inkjet fluids. These filters are suitable for solvent or UV ink systems.

Specifications

Filter Code
8131

Materials of Manufacture
Filter media: Polypropylene
Housing material: Polypropylene
Housing colour: Opaque black and natural

Micron Rating
5μm, 10μm

Dimensions
Filter length: 100mm (3.94") (plus connectors)
Filter width: 27mm (1.06")

Filter Area
500cm² (77.5in²)

Connectors
Luer / hose barb

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)
We manufacture a range of media and materials for fluidisation and powder handling units.

The three types of materials that are ideal for these applications are Sinterflo® P sintered metal powder, Sinterflo® M porous sintered mesh and Vyon® sintered porous plastic.

These materials are extremely strong and free standing and can be fabricated into shapes as complex as fluidising cones for use in silos, for example.

The material technologies that we can bring to powder handling represents one of the largest selections currently available from any single manufacturer.
For applications requiring localised fluidisation and aeration or for retrofitting into existing silos or hoppers, the Sinterflo® P aeration units can offer a simple ready-made solution to powder handling problems.

Fluidisation is the introduction of a compressed gas, via porous media, into a bulk powder, to enable the powder to behave like a liquid for ease of movement.

In general, the smaller the powder particle size, the more cohesive it becomes and the more difficult it is to move. With our extensive range of fluidising media, we can tailor optimal solutions to solve most fluidisation challenges.

Available in various sizes, Sinterflo® units introduce low pressure fluidising air into the material at or before its point of exit or movement.

Typical Applications

Sinterflo® P sintered metal powder aeration pads can be used where tolerance of high operating temperatures of up to 600°C (1,112°F) and high corrosion resistance is required.

- Localised fluidisation
- Silo construction
- Gypsum and fly ash aeration or drying

Features and Benefits

- **High operating temperatures**
  Up to 600°C (1,112°F).
- **High corrosion resistance**
- **Easy installation**
  Aeration pads complete with compressed air supply adapter with BSP thread.
- **Multiple sizes available**
  Ideal for retrofitting into existing hoppers or silos that have failed to perform effectively.

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
Sinterflo® P Stainless Steel Aeration Unit

Stainless steel Sinterflo® units have been specifically designed for use in the food and pharmaceutical industries and where resistance to chemical attack or high temperature (up to 600°C (1,112°F)) is required.

Sinterflo® P Bronze Aeration Unit

Available as sheets up to 600mm (23.62”) long and 350mm (13.78”) wide or as a finished unit as illustrated below, the Sinterflo® Bronze sheet and aeration unit exhibits excellent strength and rigidity, and can be used in higher temperature applications (up to 300°C (572°F)) such as conveyors and air slides for hot fly ash and gypsum powders.
Multi-layered, diffusion-bonded stainless steel mesh is available in 316L and other alloys. This precision fluidising media is available in both Lo Flow and Hi Flow rates to suit your application requirements.

Usually available in stock, for immediate delivery, the media is supplied as flat-panels, up to a seamless size of 100cm x 150cm (40” x 60”) and in an unlimited size in butt-welded sheets.

We provide complete fabrication services for this material, including custom sizes, shapes, mounting holes and welding to end fittings or rings. We can also fabricate into tubes or fluidisation cones for hopper bottoms.

For fluidising applications where a tightly controlled efficiency rating is required, a precision fine filter mesh (down to 2 microns nominal) sintered to the fluidising media is available; effective in reducing particulate bypass, clogging and when fluidising gas is not flowing constantly.

Sinterflo® MC fluidising media is particularly suited to demanding applications where high operating temperatures of up to 540°C (1,000°F), increased chemical or high abrasion resistance is essential, such as silo discharge cones, fluidised reactors and fluidised dryers.

This material is easily custom engineered to meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment.

Typical Applications

- Fluidising beds
- Fluidised gravity conveyors
- Fluidised hoppers
- Gas spargers

Features and Benefits

- High operating temperatures
- Robust and self supporting
  Fabricated shapes do not require complex and expensive support structures or joining strips.
- Application and material versatility
- Enhanced chemical resistance
  Can be constructed from a wide range of materials including 304 and 316L stainless steel, Hastelloy®, Inconel® and Monel®.
- Cleanability
  A wide range of cleaning methods can be used meaning the media can be sterilised for use in the food and pharmaceutical industries.
- Abrasion resistance
  Non-shedding media, highly resistant to mechanical abrasion.
- Design and engineering versatility
  Easily custom engineered to meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment.

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
Typical Applications

Fluidised Beds
Air is pumped through a horizontal or inclined section of Sinterflo® MC media, levitating a wide range of materials such as flour, cement, or paint particles. The air in this application can also be used for drying the product, and in some cases imparting additives.

Fluidised Gravity Conveyors
A second flow of air is introduced at a 90 degree angle to the fluidising media to move the product forward for secondary processing (ie roasting) or transportation.

Fluidised Hoppers
Formed into conical shapes, Sinterflo® MC media will prevent ‘bridging’ of particles/powders and increase the speed of discharge. This is especially critical in the unloading of railcars.

Gas Spargers
Submerged in a liquid environment, the air passed through Sinterflo® MC media creates a fine bubble field that increases oxygenation efficiency. This process is used in the electroplating, fermentation and water treatment industries.

Specifications

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<tr>
<th>FSLA Standard Lo Flow Fluidising Media Grades</th>
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<tbody>
<tr>
<td>Grade</td>
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<tr>
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<table>
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<tr>
<th>FSMA Standard Hi Flow Fluidising Media Grades</th>
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<tr>
<td>Grade</td>
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Manufactured from USP Class VI approved HDPE or PP materials, this is particularly suitable for both food and pharmaceutical applications. It has a uniform pore structure giving an even total area fluidisation. It is self-supporting due to its semi-rigid nature, reducing the need for the external support structures that are required with canvas and felt media.

This material can be supplied as a ready fabricated fluidising cone liner or in flat sheet form, 1000mm x 750mm (40” x 30”), for use as a tank liner or in an end user secondary fabrication.

Vyon® porous polymers are the most economical choice where temperatures are in the range of -70°C to 80°C (-94°F to 176°F).

Vyon® is fully cleanable for multiple re-uses, however, its affordability compared to stainless steel will aid more frequent replacement where a disposal fabrication is preferred to cleaning.

Typical Applications

Food and pharmaceutical
- Sugar
- Flour
- Milk powder
- Paracetamol
- Vitamins

Industrial and construction
- Cement
- Gypsum
- Soda/fly ash
- Coal dust

Chemical and plastics
- Titanium dioxide
- Carbon black
- Calcium carbonate
- Polyethylene powder
- Epoxy and polyester paint powders

Features and Benefits
- Light weight and self supporting
- Even air flow
- Non fibre shedding
- Low extractables
- Naturally hydrophobic
- Chemically inert
- Material versatility
- Easy to clean

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Ordering Information: For ordering information please contact a member of the Sales Team.

Contact Information: UK, New Milton Division
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
**Specifications**

**Mean Pore Size**
12-16µm

**Air Flow at 10mbar**
2-3m³/min/m² (71ft³/min/ft²)

**Removal Efficiency (Air)**
6µm

**Elongation at Break**
10%

**Tensile Strength**
70 kgf/cm² (12.8lbf-ft)

**Temperature Range**
-70°C to 110°C* (-92°F to 230°F)

* Depending on material type.

**Typical Applications**

**Gravity discharge**

**Anti-bridging and aeration pads**

**Air assisted gravity conveying**

**Dip coating**

**Contact Information:**

China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
We manufacture a range of flow and sound control units for the process industries. Using both metallic and polymeric materials, Porvair’s flow and sound control units are suitable for air, gas, liquid and silencing applications.

Many specialised applications have been developed to take advantage of the unique characteristics of porous materials. Applications such as filtration, flow control, flame arrestors and self-lubricating bearings are some of the largest commercial applications.

The porous technology offers a cost-effective solution to diverse engineering challenges in the industrial marketplace.

Our range of flow control units present the application with multiple benefits, including: high corrosion resistance, application and material versatility, abrasion resistance and design and engineering flexibility.
Multi-layered, diffusion-bonded, stainless steel mesh is available in 316L and other alloys. This precision filter mesh, also known as a porous plate, is available in a range of different pore sizes ranging from 2 to 100 micron in diameter.

Fabricated Sinterflo® MC sintered mesh is available in a standard flat plate format, up to a seamless size of 1,000mm x 1,500mm (40” x 60”) and an unlimited size in butt-welded sheets.

This material is easily custom engineered for non-standard applications and can be formed into tubes and small discs or large scale circular plates.

Particularly well suited to demanding applications where high operating temperatures up to 540ºC (1,000ºF), increased chemical resistance and/or high abrasion resistance is essential. These applications include flame arrestors, nutsche filter plates and polymer melt filters.

Typical Applications
• Well water filtration for crop irrigation
• Sand filtration in offshore oil and gas recovery
• Sea water filtration in desalination plants
• Marine life filtration from ballast water

Features and Benefits
• High operating temperatures
• Robust and self supporting
• Application and material versatility
• Enhanced chemical resistance
• Cleanability
• Abrasion resistance
• Design and engineering versatility
Specifications

Standard Filter Plate Grades

<table>
<thead>
<tr>
<th>Grade</th>
<th>Nominal Rating (microns)</th>
<th>Partical Control Mesh (wires per inch)</th>
<th>Nominal Thickness (inch (mm))</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSA-0005</td>
<td>5</td>
<td>325 x 2300</td>
<td>0.066&quot; (1.68mm)</td>
</tr>
<tr>
<td>PSA-0010</td>
<td>10</td>
<td>200 x 1400</td>
<td>0.066&quot; (1.68mm)</td>
</tr>
<tr>
<td>PSA-0015</td>
<td>15</td>
<td>165 x 1400</td>
<td>0.066&quot; (1.68mm)</td>
</tr>
<tr>
<td>PSA-0020</td>
<td>20</td>
<td>165 x 800</td>
<td>0.069&quot; (1.75mm)</td>
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<tr>
<td>PSA-0040</td>
<td>40</td>
<td>325 x 325</td>
<td>0.073&quot; (1.85mm)</td>
</tr>
<tr>
<td>PSA-0075</td>
<td>75</td>
<td>250 x 250</td>
<td>0.074&quot; (1.88mm)</td>
</tr>
<tr>
<td>PSA-0100</td>
<td>100</td>
<td>150 x 150</td>
<td>0.074&quot; (1.88mm)</td>
</tr>
</tbody>
</table>

Flow Versus Pressure Drop

Sinterflo® MC Filter Plate Configuration

1. Protective Guard Layer
2. Filtration Layer
3. Distribution Layer
4. Support Layer
5. Support Layer
GasPro™
Sintered Metal Flow Restrictors

Sintered metal flow restrictors are manufactured with hundreds of small, micron sized passageways. These are flow limiting devices used to provide highly accurate flow rates and prevent an uncontrolled flow of high purity semiconductor process gases. Installed into compressed gas supply systems, or in gas distribution manifolds, to provide highly controlled gas flow rates. These restrictors are highly reliable, low cost, flow control parts that will provide a quick return.

Typical Applications

- **Improved gas safety management**
  RFPs are in-line devices that precisely limit the gas flow in case of catastrophic failure of a valve, pressure regulator, distribution manifold or gas supply line. For use in a wide range of inert, highly toxic and pyrophoric gases to reduce the handling risk.

- **Cost reduction of exhaust venting systems**
  Toxic gas delivery systems with RFPs installed can be designed with smaller, lower flow exhaust systems therefore saving significant capital investment.

- **Tamper proof flow control**
  For providing fixed flow without the requirement of adjustments, moving parts or power. With hundreds of small flow channels, these restrictors will resist clogging from particles in the gas supply.

- **Replacement of needle valves and mass flow controllers**
  For fixed pressure, steady flow gas delivery and flow splitting applications.

- **Laminar flow diffusers**
  For low velocity gas pressurisation or venting of vacuum chambers.

- **Pressure snubbers**
  For the prevention of pressure surges and pressure shock.

- **Flame arrestors**
  For creating a barrier to flames travelling in a combustible gas service. Can be certified by independent lab testing.
Features and Benefits

- **Semiconductor industry, building and fire code compliance**
  RFPs can assist in complying with SEMI S5-0310 Safety Guidelines for sizing and identifying flow limiting devices for gas cylinder valves, NFPA 318 Standard for Protection of Semiconductor Fabrication Facilities, CGA G-13 Storage and Handling of Silane and other gas safety standards.

- **Porous materials of construction**
  316L stainless steel, nickel, Hastelloy® C22, Hastelloy® C276 and other temperature and corrosion resistant materials.

- **Fitting connections**
  10Ra or better, electro polished hardware made from 316L stainless steel VAR, nickel, Hastelloy® C22, Hastelloy® C276 and other temperature and corrosion resistant materials.

- **Flow range**
  1 to 60,000sccm N2 @ 30psig equivalent, calibrated to +/-7.5% flow tolerance typically, but can be offered as low as +/-1% on request. Standard products can be used in a full vacuum and in pressures up to 150psig. Custom designed products can be manufactured to withstand pressures up to 3000psig.

- **Test gases**
  Clean dry air, nitrogen, hydrogen, helium, argon and CO₂ are commonly used. Other gases such as AsH₃, Br₂, BF₃, CCl₄, CH₄, Cl₂, NF₃, NH₃, PH₃, SF₆ and SiH₄ can be correlated to an equivalent N₂ flow using viscosity conversions.

- **Class 100 cleanroom processing**
  Particle free, chemically clean, organic free handling and bagging of RFPs for out-of-package cleanliness.

- **Manufactured in the USA**
  Our restrictive flow products are manufactured in the USA using an ISO 9001 certified quality system.

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team. Visit us online for current and comprehensive GasPro™ Restrictive Flow Products and Sinterflo® P Sintered Metal Powder Flow Restrictors information.
GasPro™ Chamber Quick Vent Diffuser Filters

High purity gas diffuser and filter products for reduced turbulence, laminar gas flow when purging or venting load lock, transfer, cooling and vacuum chambers used in semiconductor and TFT flat panel display processing equipment.

GasPro™ diffusers allow large volumes of gas to be purged into vacuum environments, whilst minimising disturbance to particles within the chamber. The diffusers can be retrofitted into transfer, cooling, load lock, and process chambers.

All diffuser filters are 100% integrity tested, cleaned and dried, then bagged in a cleanroom to ensure the highest out-of-box quality and cleanliness.

Specifications

**Materials of Construction**
- Diffuser filter: 316L stainless steel or nickel sintered powder metal
- O-ring material: Viton®

**Removal Rating**
- 0.003µm, 0.2µm, 0.5µm, 2µm and 10µm

Features and Benefits

- **Faster venting and cost saving**
  Reduces purging and pressurisation time without disrupting particles and acts as a point-of-use filter.

- **Easy connection**
  Uses standard vacuum flanges, centering rings or face seal fittings to connect to load lock interfaces and vacuum chambers.

- **Wide range of filtration efficiency removal ratings**
  Highly efficient particle retention efficiency at 0.003 microns.

- **Service in severe environments**
  Excellent mechanical strength for 100,000 cycles in high pressure service (4 bar/60psid@68°F (20°C)). All metal construction for elevated temperature resistance for inert gas applications. Diffusers with Viton® O-rings rated for service at up to 212°F (100°C).

For further information, please contact a member of the Sales Team. Visit us online for current and comprehensive GasPro™ Restrictive Flow Products and Sinterflo® P Sintered Metal Powder Flow Restrictors information.
Battery Vents and Flame Arrestors
for Process and Analytical Instrument Applications

A wide range of flame arrestors are manufactured from sintered metal powder and porous plastics.

Used in many process and analytical instrument applications as safety devices for handling combustible gases for gas analysers.

The high thermal conductivity of these flame arrestor cools the flame front or combustion wave by absorbing and dissipating the heat of the flame.

**Sintered Metal Flame Arrestors**
Comply with the ATEX Directive and the associated International Standards Organisation (ISO) testing guidelines:

- ISO 4003: Determination of Bubble Point Pore Size in Porous Sintered Metal
- ISO 4022: Determination of Permeability
- ISO 2738: Determination of Density in Porous Materials

**Porous Plastic Battery Vents**
Manufactured from Vyon®, in either polyethylene or polypropylene, they can be used for: flame arresting, separation and optimum venting.

Flame arrestors can be made into the following formats:

- Cut shapes, mouldings, moulded discs or plugs
- Moulded cylinders with or without housings, end caps or threads
- Moulded discs or plugs sintered directly into stainless steel sensor housings
- Complex shapes containing both threads and end caps

Typical Applications

- Flame arresting
- Ignition prevention in flue gas stacks
- Explosion proof enclosure venting
- Flashback prevention for welding torches
- Battery vents
- Sensor protection

Features and Benefits

- Excellent flame-arresting properties due to tortuous path within the sintered porous materials
- Optimum flow of gases. The controlled pore size and uniform density ensure an even flow of gas to the sensor device
- For sound systems such as loudspeakers, the stainless steel mesh has excellent flame-arresting properties, but with reduced sound attenuation
- Robust and easy to assemble
- Our products undergo SPC inspection and conform to all the leading test authorities such as EECS, UL, FM, CAS and BASEEFA

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
Sinterflo® P Porous Powder Cylinders for Gas, Steam and Liquid

A wide range of Sinterflo® P porous sintered stainless steel powder cylinders are manufactured at Porvair. These cylinders are used for fabrication into filters for applications in aggressive environments. Made by isostatic pressing, these cylinders have no seam weld, leading to uniform filtration and less corrosion. Other materials such as Monel®, Hastelloy® and Inconel® are also available.

Features and Benefits

- Withstand a maximum differential pressure of up to 4.9 bar (71 psi) and an operating temperature of -51°C to 204°C (-60°F to 399°F)
- High dirt holding capacity
- Easily re-cleanable, allowing for long filter life and reduced operating costs

Standard Sizes for Sinterflo® P Stainless Steel Cylinders

<table>
<thead>
<tr>
<th>Stainless Steel Grade</th>
<th>Gas, Air, Steam (µm)</th>
<th>Liquid (µm)</th>
<th>OD (mm)</th>
<th>ID (mm)</th>
<th>Length (mm)</th>
<th>Wall Thickness</th>
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<td>6</td>
<td>34</td>
<td>28</td>
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<td>6</td>
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<td>48</td>
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<td>15</td>
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<td>40</td>
<td>25</td>
<td>30</td>
<td>130</td>
<td>124</td>
<td>124</td>
<td>3</td>
</tr>
</tbody>
</table>

For size required, specify: outside diameter x inside diameter x length.

* Other grades of stainless steel powders and lengths and diameters are available.

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Contact Information:
China, Wuhan Division
Tel: +86 (0)712 2878955
Email: infoCN@porvairfiltration.com

India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Porous Cups and Bushings

A wide range of cups and bushings are manufactured for the process and industrial markets. They provide additional porous surface area for longer filter service life or for increased permeability when compared to porous sintered metal discs of the same diameter.

For the best pore size uniformity and quality, porous sintered cups and bushings are recommended when the length to diameter ratio is less than 3:1.

When the length to diameter ratio of a part is more than 3:1, a porous sintered metal tube is the preferred option for the best pore size uniformity.

Typical Applications
- Filters
- Aerators

Features and Benefits
- Large surface area
- Increased permeability
- High operating temperatures

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Ordering Information: For ordering information please contact a member of the Sales Team.

Contact Information: UK, New Milton Division
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com
A complete range of porous materials for gas/liquid contact applications across a variety of industries, including:

- Food and beverage
- Waste and water treatment
- Chemical process
- Pharmaceuticals

As a manufacturer of porous media and elements, we can specify, design and manufacture the most efficient product for a given application.

The key to efficient gas transfer is to generate very high volumes of fine bubbles. A 1mm (0.04") bubble has 6 times the gas/liquid contact than that of a 6mm (0.24") bubble. Bubble size is essential to optimise mass transfer and reduce gas consumption and energy costs.

Elements are available in Sinterflo® sintered porous stainless steel or Vyon® sintered porous polyethylene or Polypropylene.

Stainless steel spargers are supplied in stainless 316L and higher alloys such as Inconel® and Hastelloy® for very aggressive applications. Being manufactured from such resistant materials, these spargers are cleanable and if necessary can be heat or steam sterilised.

The elements are designed and manufactured from uniform, fine, controlled pore size media to achieve excellent performance in the distribution of a large number of small gas bubbles for a higher interfacial area.

**Typical Applications**

Intrusive and non-intrusive tangential pipeline spargers:

- Treatment of wastewater
- Volatile stripping
- Steam injection

Tank spargers:

- Fermentation
- Agitation
- Bioremediation
- Oxygen stripping
- De-watering
- Dissolved air flotation processes used by major oil companies

**Features and Benefits**

- Rugged, fixed pore media
- Bubble size can be controlled by a wide range of available media pore sizes
- Temperature and corrosion resistant materials of construction
- High quality, all-welded, robust construction
- Higher diffusion rates from smaller sparging elements
- Cleanable
- Sparger diameter and connector designed to meet application requirements

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

**Contact Information:**

- **China, Wuhan Division**
  - Tel: +86 (0)712 2878955
  - Email: infoCN@porvairfiltration.com

- **India, Mumbai Division**
  - Tel: +91 22 25 976464 / +91 22 25 976465
  - Email: infoIN@porvairfiltration.com
Vyon® is a porous permeable plastic material made from high density polyethylene by a modern powder sintering process.

The Vyon® silencer is a sintered polyethylene body moulded to a high density polyethylene adapter. The silencer screws directly into the exhaust port of a control valve. The exhausting air escapes to the atmosphere by expanding through the porous body.

The noise from a single unsilenced exhaust port is reduced from about 90 decibels to between 60 and 70 decibels when fitted with a Vyon® silencer. 90 decibels corresponds to the noise produced by a heavy truck or underground train passing at a distance of a few feet and represents the acknowledged danger level to which people should not be exposed for any length of time. By comparison, 60 decibels corresponds to normal conversation at a distance of 1 metre (3 feet).

This is available directly to pneumatic equipment manufacturers in our exclusive grey body/black adaptor colour combination.

**Typical Applications**
- Silencing
- Filtration for pneumatic equipment
- Sound attenuation

**Features and Benefits**
- **Significant noise reduction**
  Up to 30 decibels, the difference between an underground train and normal conversation.
- **Easy installation**
  Available with BSP thread connections, they screw directly into, and must always match the size of the exhaust port.
- **Operating conditions**
  For application on systems with working pressures up to 10 bar (150 psi).
- **Minimal flow loss**
  Effectively zero in a vast number of applications.
- **Minimal maintenance costs**
  Elements can be cleaned and reused, reducing replacement and maintenance costs.
- **Maintenance free**
  Unaffected by water or oil. Do not be allow to become blocked or blinded with debris.

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

**Ordering Information:** For ordering information please contact a member of the Sales Team.

**Contact Information:**
- **UK, New Milton Division**
  Tel: +44 (0) 1425 612010
  Email: info@porvairfiltration.com
- **US, Ashland Division**
  Tel: +1 804 550 1600
  Email: infoUS@porvairfiltration.com
Specifications

Materials of Manufacture
Body: Vyon® Sintered porous HDPE
Adaptor: Injection moulded solid HDPE

Fitting
BSP (British Standard Pipe)

Fitting Guide

<table>
<thead>
<tr>
<th>Fitting size (Inches)</th>
<th>Full Height (mm)</th>
<th>Body Height (mm)</th>
<th>Width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>⅛&quot;</td>
<td>35.5 (1.36&quot;)</td>
<td>27.8 (1.09&quot;)</td>
<td>12.9 (0.51&quot;)</td>
</tr>
<tr>
<td>¼&quot;</td>
<td>42.6 (1.68&quot;)</td>
<td>35.7 (1.40&quot;)</td>
<td>16.6 (0.65&quot;)</td>
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<tr>
<td>⅜&quot;</td>
<td>67.5 (2.66&quot;)</td>
<td>57.4 (2.26&quot;)</td>
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<td>½&quot;</td>
<td>78.5 (3.09&quot;)</td>
<td>68 (2.68&quot;)</td>
<td>24.8 (0.98&quot;)</td>
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<td>¾&quot;</td>
<td>139.8 (5.5&quot;)</td>
<td>124.8 (4.91&quot;)</td>
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<td>1&quot;</td>
<td>154 (6.06&quot;)</td>
<td>135.5 (5.33&quot;)</td>
<td>47.8 (1.88&quot;)</td>
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<tr>
<td>1&quot;</td>
<td>115 (4.53&quot;)</td>
<td>95.6 (3.76&quot;)</td>
<td>47.8 (1.88&quot;)</td>
</tr>
</tbody>
</table>

Maximum Working Pressure
10bar (150psi)

Noise Reduction
Up to 30dB

Operating Temperature Range
-70°C to +80°C (-94°F to 176°F)
A range of diffused aeration products for the treatment of both industrial and municipal effluent.

Our strong research and development teams, technical expertise and capability ensure we are at the forefront of clean water filter technology, enabling delivery of cost effective, reliable clean water solutions tailored to customers’ requirements.

Aeration is an effective method for breaking down the organic components of effluents. Sewage aeration systems have two functions:

• provide oxygen to feed the oxygen breathing aerobic bacteria that decomposes organic matter
• stir the effluent to ensure that it is homogeneous for efficient oxygenation

Our diffused aeration products have been designed to optimise these functions and provide:

• Easy fitting into new installations
• Easy retrofitting into existing installations
• High oxygen transfer efficiency
• Low operating costs
• Low maintenance costs

Included in the range are both Vyon® sintered porous polyethylene and EPDM membrane products:

• Vyon® disc diffusers
• Vyon® tubular diffusers
Disc diffusers are used in the breaking down of pollutants in sewage and industrial waste water, by the highly efficient transfer of oxygenated air.

Porous polyethylene disc diffusers are available in a range of pore sizes and permeabilities, ensuring a correct match to exacting process requirements.

This diffuser is a direct replacement for the Degrémont® 230mm (9.05") Ceramic Disc.

Diffusers can be supplied as disc only, with or without seal, or as a complete diffuser assembly, and are easily retrofitted into existing installations.

**Typical Applications**
- Water treatment

**Features and Benefits**
- High oxygen transfer efficiency
- Low operating costs
- Low back pressure
- Resistant to chemical attack
- Easily retrofitted to existing installations
- Lightweight and resistant to damage

**Specifications**

**Materials of Manufacture**
- Disc: High Density Polyethylene
- Gasket: Waste water approved EPDM
- Fixings: Stainless steel ring and Rilsan® Coated Clips

**Technical Information**
- Diameter: 230mm (9.05")
- Wall Thickness: 6mm (0.24")
- Weight: 0.38kg (2.2lb) nom
- Bubble Size: 2-4mm (0.08"-0.16")
- Recommended Air Flow: 1-5m² (10.8 - 53.8ft³/hr) diffuser

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
A range of thigh density polyethylene tubular diffusers are made with regulatory approved materials for potable water applications.

Can be used over a large pH range and for a variety of organic chemicals, acids and alkalis, these are highly chemical resistant.

They can be custom made in a variety of diameters and lengths. Highly robust and produce uniform bubble size and pattern to ensure effective oxygenation and long service life.

The tubular diffusers are produced over a large range of efficiencies for effective particle removal.

Typical Applications

- Water treatment
- Potable water filtration
- Ponds
- Rivers
- Fish farms

Features and Benefits

- Robust and rigid

Specifications

Materials of Manufacture

- Tube: High Density Polyethylene (HDPE)
- Adapter: High Density Polyethylene (HDPE)
- Gasket: EDPM

Technical Information

- Approximate Weight: 0.3kg (0.7lb) per 500mm (19.67”) diffuser
- Dry Permeability: 94m³ (24,832gal)/hr/500mm diffuser @ 15mbar (218psi) Δp
- Diffuser surface area: 0.1175m² (1.26ft²) for 500mm (19.67”) diffuser
- Design pressure: 10-90 kPa (0.1-0.9 bar)
- Design temperature: 1°C to 50°C (34°F to 122°F)
- Typical SOTE %/m depth: 6.8%

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.

Contact Information:

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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Porvair continues to research new materials for filtration and separation. Examples are the development of metallic membranes and the use of specialist surface modification, to provide chemical or physical properties that are beneficial to the separation activity or the longevity of the filtration equipment.

We manufacture the speciality product Stabili™ to compliment our capability in the food and beverage processing market.

This product has been developed as a unique technology that is the interface of our filtration and porous material technology.
Porvair is a leading manufacturer of porous polymeric materials and filter cartridges. Stabifil™ has been developed as a unique technology that is at the interface of Porvair’s filtration and porous material technology. The unique manufacturing process allows contact between the adsorbent and the beverage to be at its optimal.

The module design maximises performance and packing density. These serviceable modules are supplied in purpose designed modular housings, sized around common industry standards. The length and number of these units can be configured to meet flow rate and batch size requirements.

Stabifil™ is highly flexible due to the robustness of the composite material, which enables it to be easily incorporated into any process where beverage stabilisation is required.

**Applications**

- **Beer Stabilisation**
  Removal of haze-active polyphenols to allow beer to be stored and minimise reduction in clarity. Reduce chill haze in beers that are served extra-cold.

- **Wine Stabilisation**
  For the elimination of haze, to enhance clarity

- **Spirits**
  Reduction of haze caused by trace amounts of polyphenols prevalent in raw materials e.g. brandy

- **Vinegar**
  To ensure a clear and stable product by removing trace amounts of haze-active polyphenols

- **Fruit Juice**
  To enable a clear product to be manufactured and stored; apple juice, coconut juice and grapefruit juice are typical applications

- **Ice Tea**
  To remove astringency and improve the product’s taste in ‘real’ iced teas

**Options**

We manufacture a range of related products suitable for the following applications:

- **Wine Stabilisation**
  For the elimination of haze, to enhance clarity

- **Spirits**
  Reduction of haze caused by trace amounts of polyphenols prevalent in raw materials e.g. brandy

- **Vinegar**
  To ensure a clear and stable product by removing trace amounts of haze-active polyphenols

- **Fruit Juice**
  To enable a clear product to be manufactured and stored; apple juice, coconut juice and grapefruit juice are typical applications

- **Ice Tea**
  To remove astringency and improve the product’s taste in ‘real’ iced teas

**Stabifil™ within the Treatment System**

Ordering Information: For ordering information please contact a member of the Sales Team.

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**SPECIALITY PRODUCTS**

---

**Features and Benefits**

- **Easy regeneration**
  Hot caustic regeneration can be performed in-situ and with material fully enclosed, making integration and operation safer and easier.

- **Robust characteristics**
  Higher pressure drops are feasible with no hysteresis and damage as compared to powder beds.

- **Clean and safe process**
  No requirement to handle loose powder with associated risks to operators, equipment damage and loss of adsorbent.

- **Flexible and dynamic stabilisation**
  Degree of stabilisation required can easily be altered by changing the flow rate to increase or decrease the contact time between the adsorbent and the beverage at any stage during the process.

- **Capacity is easily increased at minimal cost**
  More processing capacity or higher stabilisation are achieved by increasing the number of modules.

- **Accurate and reproducible**
  Polymer matrix and adsorbent are precisely manufactured to ensure the dosage is accurate to minimise batch-to-batch variation.

- **Minimal loss of beverage in adsorbent media**
  The beverage is easily expelled from the matrix, which has low liquid retention properties.

- **Low capital cost and investment**
  Low cost filter housings available to facilitate each module. A minimal amount of technical training is required prior to operation.

---

**Specifications**

- **Materials of Manufacture**
  Filter media: Vyon® porous polyethylene cosintered with Polyvinylpyrrolidone (PVPP)

  End fittings: Polypropylene

  Hardware: Stainless Steel 316 or 316L

- **Cartridge Dimensions (Nominal)**
  Diameter: 180mm (7.09”)

  Length: 1000mm (39.37”)

- **Gaskets and O-Rings**
  FDA approved Ethylene Propylene, Silicone, Viton® or Nitrile

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

---

**Cartridge Construction**

Stabifil™ cartridges are constructed from FDA CFR Title 21 tested materials that are proven to be food-safe and meet EC 10/2011. Stabifil™ cartridges do not contain ‘soluble additives’ and hence meet the requirements of German ‘Beer Purity Laws’.

Stabifil™ cartridges are built using technology that is unique to our filter cartridges and porous polymers. No glues or resins are used to bond the adsorbent, polymer or cartridge hardware.

---

**Product Evaluation**

The chart below shows polyphenol removal from various types of beer by the same Stabifil™ unit, at an equivalent dosing rate of 26 g/L.

**Polyphenol removal- various beers**

![Polyphenol removal chart for different beers](chart.png)

For every beer type, effective and consistent removal was achieved. The second chart shows how polyphenol removal for a particular beer type changed throughout the life of the Stabifil™ unit.

**Polyphenol removal- specific beer after ‘x’ cycles**

![Polyphenol removal chart](chart.png)

The tests used a Stabifil™ in the form of a Porvair J-type module. The selected flow rate gave an adsorbent/beer contact time of 25 seconds. After every processing cycle, the system underwent in-situ regeneration with caustic and reverse-osmosis water. A nitric acid wash was added every 3rd regeneration cycle to negate any effects of beer stone formation.

No loss in performance was seen after 50 processing and regeneration cycles. Circulation of hot caustic was used to simulate a further 150 regeneration cycles with no adverse effects. Furthermore, no powder was present in any processed beer or effluent stream.

---

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NanoKey™
High Efficiency Electro-Adsorptive Cartridge Filters

A range of sub-micronic filter cartridges for the removal of contaminants from mainstream water supply, including viruses, bacteria, cysts and endotoxins.

NanoKey™ cartridge filters are manufactured from nanoalumina fibres on glass fibre, with a polypropylene core support, meaning that every 1m² of filter media has a greater surface area than 42,000m².

The NanoKey™ is also available as a carbon option, which has the ability to remove humic and total organic compounds (TOCs).

Features and Benefits
- Efficiency greater than or equal to polymeric UF/MF membranes with higher flow and pressure drop
- > 50 millivolt streaming zeta potential
- Removes “small” materials not captured by conventional filters
- Captures organic/microbial macromolecules
- Mean pore size 1.25 microns
- Cartridge pressure drop <0.1 bar
- Standard or carbon versions of Nanomedia are available

Applications
NanoKey™ cartridge filters are suitable for the sub-micronic filtration of a wide range of process liquids.

Typical applications include:
- **Reverse Osmosis Prefiltration**
  Reduces biofouling by reducing virus, bacteria, cysts, endotoxin, colloidal silica and iron
- **Beverage Bottling**
  Improves the taste, odor, clarity and safety of potable water
- **Agriculture**
  Purer water produces healthier animals with less medication and reduces bacteria for washing fruits and vegetables
- **Industrial Water**
  Protects cooling towers, boilers and chillers
- **Semi-Conductor**
  Metals recovery and transient PAC removal from carbon bed
- **Pharmaceutical**
  Membrane prefILTERing and endotoxin reduction in water
- **Wastewater**
  Metals removal, pathogen and the reduction of TOCs
Specifications

Materials of Manufacture
Filter media: Nano-Alumina coated Microglass fibres
Powdered activated carbon
Membrane support: Polypropylene

Micron Ratings
1.25µm

Effective Filtration Area
1m² of filter media = 42,000m² of surface area

Operating Characteristics
Maximum ΔP: 2.1bar (30 psi)
Maximum Operating Temperature: 80°C (176°F)

Cartridge Dimensions (Nominal)
Diameter: 180mm (7.09”)
Length: 1000mm (39.37”)

The retention/adsorption of the NanoKey™ products may be determined/optimised through changes in filtration conditions.

Selection Guide

<table>
<thead>
<tr>
<th>Model #</th>
<th>Micron Rating</th>
<th>Cartridge Length</th>
<th>Cartridge Width</th>
<th>Max. Flow Rate gpm (lpm)</th>
<th>Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNKS10D</td>
<td>Nano Range</td>
<td>9 ¾” (248mm)</td>
<td>2 ¼” (70mm)</td>
<td>5 (22.7)</td>
<td>Single Faucet (Kitchen)</td>
</tr>
<tr>
<td>CNKS20D</td>
<td>Nano Range</td>
<td>20” (508mm)</td>
<td>2 ¼” (70mm)</td>
<td>10 (45.5)</td>
<td>Single Faucet (High Capacity)</td>
</tr>
<tr>
<td>GCNKS10D</td>
<td>Nano Range</td>
<td>9 ¾” (248mm)</td>
<td>4 ½” (108mm)</td>
<td>11 (50)</td>
<td>House</td>
</tr>
<tr>
<td>GCNKS20D</td>
<td>Nano Range</td>
<td>20” (508mm)</td>
<td>4 ½” (108mm)</td>
<td>22 (100)</td>
<td>House (High Capacity)</td>
</tr>
</tbody>
</table>

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A range of auxiliary products are manufactured to provide supplementary system support.

Differential pressure indicators (DPIs) provide indication of increasing differential pressure, filter blockage or bypass by both visual and electrical signal.

A DPI can be set to provide a signal of decreasing differential pressure in the system and, in some instances, signal that the system has been operated.

These are lightweight, robust and reliable for use in hydraulic, fuel and lube oil systems.
A wide range of differential pressure indicators (DPIs), which help protect critical aircraft systems, providing an indication of impending or actual blockage when the filter element has become blocked and requires maintenance or replacement.

These components monitor the pressure differential between the upstream and downstream of a filter element, providing condition monitoring and an alert to potentially dangerous system conditions, such as drastic flow restrictions, filter element damage, line blockage or upstream release of contaminants.

Designed and manufactured using proven robust techniques to ensure resistance against the most severe pressure and vibration environments.

Indication can be by a visual or electrical output, or a combination of both. Visual indication is provided by a red coloured pop-up button that remains in the actuated position until manually reset. Electrical outputs can be provided by flying lead or a wide variety of standard and bespoke electrical connectors.

In addition to standard differential pressure indicators and dependent on specification requirements, we can incorporate additional design features such as:

- **Thermal lockout**
  Preventing false actuations during expected high viscosity pressure conditions such as cold system start-up

- **Non-reset mechanisms**
  Requiring removal of the DPI and a specific orientation in order to reset, preventing a fail-safe against

- **Surge damping**
  Providing resistance against false actuations during inadvertent system pressure spikes

**Typical Applications**

- Fuel
- Lubricant
- Hydraulic
- Coolant
- Pneumatic

**Features and Benefits**

- Lightweight
- Robust structure

**Options**

- Visual
- Electrical

Please note, this product is custom made to meet specific project requirements and cannot be ordered through this catalogue’s ordering guides. For further information, please contact a member of the Sales Team.
An extensive range of porous metal and polymeric materials are manufactured to provide optimum solutions for a wide variety of applications.

These materials can be purchased for OEM products or be integrated and package into finished products.

Core materials are:

- **Sinterflo® sintered porous metal materials**
  Mainly sintered porous stainless steel and bronze materials, sintered metal fibre and multi-layer stainless steel meshes

- **Vyon® sintered porous plastic materials**
  Mainly sintered porous polyethylene and polypropylene materials

The applications for these materials include:

- Filtration, many and diverse applications including air, water, steam and aggressive chemicals
- Battery vents and flame arrestor plugs
- Flame arrestors for gas sensor protection
- Powder fluidisation and solids handling
- Silencing
- Vacuum tables
- Sensor protection
- Sparging
- Fragrance emanation and chemical controlled release
Manufactured from randomly laid metal fibres, sinter-bonded to form a uniform high porosity filter medium, Sinterflo® F demonstrates a significantly low pressure drop, high permeability and excellent dirt holding capacity.

With the feasibility to formulate metal fibres to meet specific application requirements, combined with inherent durability, sintered metal fibre filters can be cleaned in-situ without interrupting process flow, this provides the ultimate in process economics by minimising downtime.

**Typical Applications**
- Catalyst recovery and retention
- Gasification
- Chemical production
- Vent filters
- Agrochemical applications
- Liquid and gaseous ammonia
- Pharmaceutical powder recovery
- Steam filtration
  - Culinary steam
  - Process steam

**Features and Benefits**
- Resistant to high temperatures and corrosive environments
  Suitable for aggressive air and liquid filtration applications
- Can be cleaned in-situ
  Reduces downtime to a minimum, providing excellent process economics
- Pleatable structure
  Higher surface area with excellent dirt holding capacity for longer on-stream life
- High void volume
  High permeability combined with low pressure drop
A robust material is manufactured from sinter-bonded metal powders. Primarily produced in 316L grade for use in temperatures up to 540ºC (1,004ºF) depending on process conditions and offering resistance to most chemicals. Sinterflo® P media can also be produced in other grades of stainless steel and alloys such as Inconel®, Hastelloy® and Monel®.

Sinterflo® P powder media can be manufactured in both disc format or in cylinder format. For cylinders, our isostatic pressing ensures greater media uniformity with no welds, leading to increased corrosion resistance.

**Typical Applications**
- Catalyst recovery
- Polymer melt
- Gasification
- Chemical production
- Slurry oils
- Steam filtration
  - Culinary steam
  - Process steam

**Features and Benefits**
- **Resistant to high temperatures and corrosive environments**
  Suitable for aggressive air and liquid filtration applications
- **Strength and Robustness**
  Ensures reliability and longer on-stream service life
- **Excellent media uniformity**
  Allows consistent filtration and effective loading
- **Seamless structure**
  Weld free, giving increased corrosion resistance
Sinterflo® M
Metal Mesh

Precision woven meshes in various types of weaves, from plain square mesh to Dutch (Hollander) Twill Weave, to give the most defined absolute rating.

Plain square weave for simple sieving duties through various weave patterns (Reverse Plain Dutch, Broad Mesh Twill and Single Plain Weave) to Dutch Twill Weave to provide for the most comprehensive selection of surface filtration duties.

Typical Applications
- Catalyst recovery and retention
- Gasification
- Chemical production
- Vent filters
- Agrochemical applications
- Liquid and gaseous ammonia
- Steam filtration
  - Culinary steam
  - Process steam

Features and Benefits
- Good permeability
- High tensile strength
- Available from single wrap designs through to complex multi-layered structures in pleated constructions to optimise the area available
- Some meshes available in a diffusion bonded versions to increased performance security of pore shape and size
- Available in the broadest range of pore sizes of any filter media type
- Available in 316L stainless steel as standard with other alloys such as 304L stainless steel, 904L stainless steel, Inconel®, Hastelloy®, Monel® and Fecralloy® on request

Ordering Information: For ordering information please contact a member of the Sales Team.

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Sinterflo® MC
Sintered Metal Mesh Composite

Multi-layer precision filters, produced using a novel sintering process resulting in superior mechanically strong structures.

Primarily made from 316L stainless steel, also available in Inconel®, Hastelloy® and Monel® materials for use in the most aggressive environments.

Depending on atmospheric conditions, our stainless steel option can be used in temperatures up to 540°C (1,004°F), with intermittent operating peaks up to 650°C (1,202°F), and are resistant to most chemicals.

Formats available include flat sheet, custom shapes, welded cones and welded cylinders, and the materials can be manufactured in a variety of layer combinations depending on your specific application.

Standard material combinations can include perforated plates for additional support.

Sinterflo® MC is available in a range of filtration grades from 2 micron.

Typical Applications

- Powder fluidisation
- Liquid applications
- Slurry oils
- Steam filtration
- Culinary steam
- Process steam

Features and Benefits

- Fabricated shapes without expensive support structures or joining strips
- Can be cleaned repeatedly
- Non-shedding media
- Easily custom-engineered

To meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment.

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Sinterflo® FMC Fibre Mesh Composite Media for Custom Filter Elements

Sinterflo® FMC sintered fibre mesh composite material is specifically designed for the removal of particulate from challenging gaseous environments. The media provides an asymmetrical pore structure, designed to facilitate surface filtration capturing particulate on the outer surface for an 'out-to-in' flow design. This makes Sinterflo® FMC elements, which can be manufactured to a wide range of designs to suit each application, ideal for continuous on stream reverse jet cleaning applications and where optimum product recovery is required.

Porvair Filtration Group provides complete fabrication services for this material, including custom sized filter elements and blowback bags.

Sinterflo® FMC media is particularly suited to challenging environments where high operating temperatures reach up to 340°C, such as mineral, chemical and alternative energy processing.

This material is easily custom engineered to meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment.

Features and Benefits

- **Resistant to high temperatures and corrosive environments**
  Suitable for aggressive gas and liquid filtration applications.

- **Low capital cost**
  Robust and self-supporting. Fabricated elements usually do not require complex and expensive support structures or joining strips.

- **Minimal maintenance costs**
  Cartridges can be cleaned and reused, reducing replacement and maintenance costs.

- **Enhanced chemical resistance**
  Can be constructed from a wide range of materials including 316L stainless steel, Hastelloy® and Inconel® 601.

- **Uniform pore distribution**
  Provides high permeability combined with high efficiency.

- **Design and engineering versatility**
  Easily custom engineered to meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment.

Ordering Information: For ordering information please contact a member of the Sales Team.

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Example Specification for 316L for a Rotary Kiln Application

**Materials of Construction**

316L Stainless Steel

**Media Grades**

FMC16

**Gaseous Removal Efficiency**

100% at 1.6 µm

**Media Grades**

FMC16

**Air Permeability (bar (d)-m2/m3/hr)**

5.16E-06

**Thickness**

1.17mm (0.05”)

**Maximum Operating Temperature**

340°C (644°F)

**Element Dimensions**

Diameter: 80mm to 120mm (3.15” to 4.72”)

Length: Up to 4500mm (177”)

**Ordering**

This is an example specification for this material. This material is selected, engineered and manufactured specifically for each unique application. Please contact us to have your application reviewed for suitability and to have a fully costed design solution provided.

---

**Rotary Kiln Filter FIA6401 Run 2**

![Graph of Pressure drop vs Test time](image_url)

1. Fractional gaseous efficiency with SAEJ 726 test dust at 3.5cm/s velocity
Excellent chemical compatibility, exceptional strength and resistant to most acids, bases, many organic chemicals and temperatures up to 110ºC (230ºF).

Produced in both sintered porous polyethylene and polypropylene, materials are available in:
- Roll
- Sheet
- Cut shapes
- Cones
- Moulded formats

Typical Applications
- Domestic water filters
- Activated carbon filters
- Chemical filters
- Air and dust filters
- Fluidisation and aeration of bulk solids
- Battery vents
- Pneumatic silencers
- Water and effluent aeration
- Fragrance eminators
- Vacuum platens and cones
- Vacuum hold down table covers

Features and Benefits
- **Strong lightweight and self supporting**
  Versatile material that can be manufactured in a variety of shapes and sizes
- **Narrow controlled pore size distribution**
  Very efficient and effective filtration material
- **High and even porosity**
  Low pressure drop and even flow
- **Chemically inert**
  Resistant to many chemicals making it suitable for many applications
**Vyon® Material Range**

Through a range of propriety techniques, our advanced Vyon® materials deliver enhanced performance techniques. Below are the media grades and the standard and specialist treated materials available:

**Vyon® Media Grades**

<table>
<thead>
<tr>
<th>Name</th>
<th>Liquids (µm)</th>
<th>Gases (µm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vyon® T</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Vyon® M</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Vyon® D</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Vyon® F</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>Vyon® HP</td>
<td>70</td>
<td>30</td>
</tr>
</tbody>
</table>

All Vyon® grades are available in polyethylene.

Only Vyon® D, F and HP grades are available in Polypropylene.

**Vyon® Hydrophobic**

Our hydrophobic Vyon® is permanently treated to prevent the material from wetting-out in many organic solvents.
Many standard products for the process industries can be ordered using the applicable ordering guides from this section of the catalogue. Please follow the step-by-step guide on each relevant page.

Custom made products to meet specific project requirements cannot be ordered through this catalogue.

For further information, please contact a member of the Sales Team.
## End Cap Adapters

**Disposable Cartridges**

<table>
<thead>
<tr>
<th>Cartridge Code</th>
<th>Description</th>
<th>End Fitting</th>
<th>Top End Seal</th>
<th>Quantity</th>
<th>End Fitting</th>
<th>Outlet End Seal</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Code 3</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 222</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>Code 7</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 226</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>Code 8</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 222</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>N SOE</td>
<td>Recess</td>
<td>None</td>
<td></td>
<td>Flat open</td>
<td>O-ring 213</td>
<td>1</td>
</tr>
<tr>
<td>G</td>
<td>G DOE (short length)</td>
<td>Flat open</td>
<td>Flat gasket</td>
<td>1</td>
<td>Flat open</td>
<td>Flat gasket</td>
<td>1</td>
</tr>
<tr>
<td>H</td>
<td>G SOE</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Flat open</td>
<td>O-ring BS118 (fit into filter housing)</td>
<td>2</td>
</tr>
<tr>
<td>J</td>
<td>216 (218), fin</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 216</td>
<td>1</td>
</tr>
<tr>
<td>K</td>
<td>Code 2</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 226</td>
<td>2</td>
</tr>
<tr>
<td>L</td>
<td>223, fin (no lugs)</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 223</td>
<td>2</td>
</tr>
<tr>
<td>M</td>
<td>DOE</td>
<td>Flat open</td>
<td>Flat gasket</td>
<td>1</td>
<td>Flat open</td>
<td>Flat gasket</td>
<td>1</td>
</tr>
<tr>
<td>P</td>
<td>Code 18 (retro fit)</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 222</td>
<td>2</td>
</tr>
<tr>
<td>S</td>
<td>Code 28, fin (3 lugs)</td>
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<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 222</td>
<td>2</td>
</tr>
<tr>
<td>T</td>
<td>223, flat (no lugs)</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 223</td>
<td>2</td>
</tr>
<tr>
<td>U</td>
<td>224, fin</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 224</td>
<td>2</td>
</tr>
<tr>
<td>V</td>
<td>226, fin</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring 226</td>
<td>2</td>
</tr>
<tr>
<td>W</td>
<td>F 20+ Code 7 (stainless steel core)</td>
<td>Fin</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring BS226</td>
<td>2</td>
</tr>
<tr>
<td>X</td>
<td>F 20+ Code 2 (stainless steel core)</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring BS226</td>
<td>2</td>
</tr>
<tr>
<td>Y</td>
<td>BS832, flat</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring BS832</td>
<td>2</td>
</tr>
<tr>
<td>Z</td>
<td>F 20+ Code Y (stainless steel core)</td>
<td>Flat</td>
<td>None</td>
<td></td>
<td>Open</td>
<td>O-ring BS832</td>
<td>2</td>
</tr>
</tbody>
</table>

**Contact Information:**

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Email: infoUS@porvairfiltration.com
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India, Mumbai Division
Tel: +91 22 25 976464 / +91 22 25 976465
Email: infoIN@porvairfiltration.com
Sinterflo®
F/P/M

Metallic Cartridge and Elements

<table>
<thead>
<tr>
<th>Table 1</th>
<th>End Fittings</th>
<th>F</th>
<th>P</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>DOE fitting/pleated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>DOE fitting/cylindrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SOE 226 fitting/pleated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>SOE 226 fitting/cylindrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SOE 222 fitting/pleated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SOE 222 fitting/cylindrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>SOE threaded/pleated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>SOE threaded/cylindrical</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DOE: Double Open Ended fitting.
SOE: Single Open Ended fitting.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Nominal Cartridge Length*</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>125 mm (5&quot;)</td>
</tr>
<tr>
<td>10</td>
<td>250mm (10&quot;)</td>
</tr>
<tr>
<td>20</td>
<td>498mm (20&quot;)</td>
</tr>
<tr>
<td>30</td>
<td>745mm (30&quot;)</td>
</tr>
<tr>
<td>40</td>
<td>1012mm (40&quot;)</td>
</tr>
</tbody>
</table>

* Other non-standard lengths are available on request.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Micron Rating (liquid)</th>
<th>e.g.: 0040 = 40 micron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sinterflo® F &amp; P: 3µm to 60µm available, specify 'Absolute' rating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sinterflo® M: 3µm to 1000µm available, specify 'Nominal' rating</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Seal Material*</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Chemraz*</td>
</tr>
<tr>
<td>E</td>
<td>EPDM</td>
</tr>
<tr>
<td>N</td>
<td>Nitrile</td>
</tr>
<tr>
<td>P</td>
<td>PTFE (DOE only)</td>
</tr>
<tr>
<td>S</td>
<td>Silicone</td>
</tr>
<tr>
<td>F</td>
<td>FEP coated Viton® (SOE only)</td>
</tr>
<tr>
<td>T</td>
<td>FEP coated silicone (SOE only)</td>
</tr>
<tr>
<td>Y</td>
<td>FEP coated EPDM (SOE only)</td>
</tr>
<tr>
<td>V</td>
<td>Viton®</td>
</tr>
<tr>
<td>X</td>
<td>No seal</td>
</tr>
</tbody>
</table>

* Omit 'Table 4' for the threaded option.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Guard/Support Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Guard (pleated only)</td>
</tr>
<tr>
<td>S</td>
<td>Backflush support (cylindrical only)</td>
</tr>
<tr>
<td>N</td>
<td>None</td>
</tr>
</tbody>
</table>

* Omit 'Table 5' for Sinterflo® P options.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Options*</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Fin</td>
</tr>
<tr>
<td>N</td>
<td>No fin</td>
</tr>
</tbody>
</table>

* Omit 'Table 6' for the DOE option.

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Guard/Support Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Guard (pleated only)</td>
</tr>
<tr>
<td>S</td>
<td>Backflush support (cylindrical only)</td>
</tr>
<tr>
<td>N</td>
<td>None</td>
</tr>
</tbody>
</table>

* Omit 'Table 5' for Sinterflo® P options.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Options*</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Fin</td>
</tr>
<tr>
<td>N</td>
<td>No fin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Guard/Support Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Guard (pleated only)</td>
</tr>
<tr>
<td>S</td>
<td>Backflush support (cylindrical only)</td>
</tr>
<tr>
<td>N</td>
<td>None</td>
</tr>
</tbody>
</table>

* Omit 'Table 5' for Sinterflo® P options.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Options*</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Fin</td>
</tr>
<tr>
<td>N</td>
<td>No fin</td>
</tr>
</tbody>
</table>

* Omit 'Table 6' for the DOE option.

**Sinterflo® P only available in Cylindrical options

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Email: infoUS@porvairfiltration.com
Nominal Disposable Cartridges

Product Code:

Example part number: PK 045 S 3 A 8 PolyKey™, with nominal pore size 0.45µm, standard hard cage, 760mm (30") long, Code 3, silicone seals.

Please refer to the individual product datasheets within this catalogue for nominal pore ratings (Table 2) and filter versions (Table 3) available for each filter.

Table 1 Nominal

<table>
<thead>
<tr>
<th>PK</th>
<th>PolyKey™</th>
<th>MK</th>
<th>MicroKey™</th>
<th>TN</th>
<th>Tekfil™ Nominal</th>
</tr>
</thead>
</table>

Table 2 Pore Rating

Table 3 Version

<table>
<thead>
<tr>
<th>R</th>
<th>Rinsed</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Standard Hard Cage</td>
</tr>
<tr>
<td>G</td>
<td>GIANT</td>
</tr>
</tbody>
</table>

Table 4 Length (Nominal)

<table>
<thead>
<tr>
<th>1</th>
<th>250mm (10&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>510mm (20&quot;)</td>
</tr>
<tr>
<td>3</td>
<td>760mm (30&quot;)</td>
</tr>
<tr>
<td>4</td>
<td>1020mm (40&quot;)</td>
</tr>
<tr>
<td>5</td>
<td>125mm (5&quot;)</td>
</tr>
</tbody>
</table>

Table 5 Adapters

<table>
<thead>
<tr>
<th>A</th>
<th>Code 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Code 7</td>
</tr>
<tr>
<td>C</td>
<td>Code 8</td>
</tr>
<tr>
<td>F</td>
<td>N SOE</td>
</tr>
<tr>
<td>G</td>
<td>G DOE (short length)</td>
</tr>
<tr>
<td>H</td>
<td>G SOE</td>
</tr>
<tr>
<td>J</td>
<td>216 (218), fin</td>
</tr>
<tr>
<td>K</td>
<td>Code 2</td>
</tr>
<tr>
<td>L</td>
<td>223, fin (no lugs)</td>
</tr>
<tr>
<td>M</td>
<td>DOE</td>
</tr>
<tr>
<td>S</td>
<td>Code 28, fin (3 lugs)</td>
</tr>
<tr>
<td>T</td>
<td>223, flat (no lugs)</td>
</tr>
<tr>
<td>U</td>
<td>224, fin</td>
</tr>
<tr>
<td>V</td>
<td>226, fin</td>
</tr>
<tr>
<td>Y</td>
<td>BSS832, flat</td>
</tr>
</tbody>
</table>

SOE: Single Open Ended.
DOE: Double Open Ended.

Table 6 Seals

<table>
<thead>
<tr>
<th>A</th>
<th>Ethylene Propylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Silicone</td>
</tr>
<tr>
<td>C</td>
<td>Viton®</td>
</tr>
<tr>
<td>D</td>
<td>Nitrile</td>
</tr>
<tr>
<td>E</td>
<td>FEP Encapsulated Viton®</td>
</tr>
<tr>
<td>G</td>
<td>FEP Encapsulated Silicone</td>
</tr>
<tr>
<td>J</td>
<td>DOE PTFE</td>
</tr>
</tbody>
</table>

Table 7 Additional Options

<table>
<thead>
<tr>
<th>A</th>
<th>N+U</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Non-steamable (no insert)</td>
</tr>
<tr>
<td>P</td>
<td>Pharmaceutical grade**</td>
</tr>
<tr>
<td>U</td>
<td>Unbranded</td>
</tr>
</tbody>
</table>

All GIANT filters are 4.5" (114mm) diameter and available in length 1 and 2, with code A and M end caps.
# Pre-Filters
Disposable Cartridges

Example part number: K01S2B8P Klearfil®: 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

Please refer to the individual product datasheets within this catalogue for absolute pore ratings (Table 2) and filter versions (Table 3) available for each pre-filter. For WF please refer to individual datasheets for available pore sizes.

### Table 1: Pre-Filter

<table>
<thead>
<tr>
<th>CR</th>
<th>Carbofil®</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>Cryptofil®</td>
</tr>
<tr>
<td>K</td>
<td>Klearfil®</td>
</tr>
<tr>
<td>M</td>
<td>Microfil®</td>
</tr>
<tr>
<td>P</td>
<td>Polyfil™ II</td>
</tr>
<tr>
<td>TA</td>
<td>Tekfil™ Absolute</td>
</tr>
<tr>
<td>GV</td>
<td>Tekfil™ GV</td>
</tr>
<tr>
<td>R</td>
<td>Trapfil™</td>
</tr>
</tbody>
</table>

### Table 2: Absolute Pore Rating*

| P5  | 0.5µm   |
| P6  | 0.6µm   |
| P8  | 0.8µm   |
| 01  | 1µm     |
| 02  | 2µm     |
| 03  | 3µm     |
| 05  | 5µm     |
| 07  | 7µm     |
| 10  | 10µm    |
| 15  | 15µm    |
| 20  | 20µm    |
| 30  | 30µm    |
| 40  | 40µm    |
| 60  | 60µm    |
| 75  | 75µm    |
| 90  | 90µm    |
| 105 | 105µm   |

* For the Carbofil® filter select the 05 (5µm) option only.

### Table 3: Version

| R   | Rinsed          |
| S   | Standard Hard Cage |
| W*  | Wide format     |

*Only available in Microfil®, Polyfil™ II and Tekfil™ Absolute.

### Table 4: Length (Nominal)

| 250mm (10") |
| 510mm (20") |
| 760mm (30") |
| 1020mm (40") |
| 125mm (5")  |

### Table 5: Adapters

| A   | Code 3          |
| B   | Code 7          |
| C   | Code 8          |
| F   | N SOE           |
| G   | G DOE (short length) |
| H   | G SOE           |
| J   | 216 (218), fin |
| K   | Code 2          |
| L   | 223, fin (no lugs) |
| M   | DOE             |
| S   | Code 28, fin (3 lugs) |
| T   | 223, flat (no lugs) |
| U   | 224, fin        |
| V   | 226, fin        |
| Y   | 85832, flat     |

SOE: Single Open Ended. DOE: Double Open Ended.

### Table 6: Seals

| A   | Ethylene Propylene |
| B   | Silicone           |
| C   | Viton®            |
| D   | Nitrile           |
| E   | FEP Encapsulated Viton® |
| G   | FEP Encapsulated Silicone |
| J   | DOE PTFE          |

### Table 7: Additional Options

| A   | N+U                |
| N   | Non-steamable (no insert) |
| P   | Pharmaceutical grade** |
| U   | Unbranded          |

** Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 ‘Filters’ and 210.3 (b) (6), and United States Pharmacopeia 788 ‘Particulate Matter in injections’. These products contain a stainless steel insert.

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Membrane Filters
Disposable Cartridges

**Example part number:** BT 20 S 2 B P Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

Please refer to the individual product data sheets within this catalogue for absolute pore ratings (Table 2) and filter versions (Table 3) available for each membrane filter.

### Table 1: Membrane Filter

<table>
<thead>
<tr>
<th>Code</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Aquafil™</td>
</tr>
<tr>
<td>BT</td>
<td>Biofil™</td>
</tr>
<tr>
<td>BTP</td>
<td>Biofil™ Plus</td>
</tr>
<tr>
<td>C</td>
<td>Chemifil™</td>
</tr>
<tr>
<td>F</td>
<td>Fluorofil™</td>
</tr>
<tr>
<td>HT</td>
<td>Hydrofil™</td>
</tr>
<tr>
<td>HTP</td>
<td>Hydrofil™ Plus</td>
</tr>
<tr>
<td>VT</td>
<td>Vinofil™</td>
</tr>
</tbody>
</table>

*Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.

### Table 2: Absolute Pore Rating

<table>
<thead>
<tr>
<th>Code</th>
<th>Pore Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>0.02µm</td>
</tr>
<tr>
<td>04</td>
<td>0.04µm</td>
</tr>
<tr>
<td>10</td>
<td>0.1µm</td>
</tr>
<tr>
<td>20</td>
<td>0.2µm</td>
</tr>
<tr>
<td>45</td>
<td>0.45µm</td>
</tr>
<tr>
<td>65</td>
<td>0.65µm</td>
</tr>
<tr>
<td>100</td>
<td>1.0µm</td>
</tr>
<tr>
<td>120</td>
<td>1.2µm</td>
</tr>
</tbody>
</table>

### Table 3: Version

<table>
<thead>
<tr>
<th>Code</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Economy*</td>
</tr>
<tr>
<td>R</td>
<td>Rinsed</td>
</tr>
<tr>
<td>S</td>
<td>Standard</td>
</tr>
<tr>
<td>W</td>
<td>Stainless Steel Core**</td>
</tr>
</tbody>
</table>

*Biofil™ only.
**Fluorofil™ Plus only.

### Table 4: Length (Nominal)

<table>
<thead>
<tr>
<th>Code</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>250mm</td>
</tr>
<tr>
<td>2</td>
<td>510mm</td>
</tr>
<tr>
<td>3</td>
<td>760mm</td>
</tr>
<tr>
<td>4</td>
<td>1020mm</td>
</tr>
<tr>
<td>5</td>
<td>125mm</td>
</tr>
</tbody>
</table>

### Table 5: Adapters

<table>
<thead>
<tr>
<th>Code</th>
<th>Adapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Code 3</td>
</tr>
<tr>
<td>B</td>
<td>Code 7</td>
</tr>
<tr>
<td>C</td>
<td>Code 8</td>
</tr>
<tr>
<td>F</td>
<td>N SOE</td>
</tr>
<tr>
<td>G</td>
<td>G DOE (short length)</td>
</tr>
<tr>
<td>H</td>
<td>G SOE</td>
</tr>
<tr>
<td>J</td>
<td>216 (218), fin</td>
</tr>
<tr>
<td>K</td>
<td>Code 2</td>
</tr>
<tr>
<td>L</td>
<td>223, fin [no lugs]</td>
</tr>
<tr>
<td>M</td>
<td>DOE</td>
</tr>
<tr>
<td>S</td>
<td>Code 28, fin (3 lugs)</td>
</tr>
<tr>
<td>T</td>
<td>223, flat [no lugs]</td>
</tr>
<tr>
<td>U</td>
<td>224, fin</td>
</tr>
<tr>
<td>V</td>
<td>226, fin</td>
</tr>
<tr>
<td>W</td>
<td>F20+ Code 7 (stainless steel core)</td>
</tr>
<tr>
<td>X</td>
<td>F20+ Code 2 (stainless steel core)</td>
</tr>
<tr>
<td>Y</td>
<td>BS832, flat</td>
</tr>
<tr>
<td>Z</td>
<td>F20+ Code Y (stainless steel core)</td>
</tr>
</tbody>
</table>

SOE: Single Open Ended.
DOE: Double Open Ended.

### Table 6: Seals

<table>
<thead>
<tr>
<th>Code</th>
<th>Seal Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Ethylene Propylene</td>
</tr>
<tr>
<td>B</td>
<td>Silicone</td>
</tr>
<tr>
<td>C</td>
<td>Viton®</td>
</tr>
<tr>
<td>D</td>
<td>Nitrile</td>
</tr>
<tr>
<td>E</td>
<td>FEP Encapsulated Viton®</td>
</tr>
<tr>
<td>F</td>
<td>FEP Encapsulated Silicone</td>
</tr>
<tr>
<td>G</td>
<td>DOE PTFE</td>
</tr>
</tbody>
</table>

### Table 7: Additional Options

<table>
<thead>
<tr>
<th>Code</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>N+U</td>
</tr>
<tr>
<td>N</td>
<td>Non-steamable (no insert)</td>
</tr>
<tr>
<td>P</td>
<td>Pharmaceutical grade*</td>
</tr>
<tr>
<td>U</td>
<td>Unbranded</td>
</tr>
</tbody>
</table>

*Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration’s regulations CFR Title 21, parts 211.72 ‘Filters’ and 210.3 (b) (6), and United States Pharmacopoeia 788 ‘Particulate Matter in Injections’. These products contain a stainless steel insert.
**Junior Filters**
Disposable Cartridges

**Example part number:** JB 20 50 B Biofil™, J-Style, 0.2µm, 136mm (5") long, silicone seal.

Please refer to the individual product datasheets within this catalogue for absolute pore ratings (Table 2) available for each junior filter.

<table>
<thead>
<tr>
<th>Product Code:</th>
<th>Table 1</th>
<th>Table 2</th>
<th>Table 3</th>
<th>Table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>J-Style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JB</td>
<td>Biofil™</td>
<td>20</td>
<td>0.2µm</td>
<td>B</td>
</tr>
<tr>
<td>JF</td>
<td>Fluorofil™</td>
<td>45</td>
<td>0.45µm</td>
<td>½&quot; BSP</td>
</tr>
<tr>
<td>JM</td>
<td>Microfil™</td>
<td>P5</td>
<td>0.5µm</td>
<td>X</td>
</tr>
<tr>
<td>JP</td>
<td>Polyfil™</td>
<td>P8</td>
<td>0.8µm</td>
<td></td>
</tr>
<tr>
<td>F20VENT</td>
<td>Ventafil™</td>
<td>01</td>
<td>1µm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>02</td>
<td>2µm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>05</td>
<td>5µm</td>
<td></td>
</tr>
<tr>
<td><strong>S-Style</strong></td>
<td></td>
<td>Table 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>Biofil™</td>
<td>Length (Nominal)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF</td>
<td>Fluorofil™</td>
<td>25</td>
<td>77.5mm (2.5&quot;)</td>
<td></td>
</tr>
<tr>
<td>SM</td>
<td>Microfil™</td>
<td>50</td>
<td>136mm (5&quot;)</td>
<td></td>
</tr>
<tr>
<td>SP</td>
<td>Polyfil™</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L-Style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LB</td>
<td>Biofil™</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LF</td>
<td>Fluorofil™</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LM</td>
<td>Microfil™</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LP</td>
<td>Polyfil™</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contact Information:**

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  - Tel: +44 (0) 1425 612010
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- **US, Ashland Division**
  - Tel: +1 804 550 1600
  - Email: infoUS@porvairfiltration.com
# Filter Housings

## Single and Multiple Round Housings

### FIA 2110 Single Round Housing

**Product Code:** FIA2110

#### Table 1  Bowl Length

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Bowl Length</th>
<th>Nominal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>310mm (12.2&quot;)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>580mm (22.8&quot;)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>800mm (31.5&quot;)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1087mm (42.5&quot;)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1080mm (42.5&quot;)</td>
<td></td>
</tr>
</tbody>
</table>

*Add 45mm to the bowl length for 226 style elements.

#### Table 2  Connection Option

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Connection Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1&quot; BSP female para. in/out standard</td>
</tr>
<tr>
<td>2</td>
<td>3/4&quot; BSP female para. in/out via adapter</td>
</tr>
<tr>
<td>3</td>
<td>2&quot; ASA 150lb flanges in/out</td>
</tr>
<tr>
<td>4</td>
<td>1&quot; RJT fittings in/out</td>
</tr>
<tr>
<td>5</td>
<td>1&quot; Tri-clover in/out</td>
</tr>
<tr>
<td>6</td>
<td>3/4&quot; BSPPP female in/out via adapter</td>
</tr>
<tr>
<td>7</td>
<td>1 1/2&quot; ASA 150lb flanges in/out</td>
</tr>
<tr>
<td>8</td>
<td>1&quot; NPT in/out</td>
</tr>
</tbody>
</table>

#### Table 3  Element Option

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Element Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>222</td>
</tr>
<tr>
<td>2</td>
<td>DDE</td>
</tr>
<tr>
<td>3</td>
<td>226p</td>
</tr>
</tbody>
</table>

#### Table 4  Indicator/Vent Fitted

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Indicator/Vent Fitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None fitted</td>
</tr>
<tr>
<td>G</td>
<td>Indicator fitted</td>
</tr>
<tr>
<td>V</td>
<td>Vent fitted (2 way)</td>
</tr>
<tr>
<td>S</td>
<td>Vent fitted (3 way)</td>
</tr>
</tbody>
</table>

#### Table 5  Drain Tap

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Drain Tap</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>None fitted (plug only)</td>
</tr>
<tr>
<td>D</td>
<td>Tap fitted</td>
</tr>
</tbody>
</table>

#### Table 6  Bowl Seal

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Bowl Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>Viton® Standard</td>
</tr>
<tr>
<td>N</td>
<td>Nitrile</td>
</tr>
<tr>
<td>S</td>
<td>Silicone</td>
</tr>
<tr>
<td>E</td>
<td>Epom</td>
</tr>
<tr>
<td>F</td>
<td>PTFE coated Viton® Standard</td>
</tr>
</tbody>
</table>

Note: Other sizes and special housings can also be accommodated on request.

---

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**US, Ashland Division**
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RA 2600 Multiple Round Housing

**Product Code:** FIA2600

**Table 1** Number Round

| Available in rounds ranging from 2-30*.  
| e.g: 2 round = 2, 10 round = 10. |

* Excluding 6 and 8 round.

**Table 2** Standard Length

| 10 | 250mm (9.8") |
| 20 | 498mm (19.6") |
| 30 | 745mm (29.3") |
| 40 | 1012mm (39.8") |

**Table 3** Element Option

| B | Code 7: 226 fin |
| C | Code 8: 222 fin |
| M | DOE knife edge |

**Table 4** Connection Option

| 1 | 2" BSPT male |
| 2 | 2" ASA 150lb flanges |
| 3 | 2" RJ T |
| 4 | 2" sch. 40 stubb pipes |
| 5 | 1½" ASA 150lb flanges |
| 6 | 2" NPT male |
| 7 | 1¼" BSPT male |

**Table 4** Seal

| V | Viton® |
| N | Nitrile |
| S | Silicone |
| P | PTFE |
| E | EPDM |

Note: Other sizes and special housings can also be accommodated on request.
Metallic Last Chance Filters for the Printing Industry

Minimum order quantity for each filter is 20 units.

**Final Ink Filter**

*Product Code: 8069 - Table 1*

<table>
<thead>
<tr>
<th>Micron Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0005B  5µm</td>
</tr>
<tr>
<td>0015B  15µm</td>
</tr>
<tr>
<td>0025B  25µm</td>
</tr>
<tr>
<td>0040B  40µm</td>
</tr>
</tbody>
</table>

**In-Line Filter** *(30mm Stainless Steel)*

*Product Code: 8073 - 11 - 02 - 0010B*

**Pleated Unrimmed Disc Filter**

*Product Code: 8071 - 01 - Table 1*

<table>
<thead>
<tr>
<th>Micron Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>0002B  2µm</td>
</tr>
<tr>
<td>0005B  5µm</td>
</tr>
<tr>
<td>0010B  10µm</td>
</tr>
<tr>
<td>0020B  20µm</td>
</tr>
</tbody>
</table>

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**Microdisc™ 3SS** (30mm Stainless Steel Disc Filter)

**Product Code:** 8067 -  
**Table 1** brigght

<table>
<thead>
<tr>
<th>Connectors</th>
<th><strong>Micron Ratings</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>2.6mm O/D barb</td>
</tr>
<tr>
<td>22</td>
<td>4.9mm O/D barb</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Nominal for Mesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>0005B</td>
<td>5µm</td>
</tr>
<tr>
<td>0010B</td>
<td>10µm</td>
</tr>
<tr>
<td>0020B</td>
<td>20µm</td>
</tr>
</tbody>
</table>

**Microdisc™ 4SS** (47mm Stainless Steel Disc Filter)

**Product Code:** 8077 -  
**Table 1**

<table>
<thead>
<tr>
<th>Connectors</th>
<th><strong>Micron Ratings</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>2.6mm O/D barb</td>
</tr>
<tr>
<td>22</td>
<td>4.9mm O/D barb</td>
</tr>
<tr>
<td>33</td>
<td>3mm Jaco®</td>
</tr>
<tr>
<td>44</td>
<td>6.5mm O/D barb</td>
</tr>
<tr>
<td>66</td>
<td>¼” NPT</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Nominal for Mesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>0005B</td>
<td>5µm</td>
</tr>
<tr>
<td>0010B</td>
<td>10µm</td>
</tr>
<tr>
<td>0020B</td>
<td>20µm</td>
</tr>
</tbody>
</table>

**Grid Filter**

**Product Code:** 8156 -  
**Table 1**

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Nominal for Mesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>0003</td>
<td>3µm</td>
</tr>
<tr>
<td>0005</td>
<td>5µm</td>
</tr>
<tr>
<td>0010</td>
<td>10µm</td>
</tr>
</tbody>
</table>

**Table 2**

<table>
<thead>
<tr>
<th>Filter Media</th>
<th>Nominal for Mesh</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>St. Steel 316</td>
</tr>
</tbody>
</table>

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**India, Mumbai Division**
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Other connections available upon request.
Disposable Air and Last Chance Filters for the Printing Industry

Minimum order quantity for each filter is 20 units.

**Microdisc™ 1PA** (15mm S-Vent Disc Filter) 0-2µm

*Product Code: 8163*

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Micron Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Jaco®</td>
<td>0005B 5µm</td>
</tr>
<tr>
<td>22 Female luer</td>
<td>0010B 10µm</td>
</tr>
<tr>
<td></td>
<td>0020B 20µm</td>
</tr>
<tr>
<td></td>
<td>0050B 50µm</td>
</tr>
</tbody>
</table>

**Microdisc™ 2PA** (25mm S-Vent Disc Filter) 0-2µm

*Product Code: 8164*

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Micron Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 3mm</td>
<td>0005B 5µm</td>
</tr>
<tr>
<td>22 Female luer</td>
<td>0010B 10µm</td>
</tr>
<tr>
<td></td>
<td>0020B 20µm</td>
</tr>
<tr>
<td></td>
<td>0050B 50µm</td>
</tr>
</tbody>
</table>

**Microdisc™ 3PS** (33mm Disc Filter)

*Product Code: 8159 - Table 1 - Table 2 - Table 3*

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Connectors</th>
<th>Housings</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Jaco®</td>
<td>12 White acetal</td>
<td></td>
</tr>
<tr>
<td>22 Female luer</td>
<td>13 Black acetal</td>
<td></td>
</tr>
</tbody>
</table>

**Microdisc™ 4PS** (45mm Standard Disc Filter)

*Product Code: 8111 - Table 1 - Table 2 - Table 3*

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Connectors</th>
<th>Micron Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 Luer</td>
<td>22 White acetal</td>
<td></td>
</tr>
<tr>
<td>11 CPC</td>
<td>33 Black acetal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0005B 5µm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0010B 10µm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0020B 20µm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0050B 50µm</td>
<td></td>
</tr>
</tbody>
</table>

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Email: infoUS@porvairfiltration.com
**Microdisc™ 4PV** *(45mm Pre-Pump Disc Filter)*

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Micron Ratings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>221 1/4&quot; Jaco®</td>
<td>0005B 5µm</td>
</tr>
<tr>
<td>222 6mm Jaco®</td>
<td>0010B 10µm</td>
</tr>
<tr>
<td></td>
<td>0015B 15µm</td>
</tr>
<tr>
<td></td>
<td>0020B 20µm</td>
</tr>
<tr>
<td></td>
<td>0050B 50µm</td>
</tr>
</tbody>
</table>

*Other micron ratings available, up to 250 micron.*

**Microdisc™ 7PS** *(74mm Disc Filter)*

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Micron Ratings</th>
<th>Housings</th>
</tr>
</thead>
<tbody>
<tr>
<td>221 1/4&quot; Jaco®</td>
<td>0005B 5µm</td>
<td>11 Natural</td>
</tr>
<tr>
<td>222 6mm Jaco®</td>
<td>0010B 10µm</td>
<td>13 Opaque black</td>
</tr>
<tr>
<td></td>
<td>0020B 20µm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0050B 50µm</td>
<td></td>
</tr>
</tbody>
</table>

**Bullet Filter** *(5µm and 10µm)*

<table>
<thead>
<tr>
<th>Micron Rating (Nominal)</th>
<th>Tube Fitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>0005 5µm</td>
<td>1 Slip taper</td>
</tr>
<tr>
<td>0020 20µm</td>
<td>2 Barbed</td>
</tr>
</tbody>
</table>

**In-Line Filter** *(PEEK)*

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>0003B 3µm</td>
<td>Black</td>
</tr>
<tr>
<td>0005B 5µm</td>
<td>Natural</td>
</tr>
</tbody>
</table>

Available in black/natural colours.

**Last Chance Inkjet Filter**

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Connectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>0005B 3µm</td>
<td>23 2.6mm barb</td>
</tr>
<tr>
<td>0005B 5µm</td>
<td></td>
</tr>
<tr>
<td>0050B 50µm</td>
<td></td>
</tr>
</tbody>
</table>
Capsule Filters for the Printing Industry

Minimum order quantity for each filter is 20 units.

**Microcap™ (Fully Moulded)**

**Product Code: 8089**

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050</td>
<td>0.5µm</td>
</tr>
<tr>
<td>0100</td>
<td>1µm</td>
</tr>
<tr>
<td>0300</td>
<td>3µm</td>
</tr>
<tr>
<td>0500</td>
<td>5µm</td>
</tr>
<tr>
<td>1000</td>
<td>10µm</td>
</tr>
<tr>
<td>2000</td>
<td>20µm</td>
</tr>
<tr>
<td>4000</td>
<td>40µm</td>
</tr>
<tr>
<td>6000</td>
<td>60µm</td>
</tr>
</tbody>
</table>

**Filter Media**

<table>
<thead>
<tr>
<th>Filter Media</th>
<th>Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Polyfil™</td>
</tr>
<tr>
<td>5</td>
<td>Klearfil™</td>
</tr>
</tbody>
</table>

**Connectors**

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Table 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>¼&quot; barb</td>
</tr>
<tr>
<td>DD</td>
<td>¼&quot; NPT (male)</td>
</tr>
<tr>
<td>FF</td>
<td>QRC</td>
</tr>
<tr>
<td>GG1</td>
<td>¼&quot; Jaco® 90°</td>
</tr>
<tr>
<td>GG2</td>
<td>6mm Jaco® 90°</td>
</tr>
<tr>
<td>JJ1</td>
<td>¼&quot; Jaco®</td>
</tr>
<tr>
<td>JJ2</td>
<td>6mm Jaco®</td>
</tr>
<tr>
<td>PP</td>
<td>Luer</td>
</tr>
<tr>
<td>QQ</td>
<td>Luer 90°</td>
</tr>
</tbody>
</table>

**Housings**

<table>
<thead>
<tr>
<th>Housings</th>
<th>Table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Natural</td>
</tr>
<tr>
<td>C</td>
<td>Opaque black</td>
</tr>
</tbody>
</table>

**Micropin™**

**Product Code: 8096**

<table>
<thead>
<tr>
<th>Micron Ratings</th>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050</td>
<td>0.5µm</td>
</tr>
<tr>
<td>0100</td>
<td>1µm</td>
</tr>
<tr>
<td>0300</td>
<td>3µm</td>
</tr>
<tr>
<td>0500</td>
<td>5µm</td>
</tr>
<tr>
<td>1000</td>
<td>10µm</td>
</tr>
<tr>
<td>2000</td>
<td>20µm</td>
</tr>
<tr>
<td>4000</td>
<td>40µm</td>
</tr>
<tr>
<td>6000</td>
<td>60µm</td>
</tr>
</tbody>
</table>

**Filter Media**

<table>
<thead>
<tr>
<th>Filter Media</th>
<th>Table 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Polyfil™</td>
</tr>
<tr>
<td>2</td>
<td>Klearfil™</td>
</tr>
</tbody>
</table>

**Connectors**

<table>
<thead>
<tr>
<th>Connectors</th>
<th>Table 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF</td>
<td>QRC</td>
</tr>
<tr>
<td>JJ1</td>
<td>¼&quot; Jaco®</td>
</tr>
<tr>
<td>JJ2</td>
<td>6mm Jaco®</td>
</tr>
</tbody>
</table>

**Housings**

<table>
<thead>
<tr>
<th>Housings</th>
<th>Table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Natural</td>
</tr>
<tr>
<td>C</td>
<td>Opaque black</td>
</tr>
</tbody>
</table>

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Microjet™

**Product Code:** 8131 - 1 - LL -

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