porvair
filtration group

Filtration Catalogue

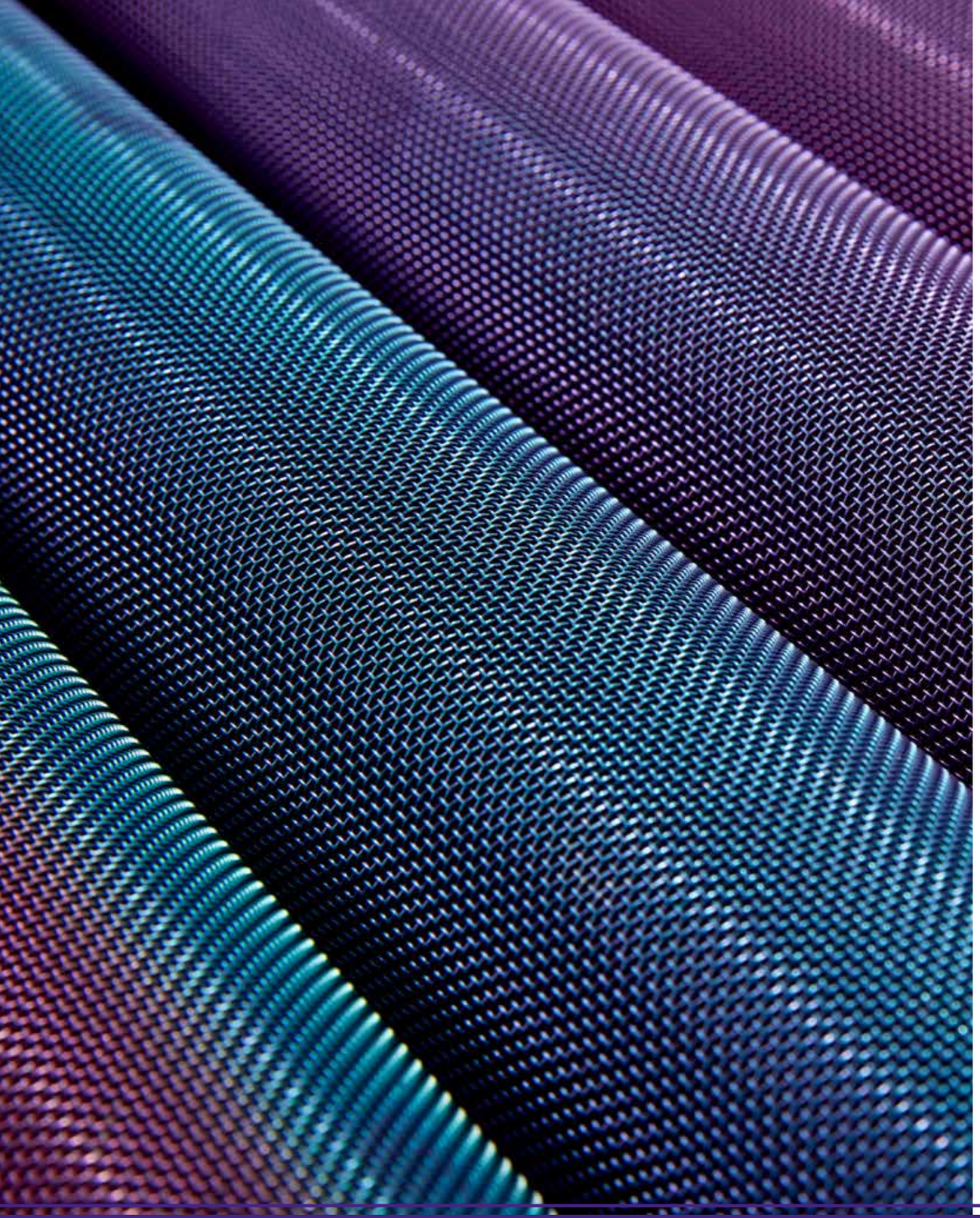
Product Range 2025

Filtration Solutions for Tomorrow's World




World Class Filtration Solutions

www.porvairfiltration.com



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Filtration Catalogue

Product Range 2025

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Contents by Product

Porvair Filtration Group

Table of Contents

Contact Information:

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

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

India, Mumbai Division
Tel: +91 22 2081 1148
infoIN@porvairfiltration.com

Biofil™ 3 Plus Double Layer Polyethersulfone Membrane Cartridge Filters	108-109	✓	✓	✓	✓							
Fluorofil™ (F Series) ePTFE Membrane Cartridge Filters	110-111	✓	✓	✓								
Fluorofil™ Plus (F Series) High Flow Sterlie Gas Filters with ePTFE Membrane	112-113	✓	✓	✓								
Fluorofil™ F100 (F Series) PTFE Membrane Cartridges for Solvent Filtration	114-115		✓	✓								
Hydrofil™ (HT Series) Nylon 6.6 Membrane Cartridge Filters	116-117	✓	✓	✓				✓				
Hydrofil™ Plus (HTP Series) Dual Nylon 6.6 Layer Membrane Cartridge Filters	118-119	✓	✓	✓				✓				
Teffil™ Superior (FL Series) PTFE Membrane Filters	120-121			✓								
Teffil™ HF (FL Series) High Flow PTFE Membrane Filters	122-123			✓								
Vinofil™ (VT Series) Double Layer Membrane Filters for Wine and Beer Filtration	124-125	✓										
Junior Membrane Filters												
Biofil™ 2 Junior Polyethersulfone Membrane Cartridge Filters for Small-scale Applications	126-127	✓	✓	✓	✓							
Hydrofil™ Junior Nylon 6.6 Membrane Cartridge Filters	128-129		✓	✓								
Fluorofil™ Junior ePTFE Membrane Cartridge Filters for Small-scale Applications	130-131	✓	✓									
Ventalfil™ ePTFE Membrane Cartridge Filters for Autoclave Venting	132-133		✓	✓								
Filter Housings												
Stainless Steel Filter Housings Sanitary and Industrial	134	✓	✓	✓	✓	✓	✓					
Plastic Filter Housings for a Wide Range of Process Applications	135	✓	✓	✓	✓	✓						

Bag Filters and Housings												
GIANT Filter Bags Polypropelene and Polyester	138-139	✓		✓	✓	✓						
GIANT Series Bag Filter Housings	140-141	✓		✓	✓	✓						

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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

ISO 9001:2015, EN9100:2018 / AS9100 Rev D certified
CAA Part 21 Subpart G approved
JOSCAR accredited.

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

ISO9001:2015 approved.

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

Europe

We also have a large network of distributors within Europe who distribute our products.

For more information, please contact our New Milton Office.

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.

ISO9001:2015 approved. AS9100 Rev D approved
NSF Certified.

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

ISO9001:2015 approved.

Porvair Filtration Group Inc., Caribou Division
15 Armco Avenue
Caribou, Maine 04736
USA

Tel: +1 207 493 3027
Email: infoUS@porvairfiltration.com

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

ISO9001:2015 approved.

Porvair Filtration Group Inc., Boise Division
1226 Caldwell Boulevard
Nampa, Idaho 83651
USA

Tel: +1 208 461 2090
Email: infoUS@porvairfiltration.com

Mumbai, Maharashtra, India

Our Mumbai Division provides an operational base for the sale of an extensive range of products along with complete filtration system deign as per customer requirements; including the engineering, design and supply of complete filtration packages for complex projects.

Porvair Filtration India PVT. Ltd., Mumbai Division
401, 4th floor, Plot No C-3, Centrum IT Park,
Wagle Estate, Near Mulund Checknaka,
S.G. Barve Road, Thane West, Maharashtra, 400604

Tel: +91 22 2081 1148
Email: infoIN@porvairfiltration.com




Product Innovation, Manufacturing, Testing and Quality

We have a policy of continuous improvement in all areas of our 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 technologies to give full structural assurance capability.

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 worldwide.

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 knowledge and strong ethos of working closely with our customers, ensures that we supply filtration solutions that meet specific 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.

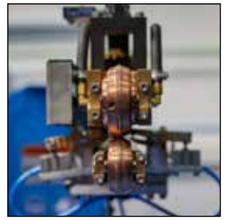
Technical Support Services

- **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 the 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.





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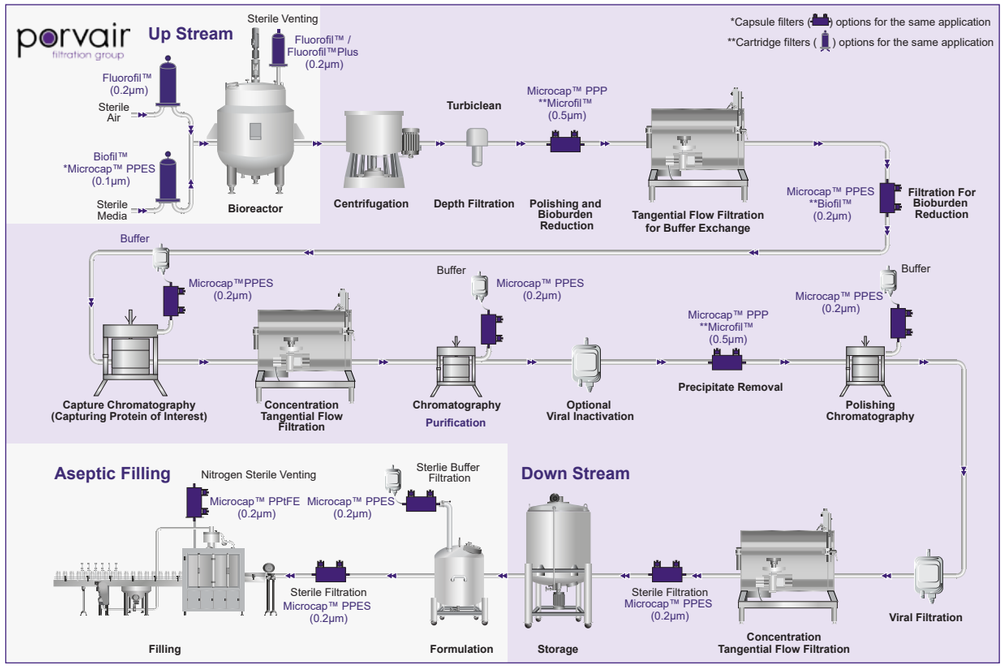
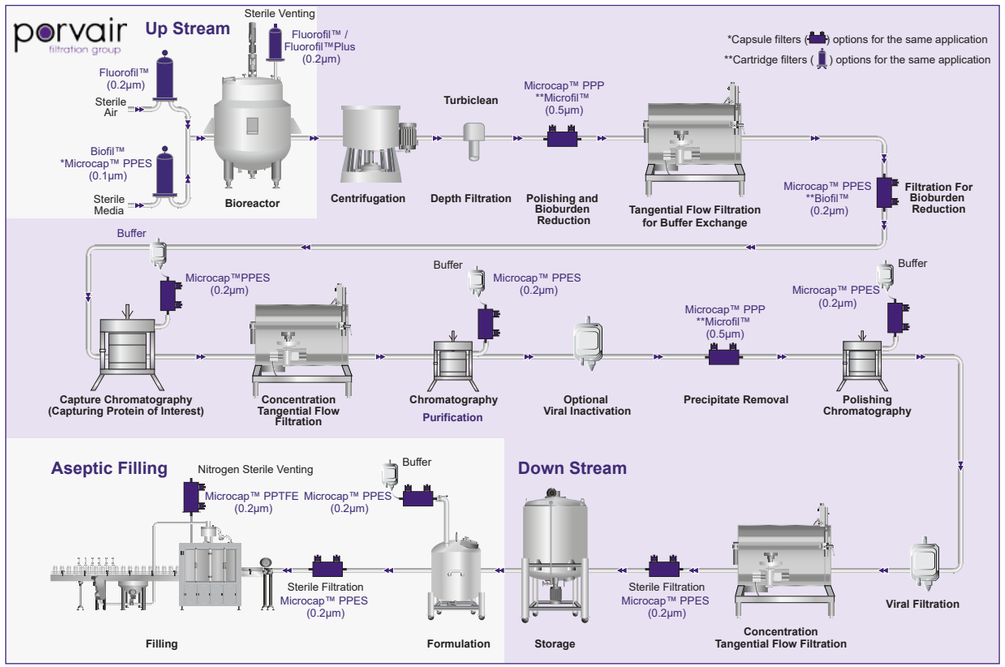
Bio-Pharmaceutical Applications

Aseptic Fill and Finish

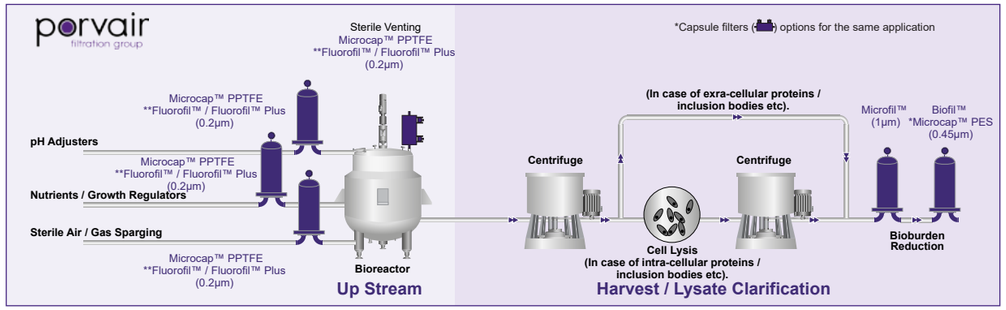


Downstream Processing

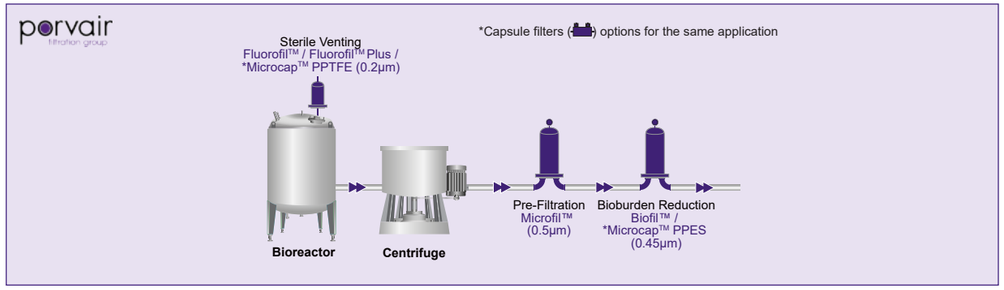


Bio-Pharmaceutical Applications

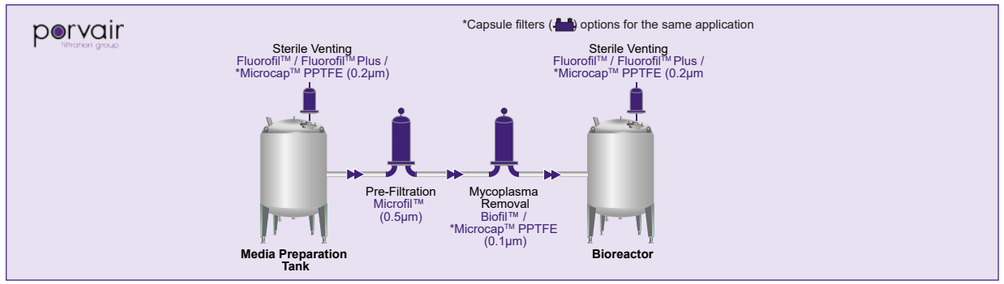
Harvesting and Clarification: Microbial Fermentation Broth Clarification



Harvesting and Clarification: Mammalian Cell Culture Clarification



Mammalian Cell Culture



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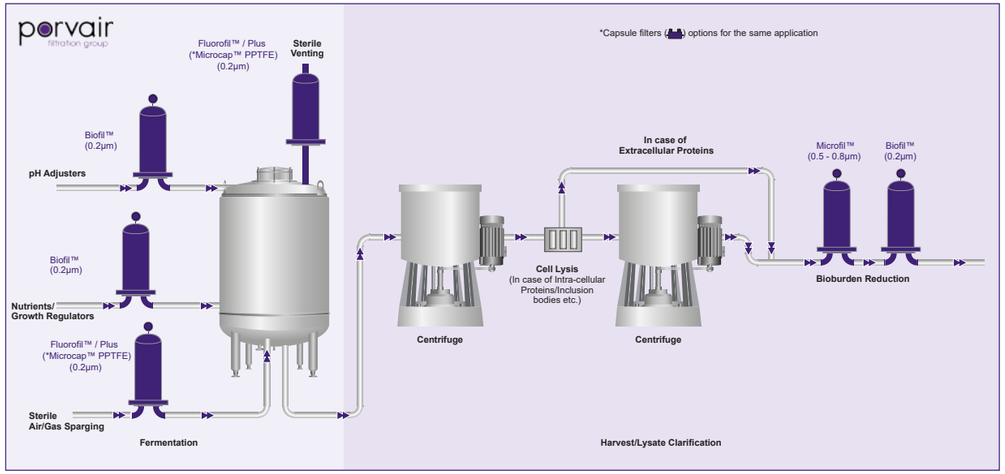
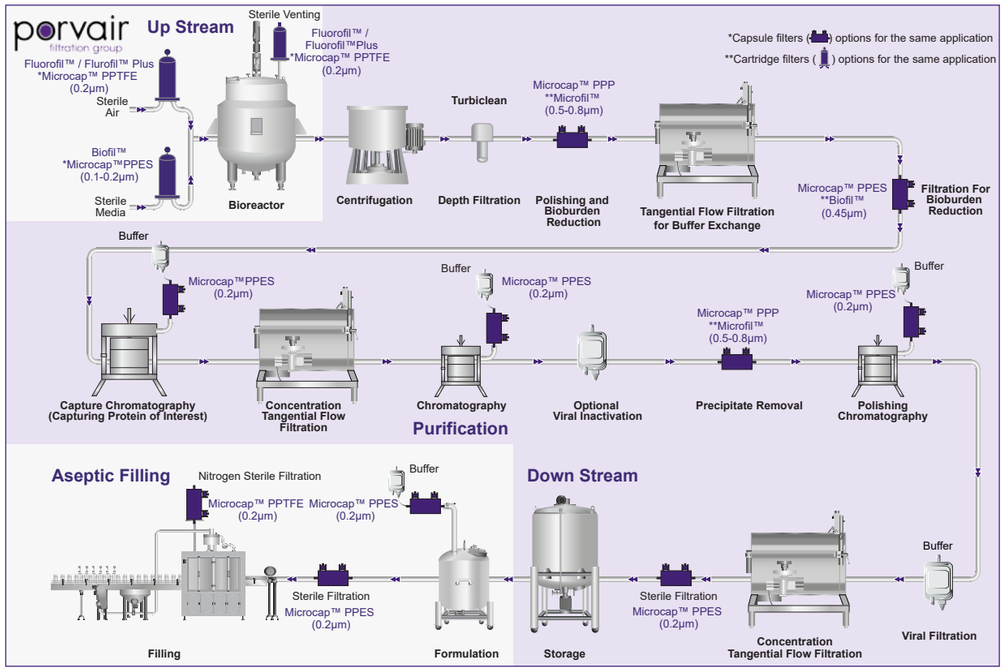
Bio-Pharmaceutical Applications

Microbial Fermentation

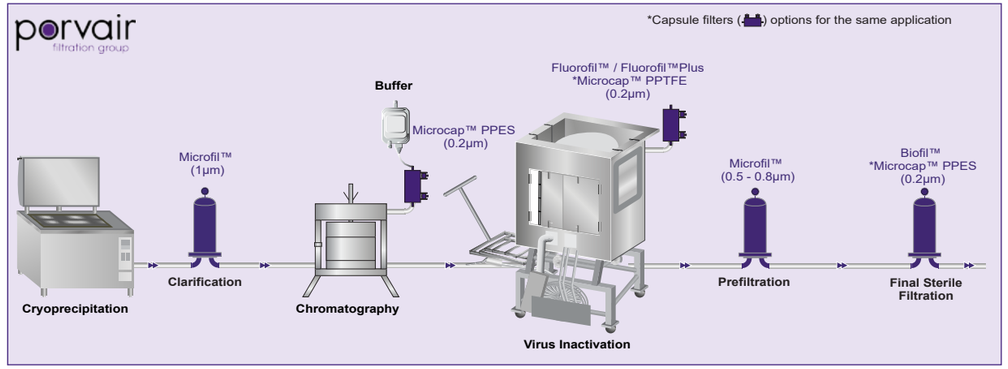


Monoclonal Antibodies

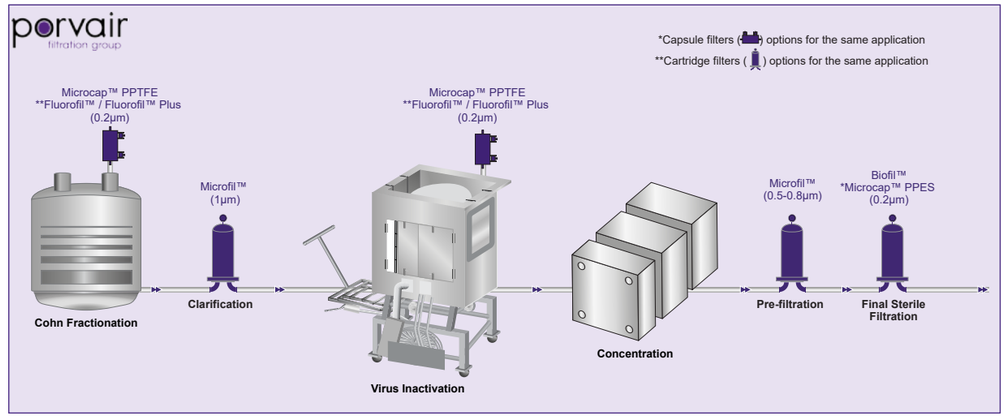


Bio-Pharmaceutical Applications

Plasma Fractionation: Clotting Factors



Plasma Fractionation: Albumin



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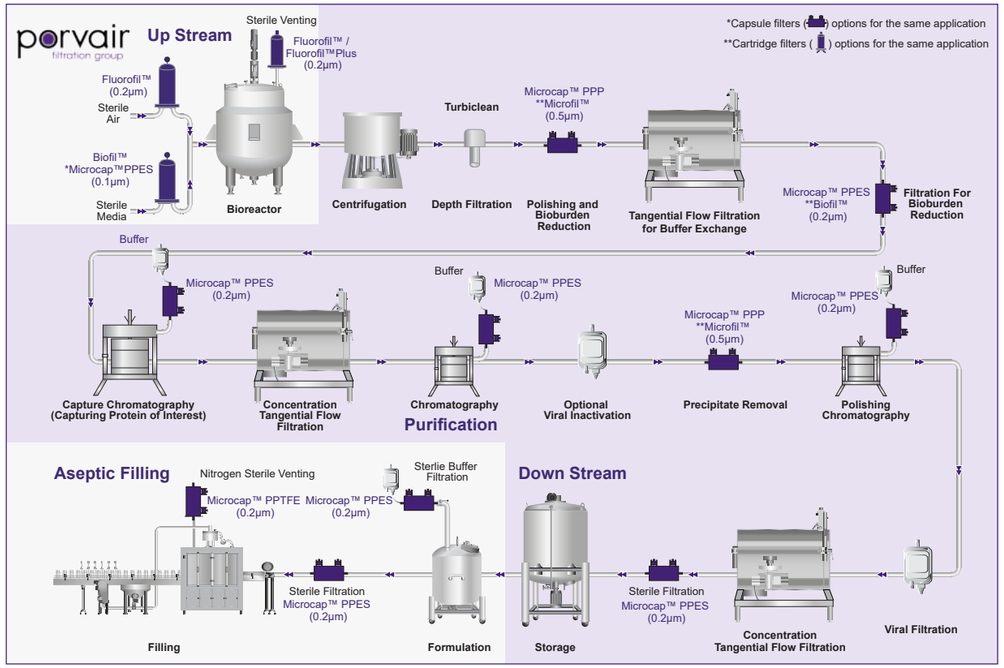
Where are our products used?

Bio-Pharmaceutical Applications

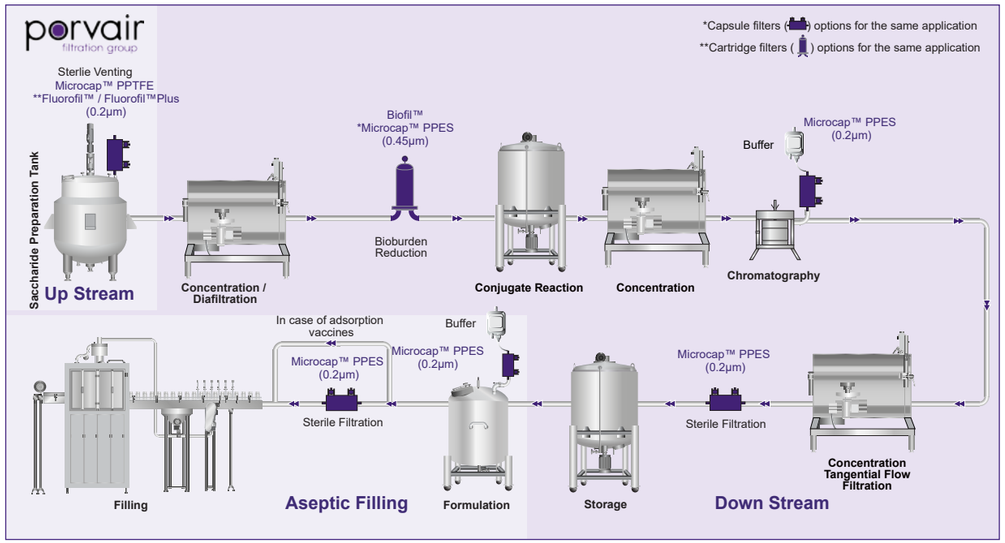
porvair filtration group

Bio-Pharmaceutical Applications

Recombinant Protiens



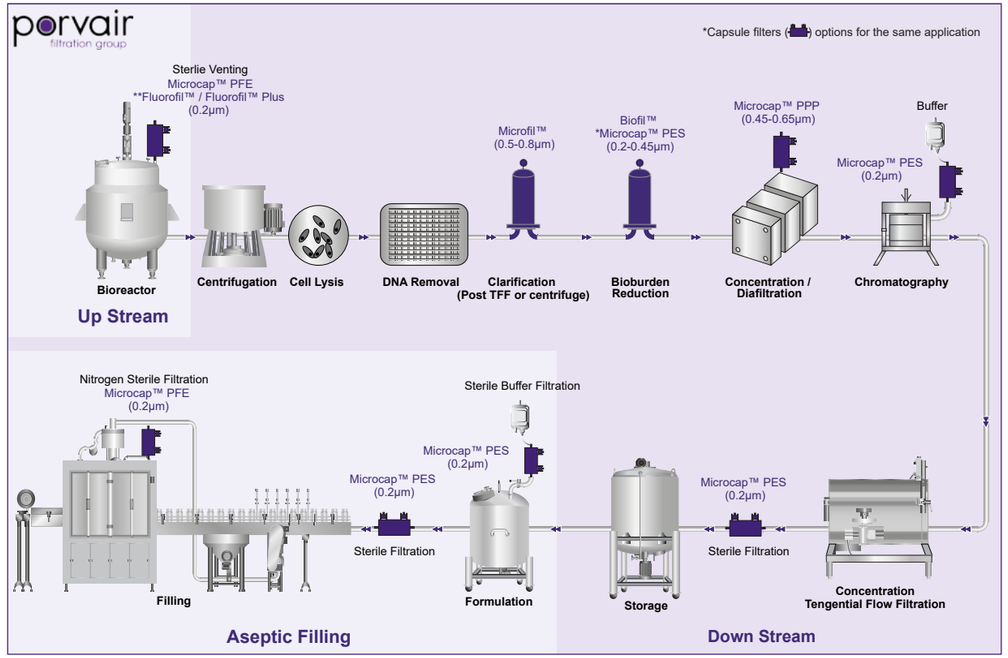
Vaccines: Conjugates



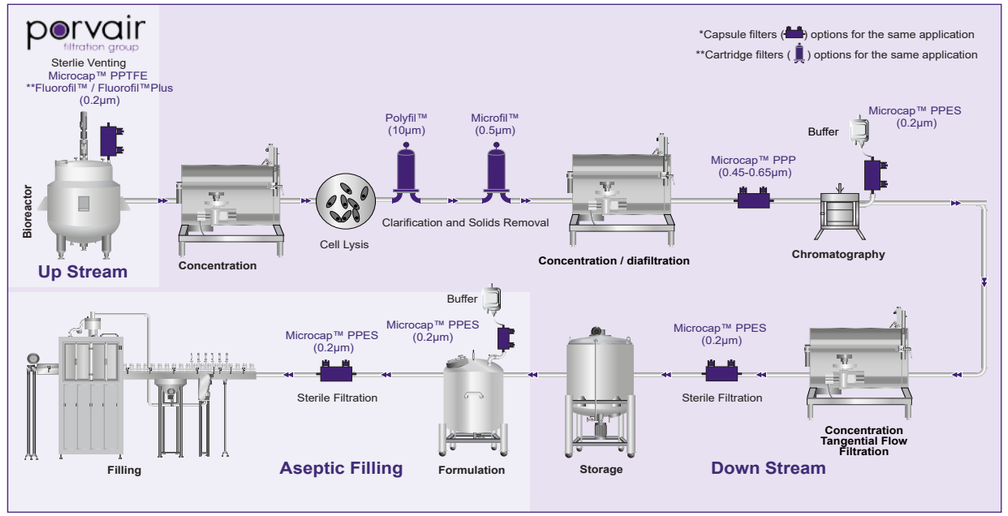
Where Are Our Filters Used?

Bio-Pharmaceutical Applications

Vaccines: Mammalian Cell



Plasmid DNA



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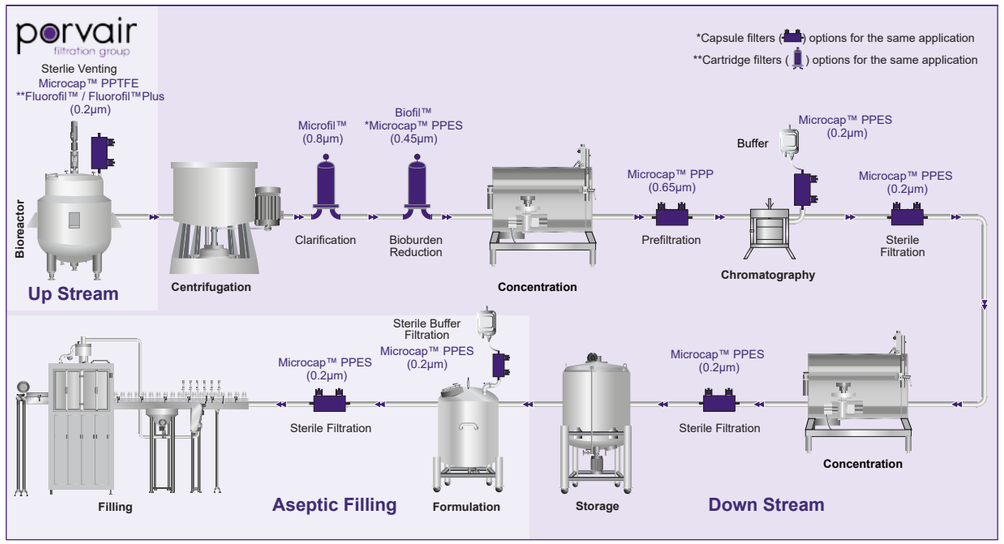
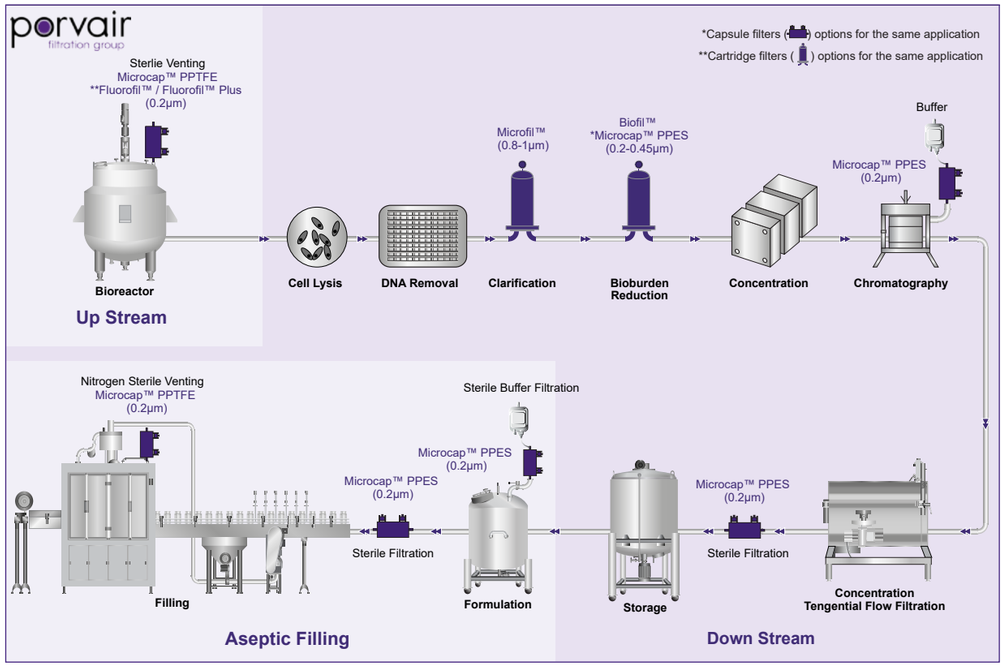
Where Are Our Filters Used?

Bio-Pharmaceutical Applications

Vaccines: Polysaccharides

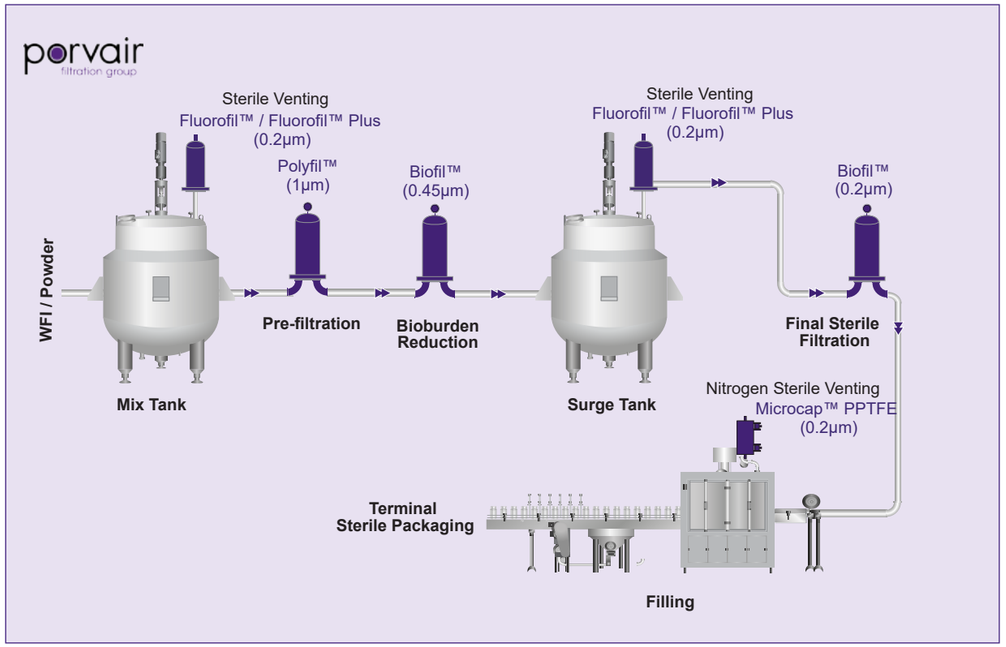


Vaccines: Viral Vectors

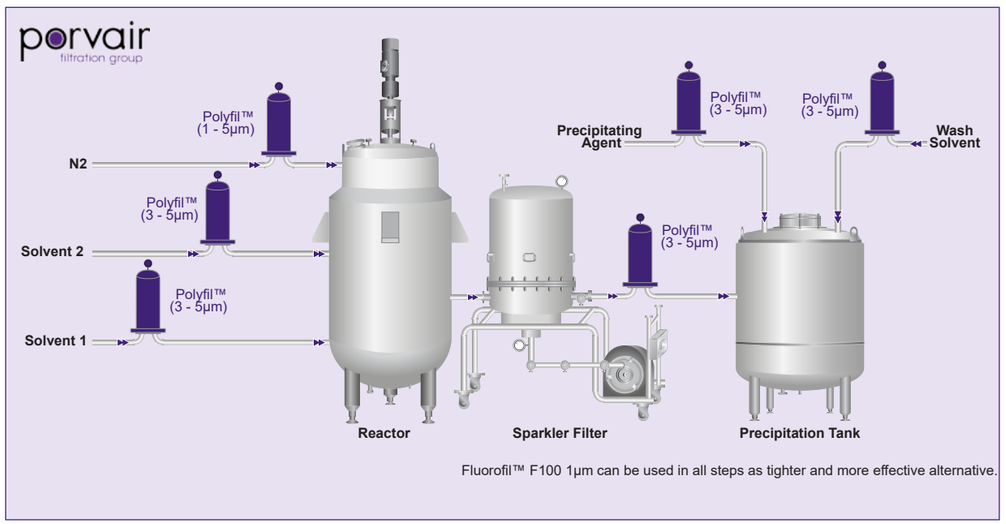


Pharmaceutical Applications

Large Volume Parenteral (LVP)



Non-Sterile API



Fluorofil™ F100 1µm can be used in all steps as tighter and more effective alternative.

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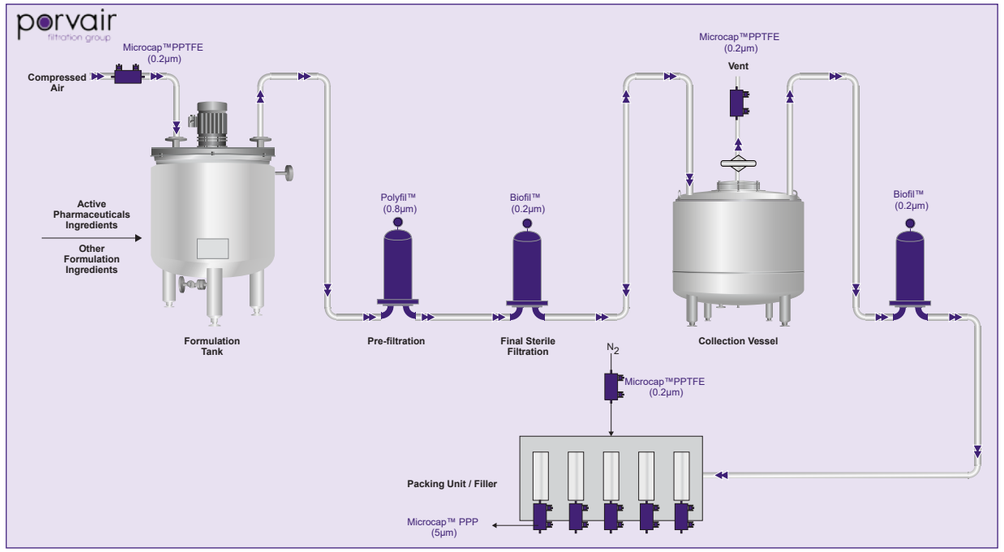
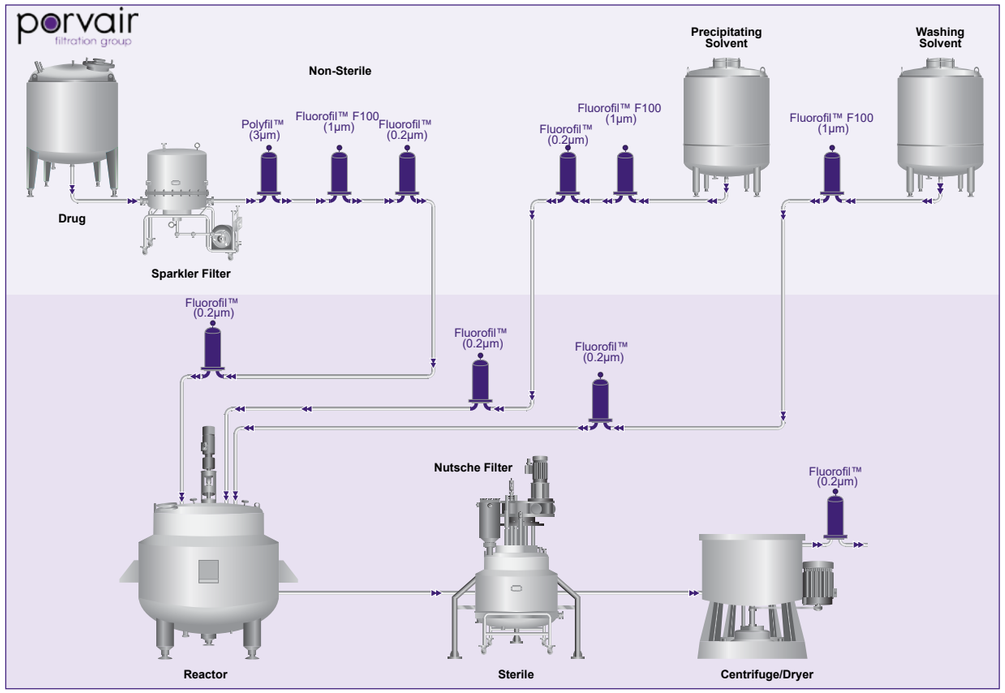
Pharmaceutical Applications

Small Volume Parenteral (SVP)

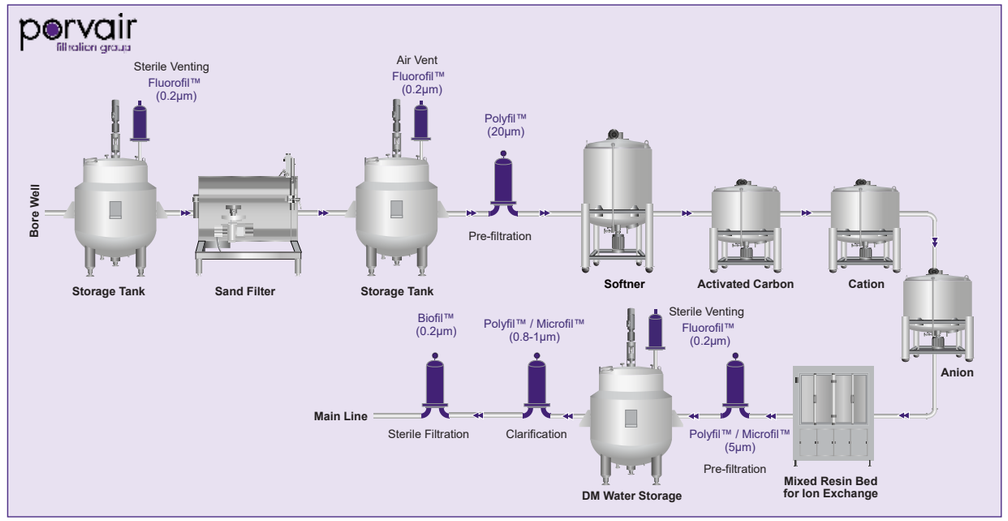


Sterile API



Pharmaceutical Applications

Utilities: DM Water



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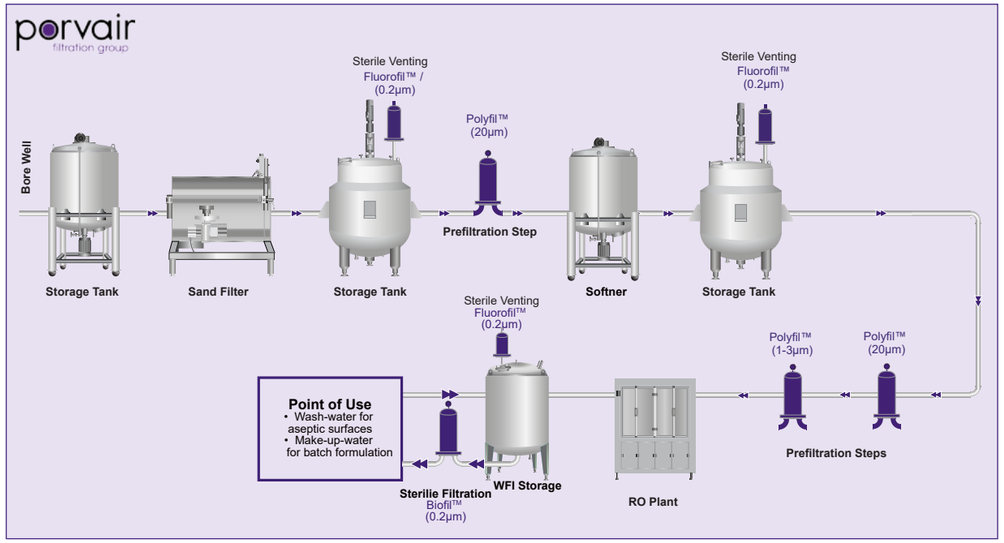
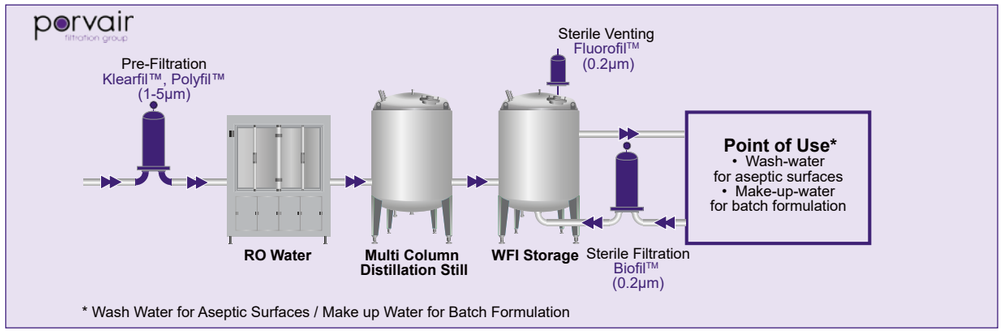
Pharmaceutical Applications

Utilities: Purified Water



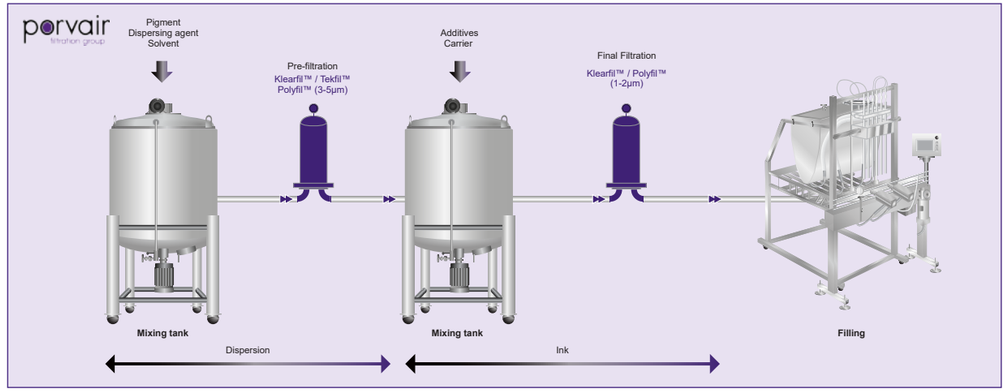
Utilities: WFI



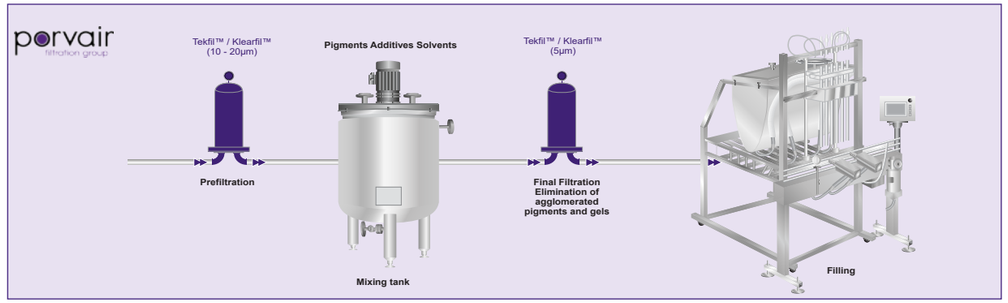
* Wash Water for Aseptic Surfaces / Make up Water for Batch Formulation

Printing / Toiletries and Cosmetics Applications

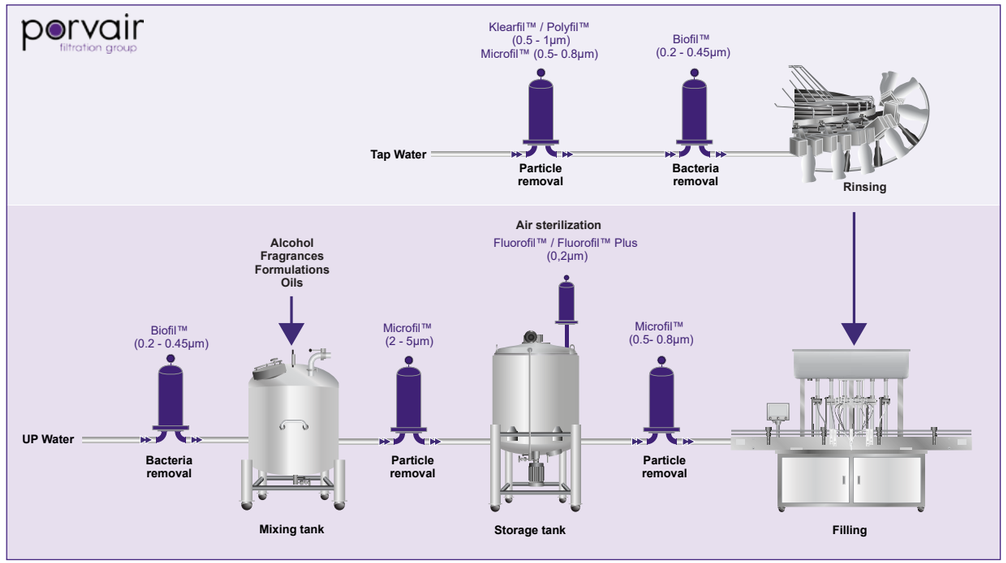
Inkjet



Paints and Coatings



Process: Toiletries and Cosmetics



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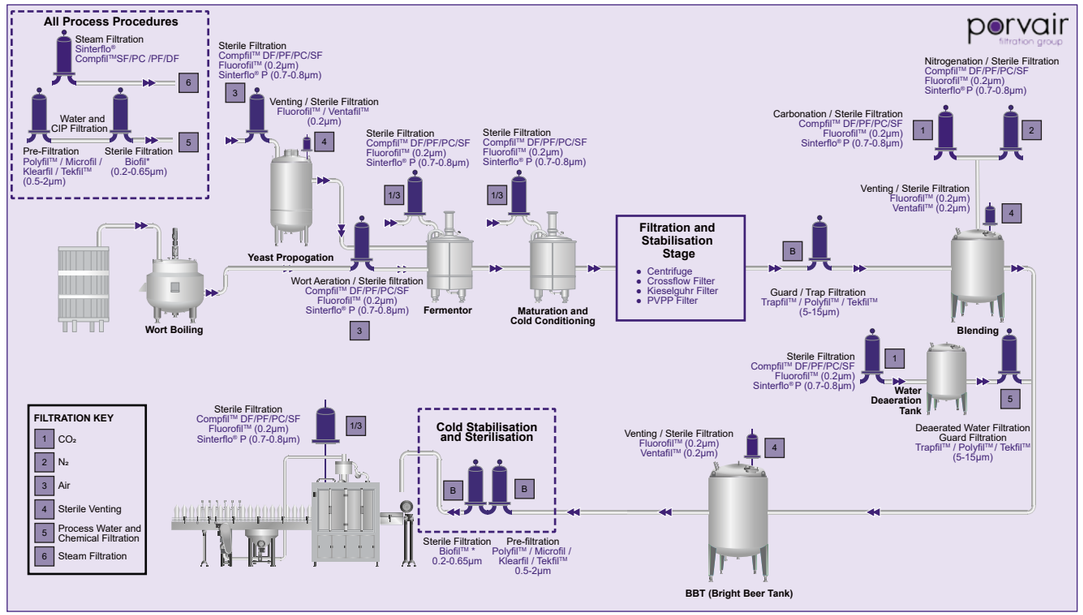
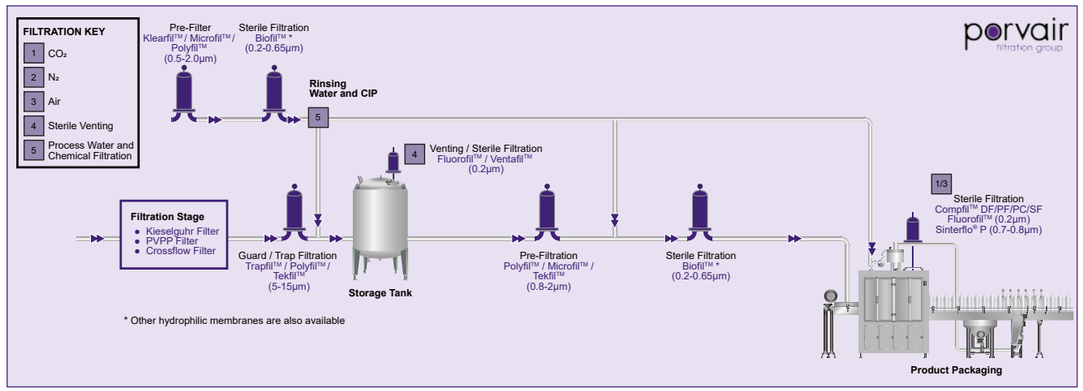
Food and Beverage Applications

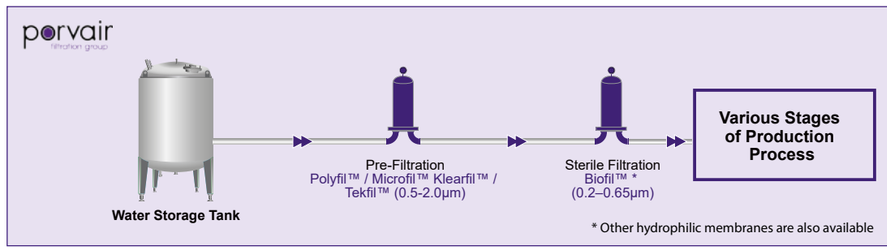
Beer brewing



Craft Brewing

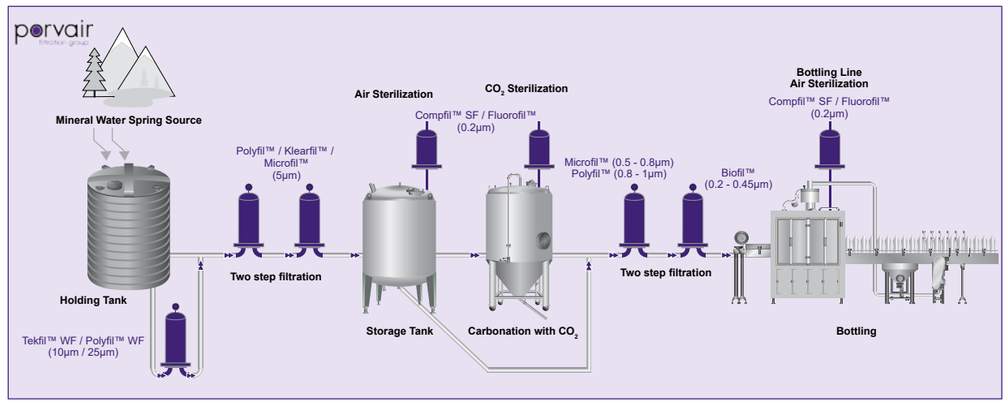


Utilities: Process Water and Chemical Filtration

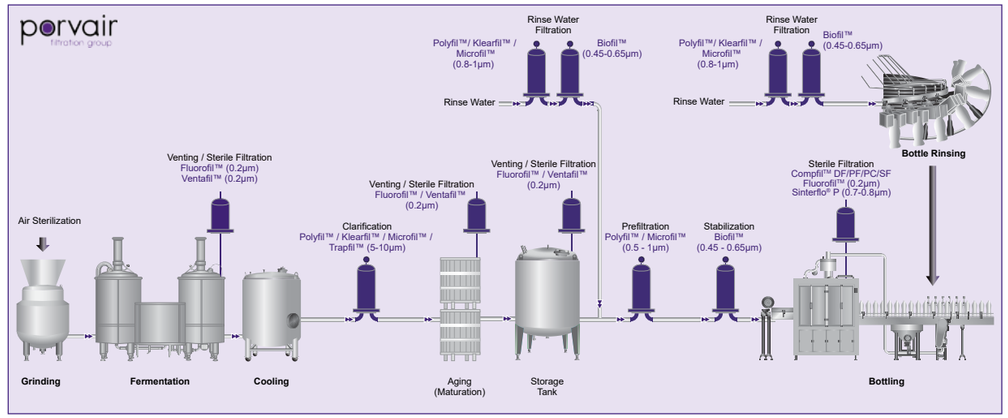


Food and Beverage Applications

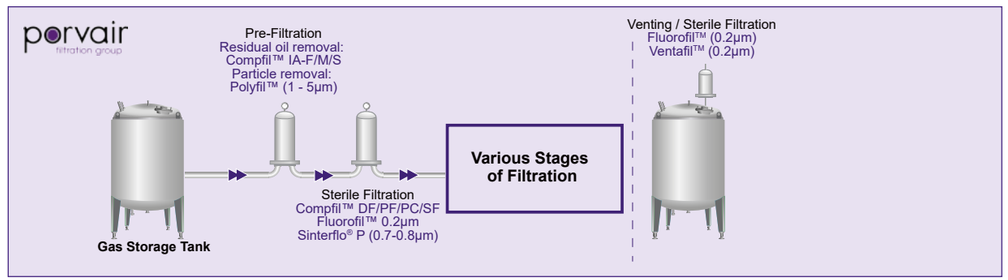
Mineral Water



Wine



Utilities: Filtration of Technical Gases



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Metal 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.

porvair filtration group

Sinterflo® F

Cylindrical Sintered Metal Fibre Filter Elements

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.

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.

Available in 316/316L as standard with other alloys such as Inconel® 601, Hastelloy® X, NiCrMo Alloy 59 and Fecralloy® on request.

Typical Applications

- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration (culinary and process)
- Pharmaceutical powder recovery

Features and Benefits

- Resistant to high temperatures and corrosive environments
- Fully welded construction with no adhesives or fillers
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs

Ordering Information

Sinterflo Table 1 - Table 2 - Table 3 - Table 4 - Table 5 - Table 6 Table 7 Table 8

Table 1 Media Type

F	Sinterflo® F (fibre)

Table 2 End Fitting

226	226 fitting
222	222 fitting
DOE	Double open ended fitting
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT
BS1	1" BSP taper
BS4	1.25" BSP taper
BS5	1.5" BSP taper
BS2	2" BSP taper

Table 3 Cartridge Type

C	Cylindrical

Table 4 Micron Rating

0003	3µm
0005	5µm
0010	10µm
0015	15µm
0020	20µm
0030	30µm
0040	40µm
0060	60µm

Table 5 Cartridge Length

05	5" (125mm)
10	10" (250mm)
20	20" (498mm)
30	30" (745mm)
40	40" (1012mm)

Note: Other non-standard lengths, ratings and end pin options are available on request.

Table 6 Seal Material

E	EPDM
N	Nitrile
S	Silicone
P	PTFE (DOE only)
V	Viton®
F	FEP encap. Viton® (222/226 only)
T	FEP encap. Silicone (222/226 only)
Y	FEP encap. EPDM (222/226 only)
C	Chemraz
X	No seal supplied

Table 7 Guard/Support Option

S	Support
N	None

Table 8 Fin Option

F	Fin (226/222 only)
N	No fin

Specifications

Materials of Manufacture

316/316L 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 and USP Class VI.*

Typical Maximum Differential Pressure (all lengths)

Normal flow direction (out to in): 15bar (218psi)

Reverse flow direction (with support): 3bar (44psi)

Operating Temperature

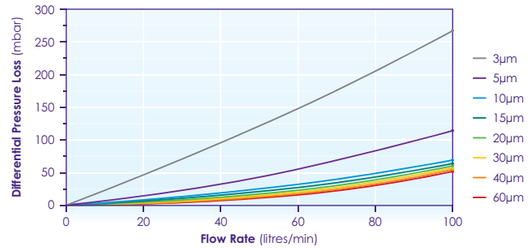
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting. From -269°C (-452°F) to 1000°C (1832°F) alloy limiting.

Sinterflo® F Stainless Steel Media Grades

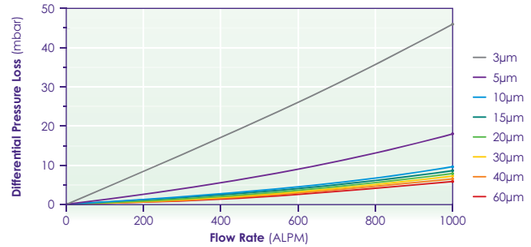
Micron Rating (µm) (micron code)	Liquids (µm)* (99.9% efficiency)	Gases (µm) (99.9% efficiency)
3 (0003)	3	1
5 (0005)	5	1.5
10 (0010)	10	3
15 (0015)	15	4
20 (0020)	20	6
30 (0030)	30	8
40 (0040)	40	11
60 (0060)	60	16

** Single Pass Efficiency Test in accordance with ASTM795 ACFTD.*

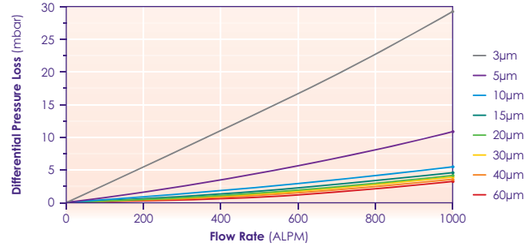
Typical Flow Rates in Water*



Typical Flow Rates in Air*



Typical Flow Rates in Steam*



** Using a 10" element. Water and air at ambient temperature and 1 bar (A). Steam is dry saturated steam at 1bar (A).*

PFG630/Rev6:Feb2023

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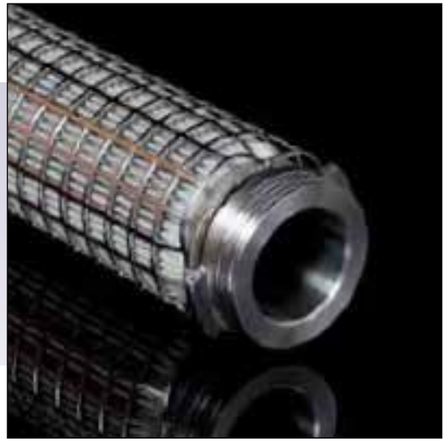
Sinterflo® F

Pleated Sintered Metal Fibre Filter Cartridges



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.

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.

Available in 316/316L as standard with other alloys such as Inconel® 601, Hastelloy® X, NiCrMo Alloy 59 and Fecralloy® on request.

Typical Applications

- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration (culinary and process)
- Pharmaceutical powder recovery

Features and Benefits

- Resistant to high temperatures and corrosive environments
- Fully welded construction with no adhesives or fillers
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs
- Pleatable structure, offering higher filtration area per cartridge

Ordering Information

Sinterflo Table 1 - Table 2 Table 3 - Table 4 - Table 5 - Table 6 Table 7 Table 8

Table 1 Media Type

F	Sinterflo® F (fibre)

Table 2 End Fitting

226	226 fitting
222	222 fitting
DOE	Double open ended fitting
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT
BS1	1" BSP taper
BS4	1.25" BSP taper
BS5	1.5" BSP taper
BS2	2" BSP taper

Table 3 Cartridge Type

P	Pleated

Table 4 Micron Rating

0003	3µm
0005	5µm
0010	10µm
0015	15µm
0020	20µm
0030	30µm
0040	40µm
0060	60µm

Table 5 Cartridge Length

05	5" (125mm)
10	10" (250mm)
20	20" (498mm)
30	30" (745mm)
40	40" (1012mm)

Note: Other non-standard lengths, ratings and end pin options are available on request.

Table 6 Seal Material

E	EPDM
N	Nitrile
S	Silicone
P	PTFE (DOE only)
V	Viton®
F	FEP encap. Viton® (222/226 only)
T	FEP encap. Silicone (222/226 only)
Y	FEP encap. EPDM (222/226 only)
C	Chemraz
X	No seal supplied

Table 7 Guard/Support Option

G	Guard
N	None

Table 8 Fin Option

F	Fin (226/222 only)
N	No fin

Specifications

Materials of Manufacture

316/316L 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

0.13m² (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 and USP Class VI.*

Typical Maximum Differential Pressure (all lengths)

Normal flow direction (out to in): 25bar (363psi)

Reverse flow direction (with guard): 3bar (44psi)

Operating Temperature

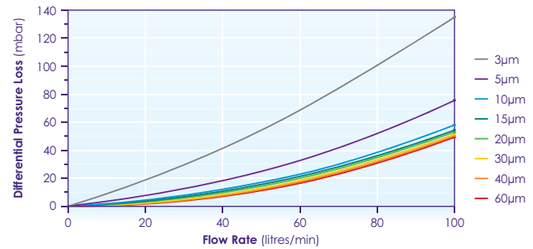
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® F Stainless Steel Media Grades

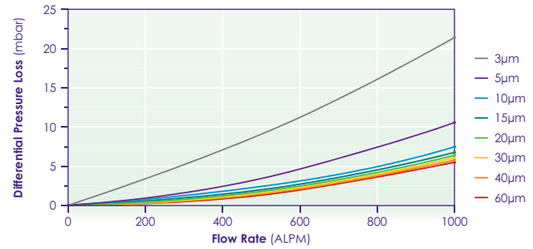
Micron Rating (µm) (micron code)	Liquids (µm)* (99.9% efficiency)	Gases (µm) (99.9% efficiency)
3 (0003)	3	1
5 (0005)	5	1.5
10 (0010)	10	3
15 (0015)	15	4
20 (0020)	20	6
30 (0030)	30	8
40 (0040)	40	11
60 (0060)	60	16

** Single Pass Efficiency Test in accordance with ASTM795 ACFTD.*

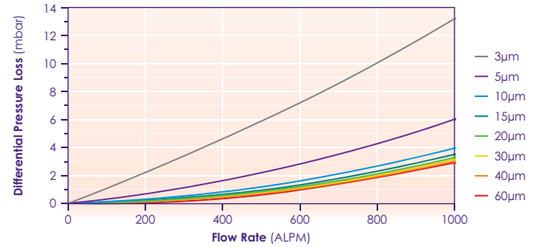
Typical Flow Rates in Water*



Typical Flow Rates in Air*



Typical Flow Rates in Steam*



** Using a 10" element. Water and air at ambient temperature and 1 bar (A). Steam is dry saturated steam at 1bar (A).*

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Sinterflo® P

Cylindrical Sintered Metal Powder Filter Elements

Sinterflo® P is a robust material manufactured from sinterbonded metal powders. Primarily produced in 316/316L grade for use in temperatures up to 420ºC (788ºF), 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.

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 and process)
- 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
- Broad range of fixed, uniform pore sizes
- Ability to withstand varying process conditions

Ordering Information

Sinterflo Table 1 - Table 2 Table 3 - Table 4 - Table 5 - Table 6 Table 7 Table 8

Table 1 Media Type

P	Sinterflo® P (powder)

Table 2 End Fitting

226	226 fitting
222	222 fitting
DOE	Double open ended fitting
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT
BS1	1" BSP taper
BS4	1.25" BSP taper
BS5	1.5" BSP taper
BS2	2" BSP taper

Table 3 Cartridge Type

C	Cylindrical

Table 4 Micron Rating

0006	6µm
0010	10µm
0015	15µm
0020	20µm
0030	30µm
0040	40µm
0060	60µm

Table 5 Cartridge Length

05	5" (125mm)
10	10" (250mm)
20	20" (498mm)
30	30" (745mm)
40	40" (1012mm)

Note: Other non-standard lengths, ratings and end pin options are available on request.

Table 6 Seal Material

E	EPDM
N	Nitrile
S	Silicone
P	PTFE (DOE only)
V	Viton®
F	FEP encap. Viton® (222/226 only)
T	FEP encap. Silicone (222/226 only)
Y	FEP encap. EPDM (222/226 only)
C	Chemraz
X	No seal supplied

Table 7 Guard/Support Option

N	None

Table 8 Fin Option

F	Fin (226/222 only)
N	No fin

Specifications

Materials of Manufacture

316/316L 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 and USP Class VI.*

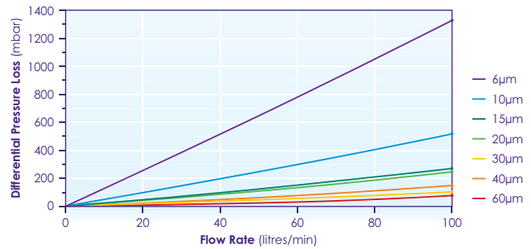
Typical Maximum Differential Pressure (all lengths)

Normal flow direction (out to in):	25bar (363psi)
Reverse flow direction:	10bar (145psi)

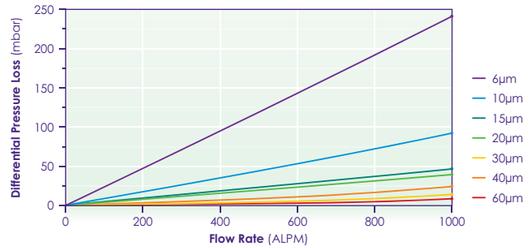
Operating Temperature

Maximum continuous:	From -195°C (-319°F) to 340°C (644°F) seal limiting From -269°C (-452°F) to 925°C (1,697°F) alloy limiting

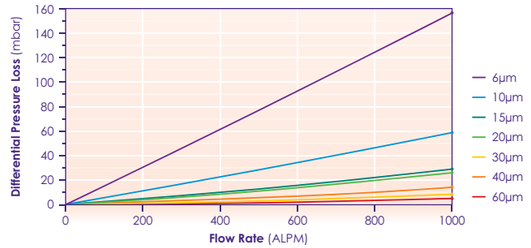
Typical Flow Rates in Water*



Typical Flow Rates in Air*



Typical Flow Rates in Steam*



** Using a 10" element. Water and air at ambient temperature and 1 bar (A). Steam is dry saturated steam at 1bar (A).*

Sinterflo® P Stainless Steel Media Grades

Stainless Steel Grades	Micron Rating (µm) (micron code)	Liquids (µm)* (99.9% efficiency)	Gases (µm) (99.99% efficiency)
S10	6 (0006)	6	0.7
S20	10 (0010)	10	0.8
S30	15 (0015)	15	4
S36	25 (0025)	25	5
S40	30 (0030)	30	6
S41	40 (0040)	40	8
S50	60 (0060)	60	15

** Single Pass Efficiency Test in accordance with ASTM795 ACFTD.*

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Sinterflo® M

Cylindrical Metal Mesh Filter Elements

The Sinterflo® M demonstrates good permeability, high tensile strength and is available from single wrap media 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. Available in 316/316L stainless steel as standard with other alloys such as 304L stainless steel, Inconel®, Hastelloy® and Monel® on request.

Typical Applications

- Catalyst recovery and retention
- Gasification and chemical production
- Vent filters
- Agrochemical
- Steam filtration (culinary and process)
- Pharmaceutical powder recovery

Features and Benefits

- Precise aperture in size and shape
- Good permeability
- Fully welded construction with no adhesives or fillers
- Available in the broadest range of pore sizes of any filter media type

Ordering Information

Sinterflo Table 1 - Table 2 Table 3 - Table 4 - Table 5 - Table 6 Table 7 Table 8

Table 1 Media Type

M	Sinterflo® M (mesh)

Table 2 End Fitting

226	226 fitting
222	222 fitting
DOE	Double open ended fitting
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT
BS1	1" BSP taper
BS4	1.25" BSP taper
BS5	1.5" BSP taper
BS2	2" BSP taper

Table 3 Cartridge Type

C	Cylindrical

Note: Other non-standard lengths, ratings and end pin options are available on request.

Table 4 Micron Rating

0003	3µm
0005	5µm
0010	10µm
0015	15µm
0025	25µm
0030	30µm
0035	35µm
0040	40µm
0050	50µm
0070	70µm
0100	100µm
0150	150µm
0250	250µm

Table 5 Cartridge Length

05	5" (125mm)
10	10" (250mm)
20	20" (498mm)
30	30" (745mm)
40	40" (1012mm)

Table 6 Seal Material

E	EPDM
N	Nitrile
S	Silicone
P	PTFE (DOE only)
V	Viton®
F	FEP encap. Viton® (222/226 only)
T	FEP encap. Silicone (222/226 only)
Y	FEP encap. EPDM (222/226 only)
C	Chemraz
X	No seal supplied

Table 7 Guard/Support Option

S	Support
N	None

Table 8 Fin Option

F	Fin (226/222 only)
N	No fin

Specifications

Materials of Manufacture

316/316L 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 and USP Class VI.*

Typical Maximum Differential Pressure (all lengths)

Normal flow direction (out to in): 15bar (218psi)

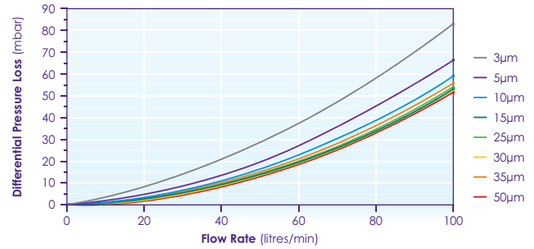
Reverse flow direction (with support): 3bar (44psi)

Operating Temperature

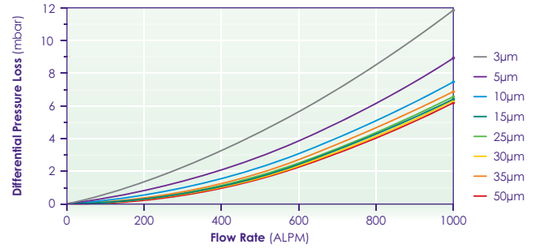
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® M Stainless Steel Media Grades

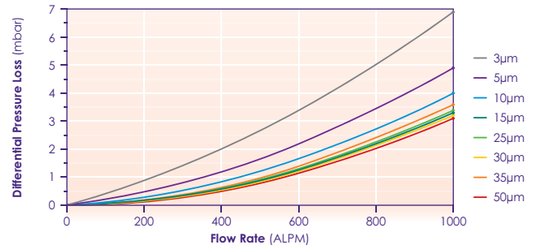
Typical Flow Rates in Water*



Typical Flow Rates in Air*



Typical Flow Rates in Steam*



** Using a 10" element. Water and air at ambient temperature and 1 bar (A). Steam is dry saturated steam at 1bar (A).*

Micron Rating (micron code)	Liquid Rating* (µm) (98.00% efficiency)	(99.90% efficiency)	Gas Rating (µm) (99.9% Efficiency)
3 (0003)	3	10	2
5 (0005)	5	18	13
10 (0010)	10	25	18
15 (0015)	15	35	25
25 (0025)	25	36	30
30 (0030)	30	40	30
35 (0035)	35	50	45
40 (0040)	40	60	55
50 (0050)	50	70	65
70 (0070)	70	110	100
100 (0100)	100	140	130
150 (0150)	150	200	190
250 (0250)	250	260	350

** Hard spherical particle maximum passed.*

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porvair filtration group

Sinterflo® M

Pleated Metal Mesh Filter Cartridges

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 316/316L 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 and process)
- Pharmaceutical powder recovery

Features and Benefits

- Precise aperture in size and shape
- Good permeability
- Fully welded construction with no adhesives or fillers
- Available in the broadest range of pore sizes of any filter media type

Ordering Information

Sinterflo Table 1 - Table 2 - Table 3 - Table 4 - Table 5 - Table 6 Table 7 Table 8

Table 1 Media Type

M	Sinterflo® M (mesh)

Table 2 End Fitting

226	226 fitting
222	222 fitting
DOE	Double open ended fitting
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT
BS1	1" BSP taper
BS4	1.25" BSP taper
BS5	1.5" BSP taper
BS2	2" BSP taper

Table 3 Cartridge Type

P	Pleated

Note: Other non-standard lengths, ratings and end pin options are available on request.

Table 4 Micron Rating

0003	3µm
0005	5µm
0010	10µm
0015	15µm
0025	25µm
0030	30µm
0035	35µm
0040	40µm
0050	50µm
0070	70µm
0100	100µm
0150	150µm
0250	250µm

Table 5 Cartridge Length

05	5" (125mm)
10	10" (250mm)
20	20" (498mm)
30	30" (745mm)
40	40" (1012mm)

Table 6 Seal Material

E	EPDM
N	Nitrile
S	Silicone
P	PTFE (DOE only)
V	Viton®
F	FEP encap. Viton® (222/226 only)
T	FEP encap. Silicone (222/226 only)
Y	FEP encap. EPDM (222/226 only)
C	Chemraz
X	No seal supplied

Table 7 Guard/Support Option

G	Guard
N	None

Table 8 Fin Option

F	Fin (226/222 only)
N	No fin

Specifications

Materials of Manufacture

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

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 and USP Class VI.*

Typical Maximum Differential Pressure (all lengths)

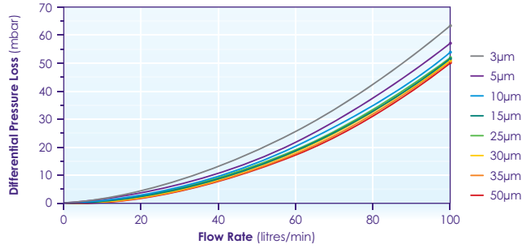
Normal flow direction (out to in): Up to 25bar (363psi)

Reverse flow direction (with guard): 3bar (44psi)

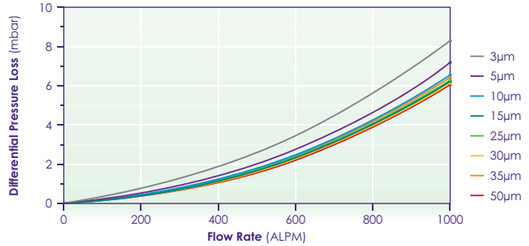
Operating Temperature

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

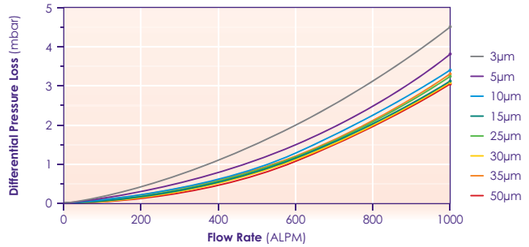
Typical Flow Rates in Water*



Typical Flow Rates in Air*



Typical Flow Rates in Steam*



** Using a 10" element. Water and air at ambient temperature and 1 bar (A). Steam is dry saturated steam at 1bar (A).*

Sinterflo® M Stainless Steel Media Grades

Micron Rating (micron code)	Liquid Rating* (µm) (98.00% efficiency)	(99.90% efficiency)	Gas Rating (µm) (99.9% Efficiency)
3 (0003)	3	10	2
5 (0005)	5	18	13
10 (0010)	10	25	18
15 (0015)	15	35	25
25 (0025)	25	36	30
30 (0030)	30	40	30
35 (0035)	35	50	45
40 (0040)	40	60	55
50 (0050)	50	70	65
70 (0070)	70	110	100
100 (0100)	100	140	130
150 (0150)	150	200	190
250 (0250)	250	260	350

** Hard spherical particle maximum passed.*

PFG631/Rev6:Feb2023

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Sinterflo™ WF

Membrane Pre-Filter or Final Polishing Filter

Porvair Filtration Group wide format (WF) filter cartridges are designed for applications requiring a very high flow rate. They are equally suitable for use as membrane 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.

All Welded Stainless Steel version with no use of glues or adhesives the AWSS version of the High Flow Pleat provides the solution to compability issues whilst maintaining excellent flow rates. Manufactured entirely out of 316/316L stainless steel (except for the sealing o-ring) they are especially suited to high temperature applications or where chemical compatibility is an issue with polypropylene.

Features and Benefits

- Absolute micron ratings to ensure consistent, repeatable performance.
- Inside to out flow ensures that contamination is collected inside the filter cartridge.
- Manufactured in the UK.
- All Stainless Steel construction. 316L Stainless steel end caps, cage & media (either sintered fibre or mesh). TIG welded with no polymeric material or adhesives.
- Suitable for high temperatures and aggressive chemical applications.
- 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 Constructions (AWSS version)

Filtration Media:	Stainless steel mesh (SSM) Sintered steel fibre (SSF)
Endcaps:	316/316L stainless steel
Cage:	316/316L stainless steel
Seals:	As standard version options
Construction:	TIG Welded

Recommended Operating Conditions

Operating Temperature:
-150°C to 300°C (seal material dependent)

Maximum Differential Pressure:
3.0 barg

Recommended Changeout Pressure:
1.5 barg

Product Code: 1 2 3 4 SSM/SSF E.g WF05-40SSF-E

1. Pre Filter	
WF	Sinterflo™ WF

2. Pore Rating	
03	3µm
05	5µm
10	10µm
15	15µm (SSF only)
20	20µm
30	30µm (SSF only)
40	40µm
60	60µm (SSF only)
70	70µm (SSM only)
100	100µm (SSM only)
250	250µm (SSM only)
450	450µm (SSM only)
850	850µm (SSM only)

3. Length (Nominal)	
20	20"(508mm)
40	40" (1016mm)
60	60" (1524mm)

4. Seals	
E	EPDM
N	Nitrile
S	Silicone
V	Viton

SSM/SSF	
SSM	Stainless steel mesh
SSF	Sintered steel fibre

Micron Ratings Available

SSF - Sintered Steel Fibre (absolute rated) available in the following micron ratings
3, 5, 10, 15, 20, 30, 40, 60

SSM - Sintered Steel Mesh (nominally rated) available in the following micron ratings:
3, 5, 10, 20, 40, 70, 100, 250, 450, 850

PFG636/Rev3:March2023

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porvair filtration group

Sinterflo® MC

Cylindrical Metal Mesh Composite Filter Elements

Multi-layered, diffusion-bonded stainless steel mesh is available in 316/316L and other alloys. This precision mesh, also known as porous plate, is available in a range of pore sizes from 5-100µm.

Sinterflo® MC is particularly suited to demanding applications where high operating temperatures of up to 540ºC (1,000ºF), increased chemical or high abrasion resistance is essential.

This material is easily custom engineered to meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment.

Primarily made from 316/316L stainless steel, Sinterflo® MC is also available in Inconel®, Hastelloy® and Monel® materials for use in the most aggressive environments

Features and Benefits

- A superior, mechanically strong structure
- Fabricated shapes without expensive support structures or joining strips
- Can be reused as the structure allows repeated cleaning, providing an economical choice.
- Non-shedding media that provides resistance to mechanical abrasion
- Easily custom-engineered to meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment
- Depending on atmospheric conditions, it can be used in temperatures up to 1004ºF (540ºC), with intermittent operating peaks up to 1202ºF (650ºC)
- Resistance to most chemicals.

Ordering Information

Sinterflo Table 1 - Table 2 Table 3 - Table 4 - Table 5 - Table 6 Table 7 Table 8

Table 1 Media Type

MC	Sinterflo® MC (mesh composite)

Table 2 End Fitting

226	226 fitting
222	222 fitting
DOE	Double open ended fitting
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT
BS1	1" BSP taper
BS4	1.25" BSP taper
BS5	1.5" BSP taper
BS2	2" BSP taper

Table 3 Cartridge Type

C	Cylindrical

Note: Other non-standard lengths and end pin options are available on request.

Table 4 Micron Rating

0005	5µm
0010	10µm
0015	15µm
0020	20µm
0040	40µm
0075	75µm
0100	100µm

Note: Other ratings are available on request.

Table 5 Cartridge Length

05	5" (125mm)
10	10" (250mm)
20	20" (498mm)
30	30" (745mm)
40	40" (1012mm)

Table 6 Seal Material

E	EPDM
N	Nitrile
S	Silicone
P	PTFE (DOE only)
V	Viton®
F	FEP encap. Viton® (222/226 only)
T	FEP encap. Silicone (222/226 only)
Y	FEP encap. EPDM (222/226 only)
C	Chemraz
X	No seal supplied

Table 7 Guard/Support Option

N	None

Table 8 Fin Option

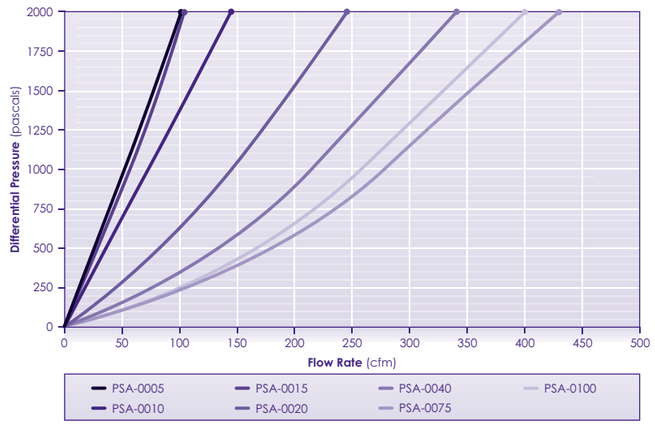
F	Fin (226/222 only)
N	No fin

Specifications

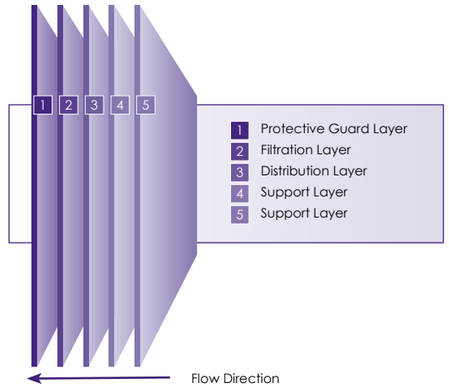
Standard Filter Plate Grades

Grade	Nominal Rating (microns)	Partical Control Mesh (wires per inch)	Nominal Thickness (inch (mm))
PSA-0005	5	325 x 2300	0.066" (1.68mm)
PSA-0010	10	200 x 1400	0.066" (1.68mm)
PSA-0015	15	165 x 1400	0.066" (1.68mm)
PSA-0020	20	165 x 800	0.066" (1.68mm)
PSA-0040	40	325 x 325	0.066" (1.68mm)
PSA-0075	75	250 x 250	0.066" (1.68mm)
PSA-0100	100	150 x 150	0.066" (1.68mm)

Flow Versus Pressure Drop



Sinterflo® MC Filter Configuration



PFG646/Rev2:April24

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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.

We provide a complete fabrication service 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 340ºC, 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 316/316L 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.

Example Specification for 316/316L for a Rotary Kiln Application

Materials of Construction

316/316L Stainless Steel

Media Grades

FMC16

Gaseous Removal Efficiency[1]

100% at 1.6 µm

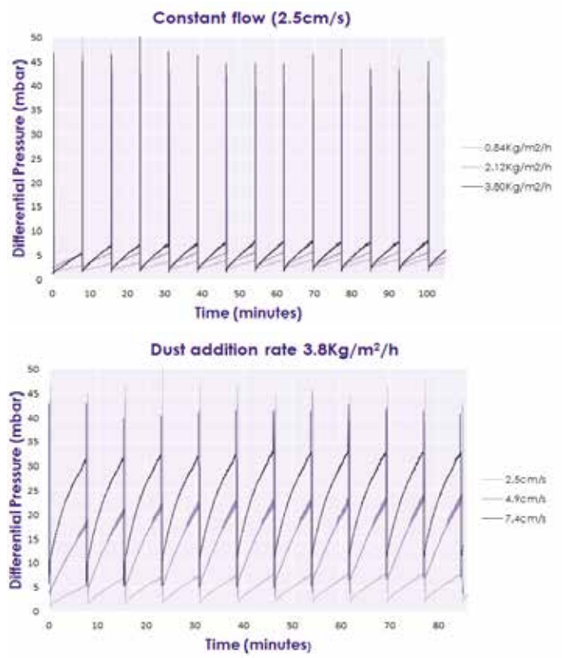
Media Grades

FMC16

Air Permeability (bar (d)-m2/m3/hr)

5.16E-06

Pulse jet testing data of FMC16 media filter under varied face velocities and dust challenges.



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.

1. Fractional gaseous efficiency with SAEJ 726 test dust at 3.5cm/s velocity

PFG643/Rev5/Feb2023

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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. These are 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 film and fibre
- Cellulose acetate film and fibre
- Nylon 6 and Nylon 6-6 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
- Easily cleanable.

Ordering Information

For ordering information please contact a member of the sales team.

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 film and fibre
- Cellulose acetate film and fibre
- Nylon 6 and Nylon 6-6 fibre

Features and Benefits

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

Ordering Information

For ordering information please contact a member of the sales team.

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Sinterflo® MC Septa Filter Elements

Our septa filter elements are made from Sinterflo® mesh composite (MC) filter media. This unique material is made from wire mesh and perforated metal, sintered together into a durable porous filtration medium.

The various layers of woven wire mesh and/or perforated metal are chosen to achieve the filtration, pre-coat, backwash and flow requirements of the application.

Manufactured from 316/316L stainless steel, these can be retrofitted into existing applications.

All of our septa filter elements are designed and tested to exceed the industry standards for resin retention, mechanical integrity, pre-coatability and backwash efficiency, to extend run times and maximize ion exchange performance.

Custom configurations can be provided.

Typical Applications

- Reactor water clean-up
- Fuel pool clean-up
- Radwaste processing
- Condensate polishing

Features and Benefits

- **High strength**
  Sinterflo® septa are designed and tested to withstand the torque, tensile and collapse pressures specified by the application. Complete test reports are available upon request.
- **Temperature resistance**
  Continuous operating temperature range: -50°C to 550°C (-65°F to 1,000°F).
- **Custom configurations**
  Sinterflo® septa are available in 1", 2" and custom diameters. Lengths are provided as specified for the application.
  A variety of hardware options are also available.
  Our septa are available individually or as complete bundle assemblies (for top tubesheet vessels).
  End fittings and adaptors are provided for proper sealing to permanent vessel internal connections.
- **Range of pore sizes**
  From 1 to 200µm.
- **Corrosion resistance**
  Sinterflo® septa are made from 316/316L stainless steel media. Other alloys are available upon request.

Ordering Information

For ordering information please contact a member of the sales team.

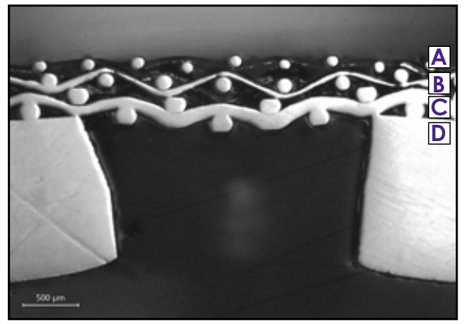
Specifications

Construction

Sinterflo® septa are made from multiple layers of woven wire mesh and perforated metal, which are sintered together into a rigid porous filtration medium.

Each layer is chosen for a particular purpose: filtration, flow distribution, backwash performance, strength and rigidity, etc. This unique material is then formed and welded into filter septa - designed and tested specifically for nuclear applications.

All Sinterflo® septa are GTAW welded using the latest techniques for weld purity and strength. All septa are 100% bubble-point tested (ARP-901) to ensure the desired filtration performance is met.



A - Protective guard mesh on O.D.
B - Precision filtration weave
C - Flow distribution layer
D - Perforated metal inner core

Materials of Manufacture

Filter media: 316/316L stainless steel wire mesh (various weaves).
End fittings: Stainless steel adaptors of various configurations.

Dimensions

Outside diameter: 1-inch, 2-inch, custom.

Operating Temperature

Maximum continuous: -50°C to 550°C (-65°F to 1,000°F).

Other applications for our Sinterflo® MC media include:

- **Cup strainers**
  Cup strainers are underdrain strainer elements used for resin retention in deep bed demineralizers. Our strainer elements provide the required resin retention with high open area for flow, allowing improved flow distribution and ion exchange capacity utilization.
- **Vessel laterals**
  Our Sinterflo® laterals are custom designed to retain ion exchange resin beads while providing more uniform flow distribution throughout a deep bed demineralizer resin bed to optimize resin utilization.
- **Resin trap assemblies**
  Our resin trap (also called post-strainer) assemblies are designed to ensure that the ion exchange resins and precoat media are retained to avoid chemistry transient in reactor coolant and steam generators. Our resin traps are made from Sinterflo® MC media for precise resin capture and to meet flow requirements with low clean pressure drop.

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Pleated Filter Elements

For the Aerospace Industry

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.

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

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Leaf Disc and Solid Plate Filters

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.

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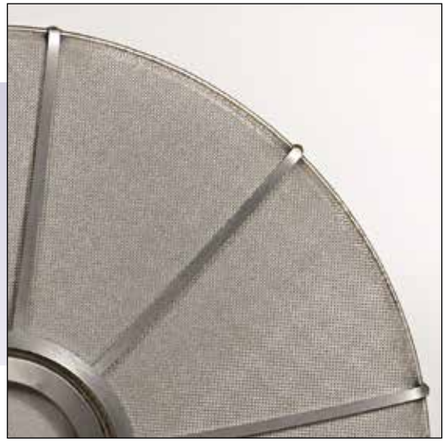
Leaf Disc Filters

For the Polymer Melt Industry



A range of stainless steel fibre 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.

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 stainless steel mesh Increases the overall strength and rigidity of the filter
- **Advanced hard hub**
  Slotted hub design with 35% more open area, reducing pressure drop without compromising disc strength. Conventional drilled hubs are also available

Features and Benefits

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

Typical Applications

- Polyester film
- PEEK material

Specifications

Method of Sealing
Metal fibre gasket

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

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

Disc Stack Sealing Load
10 tonnes maximum

Ordering Information

For ordering information please contact a member of the sales team.

Product Family	Diameter	Bore	Spider Thickness	Hub Style	Micron Rating (µm)
PA0587	12"	85mm	1.5mm	Crossed Drillied	5, 10, 15, 20, 25, 30, 40, 60, 80
PA0588	12"	85mm	1.5mm	Slotted	5, 10, 15, 20, 25, 30, 40, 60, 75, 80, 90, 100
F0497	12"	63mm	2mm/None	Slotted	7, 10, 15, 25, 30, 60, 80
2055	7"	48mm	1.5mm/None	Slotted	5, 10, 15, 20, 25, 30, 40, 60, 80
7382	7"	38mm	1.5mm	Slotted	5, 10, 15, 20, 25, 30, 40

Solid Plate Leaf Disc Filters

For the Polymer Melt Industry

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.

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

Ordering Information

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Disposable / Polymeric Filter Cartridges

A range of disposable polymeric filters are manufactured in an ISO Class 8, GMP "D" certified cleanroom 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.

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.

Microelectronics

Our Teffil™ chemically inert filter range offers the removal of fine particulate from 0.05-10 micron in challenging operating conditions.

Printing

Our extended range of filters offers solutions for inkjet requirements including capsule, in-line, last chance and bulk ink filtration.

Nuclear

We manufacture nuclear grade displosable filters for all areas of power plant liquid 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 unparallelled 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.

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.

Radial Flow HEPA Filter Inserts

For Nuclear Applications

We manufacture fully compliant radial flow filter inserts for nuclear ventilation applications, qualified to and validated for, all UK nuclear HVAC standards. These HEPA-rated glass fibre pleated filter inserts offer fine levels of filtration efficiency and low differential pressure.

We also manufacture a range of sintered metal fibre, powder and mesh filters for use throughout the nuclear industry; from power generation, through to fuel manufacture, including waste treatment and storage, decommissioning and decontamination activities. We have the expertise and capability to design filtration equipment to meet the most arduous of conditions, including high temperature, aggressive chemicals and high solids environments.

Specifications

Construction

The element filter pack features integrally pleated ribbons to separate and support the pleats. This minimises differential pressure and maximises dirt holding capacity performance.

Materials of Manufacture

End caps, guards, handle:	stainless steel 1.4307 or 1.4404 to BS EN 10088-2
Filter media:	glass fibre
Internal lip seal:	silicone rubber

Dimensions

Outside diameter:	518mm (20.4")
Inside diameter:	340mm (13.4")
Length:	624mm (24.6")

Operating Temperature

Maximum continuous:	80°C (176°F)

Tested in an oven at 500°C (932°F) for 10 minutes to ensure that materials do not contribute to combustion. This does not imply that filters are suitable for operation at the test temperature.

Typical Applications

- **Nuclear Ventilation**
  Radioactive and/or toxic atmospheric air or inert gas handling systems.

Features and Benefits

- **High efficiency**
  Efficiency greater than 99.99% at 950 l/s when tested to
  BS EN ISO 14644-3:2005 Cleanrooms and Associated Controlled Environments – Part 3: Test methods.
- **Temperature and chemical resistance**
  To Type 2 HEPA Insert standards.

Ordering Information

For ordering information please contact a member of the sales team.

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NuKey™

Nuclear Grade Disposable Filter Elements

The NuKey™ family of commercial nuclear grade disposable filters are designed for use in all areas of a power plant that require liquid filtration.

NuKey™ filters are available with ratings as low as 0.5µm and can be manufactured for new applications as well as direct retrofits for existing OEM filters. Finer ratings may be discussed upon application.

These filters have a fully welded structure, which surpasses the older tie-rod design in terms of lifting safety and minimizes operator exposure, while meeting OEM filter specifications.

Porvair has over 50 years of experience delivering world class performance to the most demanding of environments. Commercial Nuclear experience specifically includes reactor coolant, spent fuel pool, radwaste filters, and resin trap strainers as well as other nuclear applications.

Other options available upon request.

Typical Applications

- Reactor Coolant / CVCS
- Seal Water Injection and Return
- Spent Fuel Pool and Skimmers
- Reactor Cavity
- Radwaste Containment

Features and Benefits

- Designed to reduce out of core radiation while minimizing operator exposure
- Fully welded 316L construction with potted seals eliminates the potential for bypass while providing a robust support structure
- Pleated filter media is optimized to reduce outage duration when fuel pool clarity is critical path
- Available in a range of styles and filtration ratings
- AS9100 / ISO 9001 certified
- Form, fit, and function replacements for OEM filters

Options

Style	Common Description
022	362 O-ring upper seal, 356 O-ring lower seal, 6.15" OD, 3um sintered disc at upper opening
044	6.65 OD, upper o-ring seal (special 6.65 OD), lower 358 unified o-ring seal
076	339 O-ring upper seal, 230 O-ring lower seal, 2.8" OD
105	339 O-ring seal, 6.1" OD, 7/16-14 end nut interface
130	362 O-ring upper seal, 356 O-ring lower seal, 6.15" OD, no upper opening
157	362 O-ring upper seal, 356 O-ring lower seal, 6.15" OD, no upper opening, alternate lifting handle

Nuclear Media Filtration Test Summary	
Instrumentation and Test Methodolgy	Compliant with NF X45-303 or ASTM F795-88
Fluid	Water at ambient conditions
Water at ambient conditions	15l/min
Sample form factor	Flat sheet

Specifications

Filtration Designation Code	Filtration Claim @ >=99.9%	Test Dust	MoC of Media	Leachables and Extractables: <150ppm Fluorides, Chlorides, Sulfates
0008	0.8	ISO FTD	GF (Glass fiber)	Pass
0010	1	ISO FTD	PP (Polypropylene)	Pass
0020	2	ISO FTD	PP (Polypropylene)	Pass
0050	5	ISO FTD	PBT (Polybutylene terephthalate)	Pass
0100	10	ISO MTD	PP (Polypropylene)	Pass
0130	13	ISO MTD	PBT (Polybutylene terephthalate)	Pass
0550	55	ISO MTD	PES (Polyester)	Pass
Potting Compound	N/A	N/A	Urethane	Pass

Claims	022	076	105	130	157
Normal flow direction	In to out	In to out	Out to in	In to out	In to out
Burst minimum (psid)	75	75	-	75	75
Collapse minimum (psid)	10	10	75	10	10
Axial tensile load minimum (lbf)	100	100	100	100	100

Ordering Information

Product Code: NuKey™- 1 - 2 - 3 - 4

1: Style	2: Code	Length
022	1088	10.878
	1886	18.858
	2713	27.128
044	2126	21.255
	2494	24.942
076	1140	11.399
	2134	21.336
	3127	31.273
105	2134	34.635
	1750	17.500
130	1088	10.878
	1886	18.858
	2713	27.128
157	1088	10.878
	1886	18.858
	2713	27.128

3: Filtration Rating*	
0008	0.8µm @ 99.9%
0010	1µm @ 99.9%
0020	2um @ 99.9%
0050	5µm @ 99.9%
0100	10µm @ 99.9%
0130	13µm @ 99.9%
0550	50µm @ 99.9%

4: O-Ring Material	
E	EP
N	Buna N
S	Silicone

** Filtration ratings tested on flat sheet media, Single-Pass.*

PFG210/Dec24

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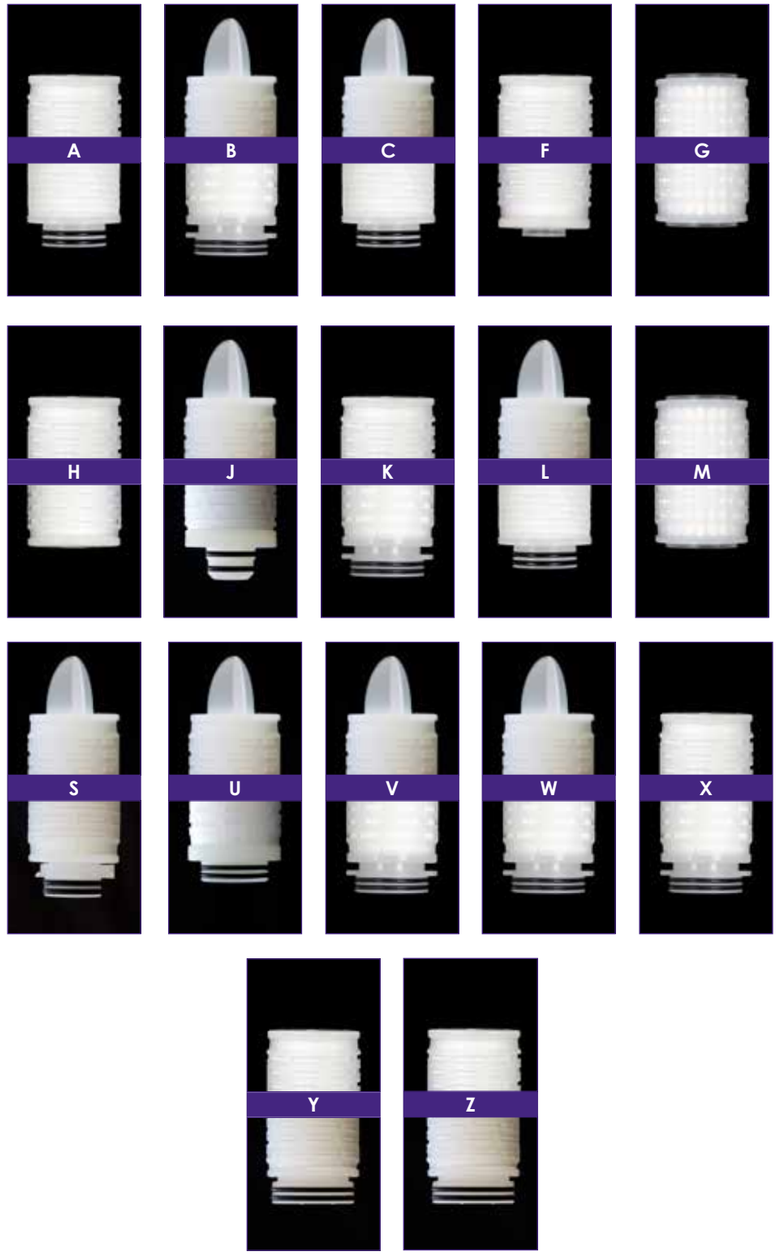
End Cap Adaptors

Disposable Cartridges

Cartridge		Top End			Outlet End		
Code	Description	End Fitting	Seal	Quantity	End Fitting	Seal	Quantity
A	Code 3	Flat	None		Open	O-ring 222	2
B	Code 7	Fin	None		Open	O-ring 226	2
C	Code 8	Fin	None		Open	O-ring 222	2
F	N SOE	Recess	None		Flat open	O-ring 213	1
G	G DOE (short length)	Flat open	Flat gasket	1	Flat open	Flat gasket	1
H	G SOE	Flat	None		Flat open	O-ring BS118 (fit into filter housing)	2
J	216 (218), fin	Fin	None		Open	O-ring 216 O-ring 218	1 1
K	Code 2	Flat	None		Open	O-ring 226	2
L	223, fin (no lugs)	Fin	None		Open	O-ring 223	2
M	DOE	Flat open	Flat gasket	1	Flat open	Flat gasket	1
S	Code 28, fin (3 lugs)	Fin	None		Open	O-ring 222	2
U	224, fin	Fin	None		Open	O-ring 224	2
V	226, fin	Fin	None		Open	O-ring 226	2
W	F 20+ Code 7 (stainless steel core)	Fin	None		Open	O-ring BS226	2
X	F 20+ Code 2 (stainless steel core)	Flat	None		Open	O-ring BS226	2
Y	BS832, flat	Flat	None		Open	O-ring BS832	2
Z	F 20+ Code Y (stainless steel core)	Flat	None		Open	O-ring BS832	2

Our 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.

Porvair seals are FDA compliant for food contact (CFR, Title 21). USP Class VI complaint seals are only fitted to "P" suffix products (Table 7) on the corresponding ordering guides.



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PolyKey™

Polypropylene Cartridge Filters

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

Ordering Information

Product Code: 1 2 3 4 5 6

1: Nominal	
PK	PolyKey™

2: Pore Rating	
P1	0.1µm
P2	0.2µm
P45	0.45µm
01	1µm
03	3µm
05	5µm
10	10µm
30	30µm

3: Version	
S	Standard Hard Cage
N	Netted

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016 mm)
5	5" (127mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
D*	Plastisol / PVC (double open end)
K	Code 2
M	DOE

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
J	DOE PTFE

** When an item has End Fitting option D it does not require a Seal.*

Standard Range

Features and Benefits

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

Specifications

Materials of Manufacture

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

Operating Characteristics

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

Cartridge Dimensions (Nominal)

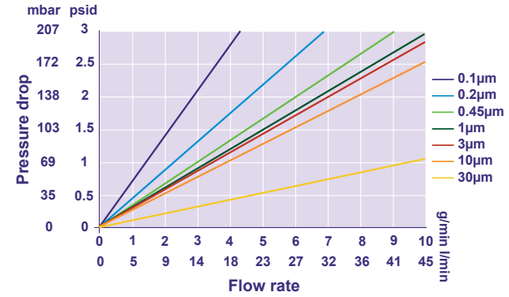
Effective Filtration Area:
4.5ft² (0.4m²) per 10" length

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.

Flow / Pressure Drop



Flow rates shown are for a nominal 10" (254mm) long cartridge. For fluids other than water, multiply the pressure drop by the fluid viscosity in centipoise.

Filter Retention Specifications*

Liquid Service				
Nominal micron rating	Particulate removal efficiency (Beta ratio)			
	90% (10)	99% (100)	99.9% (1,000)	99.99% (10,000)
0.1	0.1	0.45	0.8	1
0.2	0.2	0.6	1	2
0.45	0.45	1	2	3
1	1	3	7	10
3	3	7	10	15
10	7	10	15	25
30	30	40	50	60

** 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 l 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.*

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PolyKey™ GIANT

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 our 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.

Typical Applications

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

Ordering Information

Product Code: 1 2 3 4 5 6

1: Nominal	
PK	PolyKey™

2: Pore Rating	
P2	0.2µm
P45	0.45µm
01	1µm
05	5µm

3: Version	
G	GIANT

4: Length* (Nominal)	
1	10" (254mm)
2	20" (508mm)

5: End Fitting	
A	Code 3
D†	Plastisol / PVC (double open end)

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile

**All GIANT filters are 4.5" (114mm) diameter and available in length 1 and 2, with code A and M end caps.*

† When an item has End Fitting option D it does not require a Seal.

Features and Benefits

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

Specifications

Materials of Manufacture

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

Nominal Micron Ratings

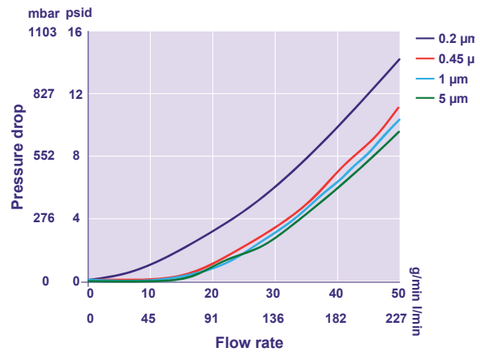
0.2, 0.45, 1µ in Polypropylene media

5µ in Polyester media

Cartridge Dimensions

Effective Filtration Area:
10ft² (0.9m²) per 10" length
Diameter: OD 4.5" (114mm)
Length: 10" (254mm)
20" (508mm)
Sized to fit in our 222 GIANT HOUSING® series

Flow / Pressure Drop



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

Filter Retention Specifications*

Liquid Service				
Nominal micron rating	Particulate removal efficiency (Beta ratio)			
	90% (10)	99% (100)	99.9% (1,000)	99.99% (10,000)
0.2 Polypropylene	0.2	0.6	1.0	2
0.45 Polypropylene	0.45	1	2	3
1 Polypropylene	1	3	7	10
5 Polyester	5	8	10	15

** 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 l 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.*

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MicroKey™

Microfibreglass Cartridge Filters

A range of high quality pleated microfibreglass cartridge filters, suitable for challenging filtration environments.

MicroKey™ cartridge filters are manufactured from microfibreglass 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

Ordering Information

Product Code: 1 2 3 4 5 6

1: Nominal

MK	MicroKey™

2: Pore Rating

P1	0.1µm
P2	0.2µm
P45	0.45µm
01	1µm
03	3µm
10	10µm
30	30µm
50	50µm

3: Version

S	Standard Hard Cage
H	High temp.

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (127mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
D*	Plastisol / PVC (double open end)
K	Code 2
M	DOE

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
J	DOE PTFE

** When an item has End Fitting option D it does not require a Seal.*

Features and Benefits

- Excellent compatibility at high temperature
- Maximum processing
- High-efficiency

Specifications

Materials of Manufacture

Filter mdia: 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.

Operating Characteristics

Effective Filtration Area:

4ft² (0.37m²)per layer per 10" length

Maximum **Δ**P:

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)

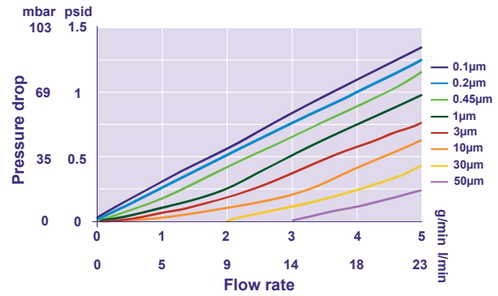
200°F (93°C) for high temperature version (H)

Cartridge Dimensions

Diameter: OD: 2.75" (70mm), ID 1" (25mm)

Nominal Lengths: 5" (127mm) to 40" (1,016mm)

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" (254mm) cartridge. For fluids other than water, multiply the pressure drop by the fluid viscosity in centipoise.

Filter Retention Specifications

Liquid Service					Gas service
Nominal micron rating	Particulate removal efficiency (Beta ratio) 90% (10)	99% (100)	99.9% (1,000)	99.99% (10,000)	DOP removal efficiency (%)
0.1	0.1	0.45	0.6	0.8	99.999
0.2	0.2	0.5	0.7	1	99.99
0.45	0.45	1	2	3	99.985
1	1	3	5	7	93
3	3	7	10	12	65
10	7	10	15	25	50
30	20	30	40	50	15
50	30	40	50	60	---

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Tekfil™N

Nominal Rated Polypropylene Depth Cartridge Filters

Tekfil™ N 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.

Typical Applications

- Food and beverage
- Fine chemicals and solvents
- Coatings
- Photographic chemicals
- Metal finishing electroplating
- Water treatment prior to reverse osmosis
- Cosmetics product filling

Ordering Information

Product Code: 1 2 3 4 5 6

1: Nominal

TN	Tekfil™ N

2: 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
50	50µm
60	60µm
75	75µm
90	90µm
105	105µm

3: Version

S	Standard

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
F	N SOE
K	Code 2
M	DOE

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FED Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE
L	Polyethylene foam gasket
N	None

Features and Benefits

- Graded depth media
  The graded structure of the media provides prefiltration of the process fluid prior to the nominal rated final layer. This combination provides economy of use and a smaller process footprint.
- High degree of chemical compatibility
  Constructed entirely of polypropylene and/or nylon.
- Nominal removal ratings
  Tekfil™ N cartridges are validated using recognised industry standard test methods.
- Suitable for steam and hot water sanitisation
  Tekfil™ N cartridges are resistant to repeat steam sterilisation and hot water cycles.

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 adaptors.

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	3.5 bar (50psi)
60°C (140°F):	1.0 bar (15psi)
80°C (176°F):	0.5 bar (7psi)

Operating Temperature

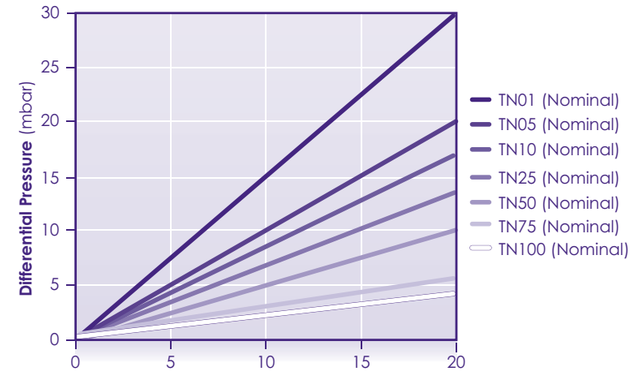
Maximum continuous: 80°C (176°F)

Extractables

Minimum total extractables.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Tekfil™ single cartridge exhibits the flow-**Δ**P 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.



PFG765/Rev4:Feb2023

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Tekfil™SW

String Wound Cartridge Filters

The Tekfil™ SW range of precision wound filter cartridges are suitable for many filtration applications. Available in a wide range of media types and with either polypropylene or steel cores allows for wide chemical compatibility.

The choice of glass fibre on a steel core will allow for operating temperatures of up to 400°C with a broad spectrum of solvents.

Typical Applications

- Food and beverage
- Fine chemicals and solvents
- Coatings
- Photographic chemicals
- Metal finishing electroplating
- Water treatment prior to reverse osmosis
- Cosmetics product filling

Ordering Information

Product Code: 1 2 3 4 5 6 7 8 9

1: Nominal	
TSW	Tekfil™ SW

2: Media	
P	Polypro.
WP	Washed PP
K	Glass Fibre
C	Cotton

3: Micron	
01	1
05	5
10	10
20	20
25	25
75	75
100	100

4: Core	
P	Polypro.
S	Stainless steel 316/316L

5: Length
5"
9.7/8"
10"
20"
30"
40"

6: Diameter	
-	ID 28mm OD 64mm
LD	ID 28mm OD 110mm

7: Bottom End Cap	
-	None
E	222
F	226

8: Top End Cap	
-	None
G	Flat
H	Fin

9: Seal Material	
E	EPDM
N	Nitrile
S	Silicone
T	FEP
V	Viton®

For DOE filters, options from tables 7 to 9 are omitted from the product code.

Features and Benefits

- Nominal removal ratings from 1-100µm.
- Graded depth filter maximises dirty holding capacity and life-time of service.
- Broad range of media types and core material options allows wide chemical compatibility and operation at high temperatures.
- Lengths from 5" to 40" as standard, but with the option of longer lengths on request.
- Full range of end cap styles available or available with plain ends (illustrated).
  Note that glass fibre wounds are only available in plain ends.
- FDA grade polypropylene can be used for the media and core.
- Available with polypropylene or steel cores.

Specifications

Materials of Manufacture

Filter media:	Polypropylene Washed Polypropylene Glass Microfibre Cotton
Core type:	Polypropylene 316/316L Stainless Steel
End caps:	Polypropylene
Seals:	Nitrile EPDM Silicon Viton® PTFE

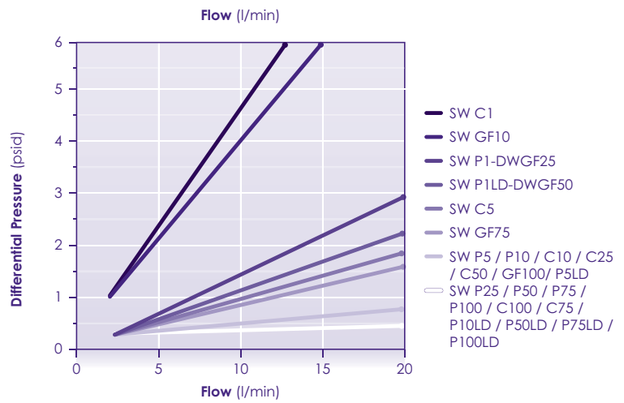
Recommended Changeout Pressure

2 barg @ 20°C

Operating Temperatures

- Cotton on Polypropylene core
  60°C (140°F)
- Polypropylene on Polypropylene core
  60°C (140°F)
- Glass Fibre on Polypropylene core
  60°C (140°F)
- Cotton on stainless steel core
  120°C (248°F)
- Polypropylene on stainless steel core
  85°C (185°F)
- Glass Fibre on stainless steel core
  400°C (752°F)

Flow Rate Vs Pressure Drop



PFG793/Rev4:Nov23

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Carbofil™

Activated Carbon Filter Cartridges / Absorber

The Carbofil™ series is the new generation of carbon cartridges produced by the extrusion process. They provide long service life and superior adsorbtion 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, fluidizing or unloading of carbon fines.

To prevent premature blocking of the activated carbon layer, the 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

Ordering Information

Product Code: 1 2 3 4 5 6

1: Nominal	
CR	Carbofil™

2: Pore Rating	
05	5µm

3: Version	
N	Netted

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
H	G SOE
J	216 (218), fin
K	Code 2
L	223, fin (no lugs)
M	DOE
T	223, flat (no lugs)
U	224, fin
V	226, fin
Y	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FED Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

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

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

Filter Code	Cartridge Length (mm)	Micron Rating (µm)	Initial Δp (psi) @ flow rate lpm	Chlorine Reduction @ flow rate lpm
CR05-N1	250mm (10")	5	1.4psi @ 4 lpm	>23,000 litres @ 4 lpm
CR05-N2	508mm (20")	5	1.5psi @ 8 lpm	>46,000 litres @ 8 lpm
CR05-N3	762mm (30")	5	1.5psi @ 15 lpm	>69,000 litres @ 15 lpm
CR05-N4	1016mm (40")	5	1.5psi @ 20 lpm	>92,000 litres @ 20 lpm

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.

PFG737Rev7:Feb2023

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Cryptofil™

For the Removal of Cryptosporidium Oocysts

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

Ordering Information

Product Code: 1 2 3 4 5 6

1: Nominal

CP	Cryptofil™

2: Pore Rating

P6	0.6µm

3: Version

R	Rinsed
S	Standard Hard Cage

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FED Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

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
- 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)

Effective Filtration Area:
Up to 0.6m² per 10" module

Diameter:	70mm (2.8")	
Length:	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, 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

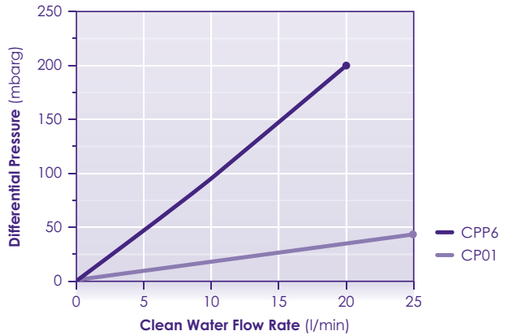
Minimum total extractables. Please refer to the Cryptofil™ Validation Guide.

Integrity Testing

Each Cryptofil™ module of every cartridge is individually integrity tested using the Bubble Point Test. Please contact us for procedural details.

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.



PFG716/Rev11:Nov21

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Klearfil™

Absolute Rated Pleated Depth Filters

A range of absolute rated cartridge filters are manufactured, featuring the latest developments in melt blown 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.

Typical Applications

- Pharmaceuticals and bio-processing
- Foods and beverages
- Process water systems
- Fine chemicals
- Cosmetics
- Inkjet

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Pre-Filter	
K	Klearfil™

2: Pore rating	
P5	0.5µm
01	1µm
02	2µm
03	3µm
05	5µm
10	10µm
15	15µm
20	20µm
30	30µm
40	40µm
75	75µm

3: Version	
R	Rinsed
S	Standard Hard Cage

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

Features and Benefits

- Graded multi-layer media
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- 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, 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 80 x 30 minute cycles at 130°C (275°F)
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables

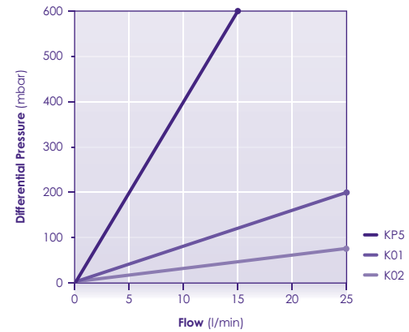
Minimum total extractables. Please refer to the Klearfil™ Validation Guide.

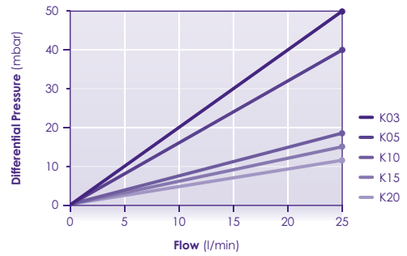
Integrity Testing

Klearfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Klearfil™ single cartridge exhibits the flow-**Δ**P 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.





PFG703/Rev10:Sept2023

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Microfil™

Absolute Rated Pleated Glass Fibre Cartridge Filters

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.

High viscosity Microfil™ HV versions of this range are available upon request.

Typical Applications

- Foods and beverages
- Process water systems
- Pharmaceuticals and bio-processing
- Fine chemicals
- Cosmetics

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Pre-Filter

M	Microfil™

2: Pore rating

P5	0.5µm
P8	0.8µm
01	1µm
02	2µm
05	5µm

3: Version

R	Rinsed
S	Standard Hard Cage

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional

A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

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)

Effective Filtration Area:
0.4m² (4.4ft²) per 10" module.

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

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 125°C (257°F)
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables

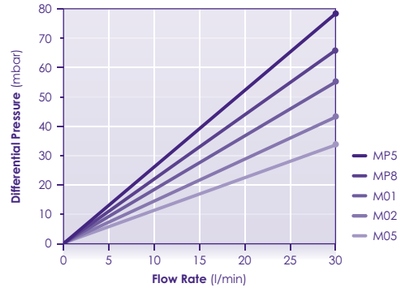
Minimum total extractables. Please refer to the Microfil™ Validation Guide.

Integrity Testing

Microfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Microfil™ single cartridge exhibits the flow-**Δ**P 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.



PFG705/Rev5:Nov23

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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 117.

Available with 304 stainless steel outer cage for high temperature and differential pressure applications.

Typical Applications

- Foods and beverages
- Process water systems
- Fine chemicals
- Cosmetics

Ordering Information

Product Code: 1 | 2 | 3 | GF | 4

1: Pre-Filter	
WF	Microfil™ WF

2: Pore rating	
P45	0.45µm
01	1µm
05	5µm
10	10µm
25	25µm
50	50µm
100	100µm

3: Length (Nominal)	
20	20" (508mm)
40	40" (1016mm)
60	60" (1524mm)

4: Seals	
E	EPDM
N	Nitrile
S	Silicone
V	Viton

**Other micron ratings available upon request*

Features and Benefits

- Available with 304 stainless steel outer cage for high temperature and differential pressure applications.
- 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

Effective Filtration Area:
5m² (53.8ft²) per 40" module.

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

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)

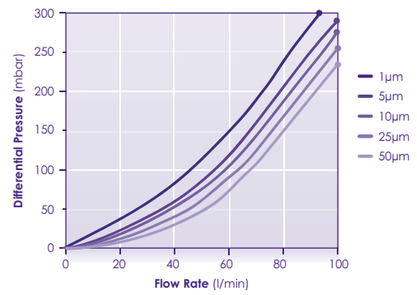
Sanitation

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

- Typical clean water flow rate:
  A 1016mm (40") Microfil™ WF cartridge exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a different viscosity, multiply the indicated differential pressure by the viscosity in centipoise.

Glass Fibre Media:



PFG758/Rev7:Nov23

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porvair filtration group

Polyfil™ II

Absolute Rated Pleated Polypropylene Cartridge Filters

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 150 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.

Typical Applications

- Pharmaceuticals and bio-processing
- Foods and beverages
- Inks and coatings
- Fine chemicals
- Cosmetics
- Process water systems

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Pre-Filter	
P	Polyfil™

2: Pore rating	
P5	0.5µm
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
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

Features and Benefits

- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- 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)

Effective Filtration Area:
Up to 0.6m² per 10" module (depending on pore rating).

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, 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 130°C (275°F)
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables

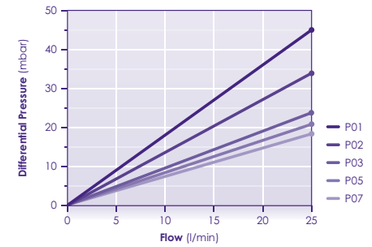
Minimum total extractables. Please refer to the Polyfil™ II Validation Guide.

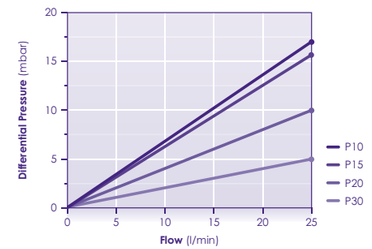
Integrity Testing

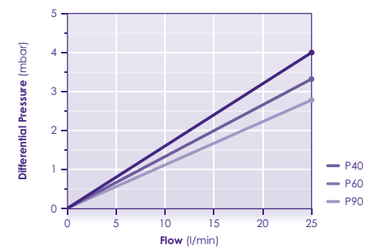
Polyfil™ II filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Polyfil™ II single cartridge exhibits the flow-**Δ**P 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.







PFG704/Rev15:Sept23

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porvair
filtration group

Polyfil™WF

Pleated Depth Filter or Final Polishing Filter

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.

Typical Applications

- Foods and beverages
- Inks and coatings
- Fine chemicals
- Cosmetics
- Process water systems

Ordering Information

Product Code: 1 2 3 **PP** 4

1: Pre-Filter	
WF	Polyfil™ WF

2: Pore rating	
P45	0.45µm
01	1µm
05	5µm
10	10µm
25	25µm
50	50µm
100	100µm

3: Length (Nominal)	
20	20" (508mm)
40	40" (1016mm)
60	60" (1524mm)

4: Seals	
E	EPDM
N	Nitrile
S	Silicone
V	Viton

**Other micron ratings available upon request*

Features and Benefits

- Available with 304 stainless steel outer cage for high temperature and differential pressure applications.
- 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
Drainage layers:	Polypropylene
Support mesh:	Polypropylene
Outer core:	Polypropylene
End caps:	Polypropylene

Cartridge Dimensions (Nominal)

Effective Filtration Area:
5m² (53.8ft²) per 40" module.

Outside Diameter:	154mm (6")
Inside Diameter:	75mm (3")
Length:	508mm (20") 1016mm (40") 1524mm (60")

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

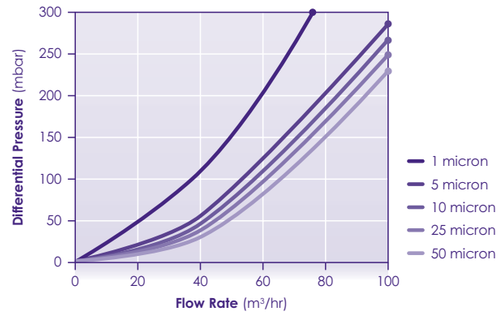
- Typical clean water flow rate:

  A 1016mm (40") Polyfil™ WF cartridge exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.

- Other solutions:

  For solutions with a different viscosity, multiply the indicated differential pressure by the viscosity in centipoise.

Polypropylene Media:



PFG744/Rev12:Feb2023

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Tekfil™ A

Absolute Rated Polypropylene Depth Cartridge Filters

Tekfil™ A 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™ A is available in a range of industrial standard lengths and is also available in Nylon construction for solvent filtration. Polyethylene foam gasket

Typical Applications

- Food and beverage
- Fine chemicals and solvents
- Coatings
- Photographic chemicals
- Metal finishing electroplating
- Water treatment prior to reverse osmosis
- Cosmetics product filling

Ordering Information

Product Code: 1 2 3 4 5 6

1: Pre-Filter	
TA	Tekfil™
TAY	Tekfil™ Nylon

2: Pore rating	
P5	0.5µm
01	1µm
03	3µm
05	5µm
10	10µm
25	25µm
50	50µm
75	75µm
100	100µm

3: Version	
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
G	G DOE (short)
M	DOE

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
H	Polyethylene foam gasket
J	DOE PTFE
N	None

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 and/or nylon.
- **Absolute removal ratings**
  Tekfil™ A cartridges are validated using recognised industry standard test methods.
- **Suitable for steam and hot water sanitisation**
  Tekfil™ A cartridges are resistant to repeat steam sterilisation and hot water cycles.

Specifications

Materials of Manufacture

Filter media:	Polypropylene/nylon
End fittings:	Polypropylene/nylon
Seals (if specified):	Silicon or EPDM

Cartridge Dimensions

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 adaptors.

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	3.5 bar (50psi)
60°C (140°F):	1.0 bar (15psi)
80°C (176°F):	0.5 bar (7psi)

Operating Temperature

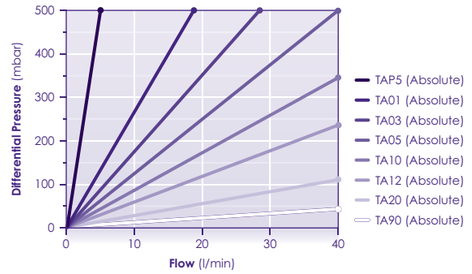
Maximum continuous: 80°C (176°F)

Extractables

Minimum total extractables.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Tekfil™ single cartridge exhibits the flow-**Δ**P 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.



PFG732/Rev6 :Feb2023

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Tekfil™ WF

Melt Blown Pre-Filter or Final Polishing Filter

Tekfil™ 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 117.

Typical Applications

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

Ordering Information

Product Code: 1 - 2 3

1: Pre-Filter

WFC	Tekfil™ WF

2: Pore rating

05	5µm
10	10µm
25	25µm
30	30µm
40	40µm
75	75µm

3: Length (Nominal)

20	20" (508mm)
40	40" (1016mm)

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)

Effective Filtration Area:
5m² (53.8ft²) per 40" module.

Outside diameter: 152mm (6")
Inside diameter: 114mm (4.5")
Length: 508mm (20")
1016mm (40")

Micron Rating

5µm, 10µm, 25µm, 40µm, 75µm and 100µm

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

Recommended Operating Conditions

	Polypropylene	Nylon
Recommended ΔP @ 20˚C (68˚F)	2 bar (29psi)	2 bar (29psi)
Maximum ΔP @ 20˚C (68˚F)	4 bar (58psi)	4 bar (58psi)
Maximum ΔP @ 80˚C (68˚F)	1 bar (15psi)	2 bar (29psi)
Maximum ΔP @ 135˚C (68˚F)	n/a	0.5 bar (7psi)

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): 1.5bar (22psi)

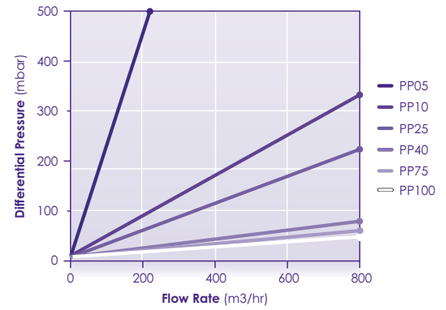
Clean Water Flow Rates

- Typical clean water flow rate:

  A 1016mm (40") Microfil™ WF cartridge exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.

- Other solutions:

  For solutions with a different viscosity, multiply the indicated differential pressure by the viscosity in centipoise.



PFG759/Rev7:Nov23

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Tekfil™HV

High Viscosity Filter Cartridge for the Filtration of Gels and Viscous Fluids

Tekfil™ HV 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.

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

The all-polypropylene construction of the filters are free from silicone and binders and ensures zero fibre mitigation during the recommended process conditions. All Tekfil™ HV 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
- High degree of chemical compatability
- High dirt holding capacity
- Absolute and nominal removal ratings
- Silicone Free

Ordering Information

Product Code: 1 2 3 4 5 6

1: Pre-Filter

TGV	Tekfil™ GV

2: Pore rating

01	1µm
03	3µm
20	20µm

3: Version

S	Standard

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

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 adaptors.

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.

PFG741/Rev5:Feb2023

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porvair filtration group

Trapfil™

Polypropylene Guard Filters for Clear, Bright Beverages

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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Pre-Filter	
R	Trapfil™

2: Pore rating	
05	5µm
10	10µm
15	15µm

3: Version	
S	Standard Hard Cage

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
P	Pharma Grade
U	Unbranded

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)

Effective Filtration Area:
0.53m² (5.7ft²) per 10" module.

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

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

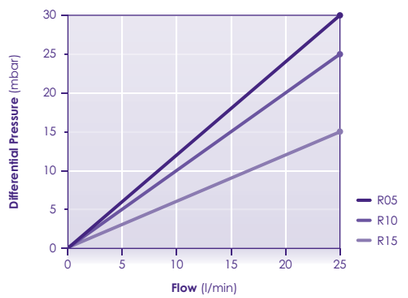
Minimum total extractables. Please refer to the Trapfil™ Validation Guide.

Integrity Testing

Trapfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Trapfil™ single cartridge exhibits the flow-**Δ**P 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.



PFG706/Rev12:Feb2023

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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 bio-processing
- Pilot-scale studies
- Batch processing

Ordering Information

Product Code: 1 **M** 2 3 4

1: Configuration

J	J-Style
S	S-Style
L	L-Style

2: Pore Rating

P5	0.5µm
P8	0.8µm
01	1µm
02	2µm
05	5µm

3: Length

25	77.5mm (2.5")
50	136mm (5")

4: Seals (J/L Style)

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone

Features and Benefits

- Zeta potential
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- 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)

Effective Filtration Area:
0.15m² (1.6ft²) per 5" length.

Diameter:	56mm (2.2")
Length:	77.5mm (2.5") 136mm (5")

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 20 x 30 minute cycles at 125°C (257°F)
S-style:	Autoclave 20 x 30 minute cycles at 125°C (257°F)
L-style:	*In situ* steam 20 x 30 minute cycles at 125°C (257°F)

Extractables

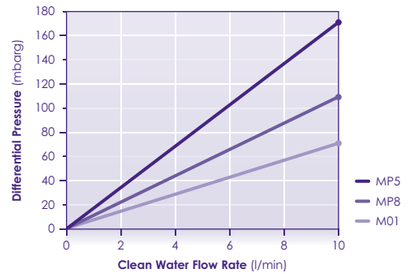
Minimum total extractables. Please refer to the Microfil™ Validation Guide.

Integrity Testing

Microfil™ Junior filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 136mm (5") Microfil™ Junior cartridge exhibits the flow-**Δ**P 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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porvair filtration group

Polyfil™ Junior

Absolute Rated Pleated Polypropylene Cartridge Filters Small-Scale Applications

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.

Typical Applications

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

Ordering Information

Product Code: 1 P 2 3 4

1: Configuration		2: Pore rating		3: Length		4: Seals (J/L Style)	
J	J-Style	P5	0.5µm	25	77.5mm (2.5")	A	Ethylene Propylene
S	S-Style	P8	0.8µm	50	136mm (5")	B	Silicone
L	L-Style	01	1µm			C	Viton®
						D	Nitrile
						E	FEP Encap. Viton®
						G	FEP Encap. Silicone

Features and Benefits

- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- 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)

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

Diameter: 56mm (2.2")
Length: 77.5mm (2.5")
136mm (5")

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

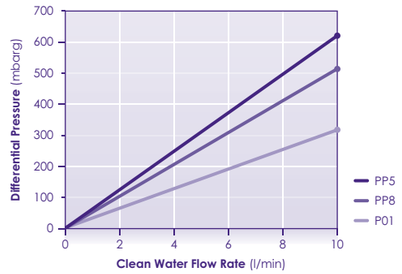
Minimum total extractables. Please refer to the Polyfil™ II Validation Guide.

Integrity Testing

Polyfil™ Junior filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 136mm (5") Polyfil™ Junior cartridge exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



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Aquafil™

Single Layer Polyethersulfone Membrane Cartridge Filters

Aquafil™ cartridges are based on a naturally hydrophilic polyethersulfone 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 polyethersulfone 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 they are suited to retention down to 0.2 micron ratings. offering high flux rates and low differential pressures, a feature common to polyethersulfone membranes.

Aquafil™ cartridges benefit from the low non-specific protein binding characteristics of polyethersulfone membranes. 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.

Typical Applications

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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane		2: Pore rating		3: Version		4: Length (Nominal)		5: End Fitting		6: Seals†		7: Additional	
A	Aquafil™ II	20	0.2µm	R	Rinsed	1	10" (254mm)	A	Code 3	A	Ethylene Propylene	A	N+U
		45	0.45µm	S	Standard	2	20" (508mm)	B	Code 7	B	Silicone	N	Non-steamable (no insert)
		65	0.65µm			3	30" (762mm)	C	Code 8	C	Viton®	P	Pharma Grade
		120	1.2µm			4	40" (1016mm)	F	N SOE	D	Nitrile	U	Unbranded
						5	5" (125mm)	G	G DOE (short)	E	FEP Encap. Viton®		
								H	G SOE	G	FEP Encap. Silicone		
								J	216 (218), fin	J	DOE PTFE		
								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				
								W	F20 +Code 7 (SS Core)				
								X	F20 +Code 2 (SS Core)				
								Y	BS832, flat				
								Z	F20 +Code Y (SS Core)				

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:	Polyethersulfone
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)

Effective Filtration Area:
0.69m² (7.4ft²) per 10" module

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

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

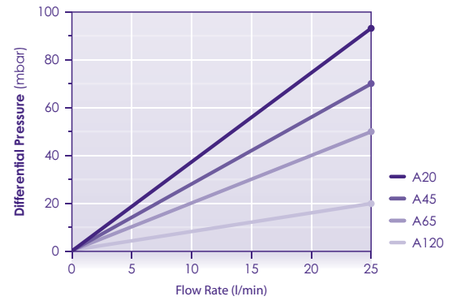
In situ steam 80 x 20 minute cycles at 125°C (257°F)
Hot water 100 x 20 minute cycles at 85-90°C (185-194°F)

Extractables

Minimum total extractables

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Aquafil™ single cartridge exhibits the flow-**Δ**P 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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porvair filtration group

Biofil™ 2

Polyethersulfone Membrane Cartridge Filters

Biofil™ 2 cartridges are based on a naturally hydrophilic polyethersulfone (PES) membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the polyethersulfone membrane provides a high strength, long life cartridge of consistently precise microbial retention.

Biofil™ 2 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. Biofil™ 2 cartridges offer high flux rates and low differential pressures, a feature common to polyethersulfone membranes.

Biofil™ 2 cartridges benefit from the low non-specific protein binding characteristics of polyethersulfone membranes. They are highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics. As they have excellent stability to hydrolysis, Biofil™ 2 cartridges are ideal for use in ultra pure water supply systems (18MΩ. cm).

Typical Applications

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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane

BT	Biofil™ 2

2: Pore rating

10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
120	1.2µm

3: Version

R	Rinsed
S	Standard

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Y	BS832, flat
Z	F20 +Code Y (SS Core)

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional

A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

Features and Benefits

- Guaranteed microbial ratings
- Low protein binding
- Excellent hydrolysis resistance
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

Filter membrane:	Polyethersulfone
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)

Effective Filtration Area:		0.69m² (7.4ft²) (per 10" module)
Diameter:		70mm (2.8")
Length:	1 module:	254mm (10")
	2 modules:	508mm (20")
	3 modules:	762mm (30")
	4 modules:	1016mm (40")

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 30 minute cycles at 135°C (275°F)
Hot water 100 x 20 minute cycles at 90°C (194°F)

Extractables

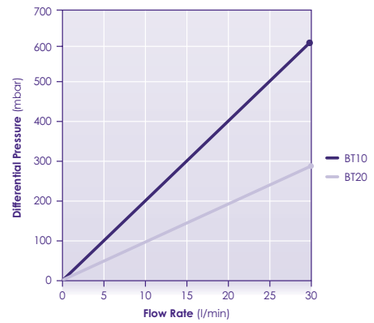
Minimum total extractables. Please refer to the Biofil™ 2 Validation Guide.

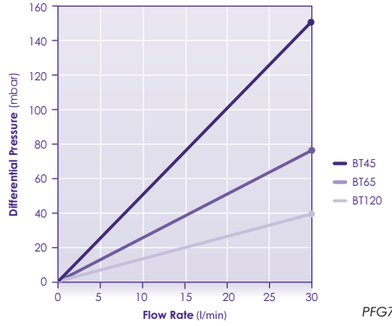
Integrity Testing

Each Biofil™ 2 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. Please contact us for procedural detail.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Biofil™ 2 single cartridge exhibits the flow-**Δ**P 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.





PFG700/Rev12:Nov23

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porvair filtration group

Biofil™ 2 Plus

Double Layer Polyethersulfone Membrane Cartridge Filters

A Biofil™ 2 Plus microbial rated cartridge has been developed and manufactured for the filtration of liquids within pharmaceutical, biotechnology and other critical applications.

Biofil™ 2 Plus utilises a naturally hydrophilic polyethersulfone (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™ 2 Plus filter cartridge is ideally suited to the most demanding process conditions.

Quality and consistency of product are assured by the quality control and manufacturing procedures which are in place throughout all stages of manufacture. Biofil™ 2 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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane	
BTP	Biofil™ 2 Plus

2: Pore rating	
20	0.2µm
45	0.45µm

3: Version	
R	Rinsed
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Y	BS832, flat
Z	F20 +Code Y (SS Code)

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

Features and Benefits

- Guaranteed microbial ratings
- Low protein binding
- Will not hydrolyse
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

Pre-filter membrane:	Polyethersulfone
Final membrane:	Polyethersulfone
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)

Effective Filtration Area:		0.48m² (5.2ft²) (per 10" module)
Diameter:		70mm (2.8")
Length:	1 module:	254mm (10")
	2 modules:	508mm (20")
	3 modules:	762mm (30")
	4 modules:	1016mm (40")

Other size formats (including juniors) are available upon request.

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 112 x 20 minute cycles at 125°C (257°F)
Hot water 100 x 20 minute cycles at 85-90°C (185-194°F)

Extractables

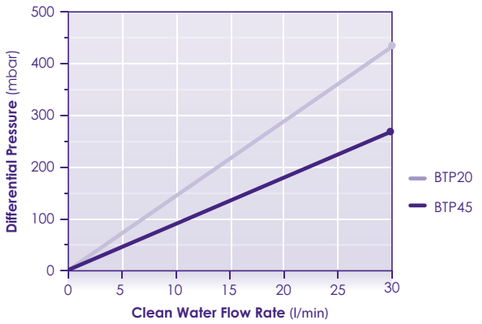
Minimum total extractables. Please refer to the Biofil™ 2 Plus Validation Guide.

Integrity Testing

Each Biofil™ 2 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. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Biofil™ 2 Plus single cartridge exhibits the flow-**Δ**P 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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porvair filtration group

Biofil™ 3

Polyethersulfone Membrane Cartridge Filters

Porvair Biofil™ 3 cartridges utilise a single layer of polyethersulfone (PES) membrane, providing a filter with effective bioburden reduction properties (LRV ≥ 7) to support the manufacture of pharmaceutical, food & beverage and other life science products. The inherently hydrophilic and highly asymmetric nature of the PES membrane facilitates high flux rates and enhances the wettability characteristics of the cartridges. By combining this membrane with quality all-polypropylene support components and high integrity manufacturing techniques, Biofil™ 3 filter cartridges are ideally suited to the most demanding process conditions.

Typical Applications

- Biopharmaceuticals
- Opthalmic solutions
- Electronics and semiconductors
- Fine chemicals
- Beverages
- Pure water supply

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane		2: Pore rating		3: Version	
BW	Biofil™ 3	20	0.2µm	R	Rinsed
		45	0.45µm	S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

Features and Benefits

- Guaranteed microbial ratings
- Low protein binding
- Excellent hydrolysis resistance
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

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

All polymeric materials used in the manufacture of Biofil™ 3 are USP Class VI-121, FDA CFR 21 & EC 10/2011 compliant. The finished device has also been tested and proven to show compliance with USP Class VI-121.

Cartridge Dimensions (Nominal)

Effective Filtration Area:		0.69m² (7.4ft²) (per 10" module)
Diameter:		70mm (2.8")
Length:	1 module:	254mm (10")
	2 modules:	508mm (20")
	3 modules:	762mm (30")
	4 modules:	1016mm (40")

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)
Reverse flow direction at:		
	20°C (68°F):	2.1bar (30psi)
	80°C (176°F):	1.0bar (15psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilisation

In situ steam 20 x 30 minute cycles at 135°C (275°F)
Hot water 100 x 30 minute cycles at 90°C (194°F)

Integrity Testing

Each Biofil™ 3 module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-20 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural detail.

Filtrate Quality

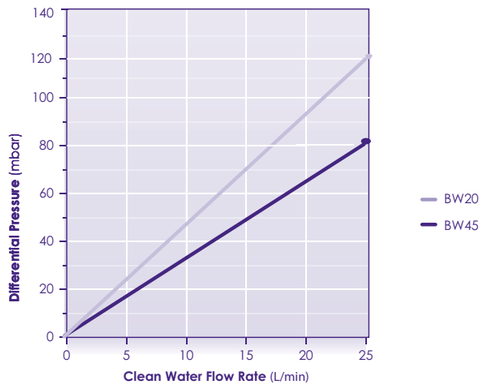
Cartridges have been validated to give high levels of effluent cleanliness, in accordance with USP guidance for:

- Extractables
- TOC & Conductivity
- Particulates & Non-Fibre Release
- Bacterial Endotoxins

Please refer to the Biofil™ 3 Validation Guide for full supporting data.

Clean Water Flow Rates

- A 254mm (10") Biofil™ 3 single cartridge exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.



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porvair filtration group

Biofil™ 3 Plus

Sterilising-Grade Polyethersulfone Membrane Cartridge Filters

Biofil™ 3 Plus 0.2micron are sterilising grade filters designed for filtration of a broad range of liquids in pharmaceutical, biotechnology and other critical applications.

Biofil™ 3 Plus cartridges feature a unique hydrophilic and highly asymmetric double layer polyethersulfone membrane with broad chemical compatibility, high thermal resistance, fast flow rates, enhanced wettability and reliable sterilising filtration performance. When combined with quality all-polypropylene components and high integrity manufacturing techniques, the Biofil™ 3 Plus filter cartridge is ideally suited to the most demanding process conditions.

Typical Applications

- Final 0.2µm sterilising filtration
- Biopharmaceuticals
- Fermentation
- Ophthalmic solutions
- Vaccines
- Parenteral drugs (SVP, LVP)
- High purity DI water and WFI systems

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane	
BWP	Biofil™ 3 Plus

2: Pore rating	
20	0.2µm

3: Version	
R	Rinsed
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

Features and Benefits

- Validated 0.2µm absolute-rated membrane
- Reliable sterilising filtration
- Hidrophilic asymmetric polyethersulfone membrane
- Low protein binding
- Excellent hydrolysis resistance
- Excellent chemical compatibility
- Suitable for steam sterilising
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

Filter membrane:	Dual-layer Polyethersulfone Membrane
Support/Drainage layer:	Polypropylene/ Polypropylene
Inner core:	Polypropylene
Shroud:	Polypropylene
End fittings:	Polypropylene
Support ring:	Stainless steel

All polymeric materials used in the manufacture of Biofil™ 3 Plus are USP Class VI-121°C, FDA CFR 21 & EU 10/2011 compliant. The finished device has also been tested and proven to show compliance with USP Class VI-121°C plastics.

Cartridge Dimensions (Nominal)

Effective Filtration Area:		0.53m² (5.7ft²) (per 10" module)
Diameter:		70mm (2.8")
Length:	1 module:	254mm (10")
	2 modules:	508mm (20")
	3 modules:	762mm (30")
	4 modules:	1016mm (40")

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)

Reverse flow direction at:

20°C (68°F):	2.1bar (30psi)
80°C (176°F):	1.0bar (15psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilisation

In situ steam 40 x 30 minute cycles at 135°C (275°F)
Hot water 100 x 30 minute cycles at 90°C (194°F)

Extractables

Minimum total extractables. Please refer to the Biofil™ 3 Plus Validation Guide.

Integrity Testing

Each Biofil™ 3 Plus module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-20 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural detail.

Filtrate Quality

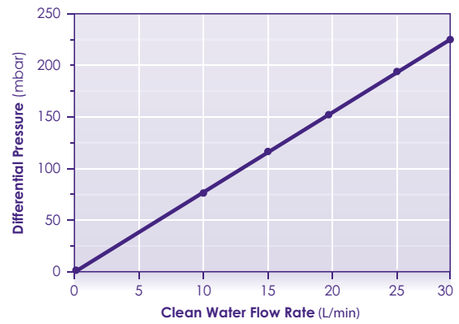
Cartridges have been validated to give high levels of effluent cleanliness, in accordance with USP guidance for:

- Extractables
- TOC & Conductivity
- Particulates & Non-Fibre Release
- Bacterial Endotoxins

Please refer to the Biofil™ 3 Plus Validation Guide for full supporting data.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Biofil™ Plus single cartridge exhibits the flow-**Δ**P 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.



PFG797/Jan2023

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porvair filtration group

Fluorofil™

ePTFE Membrane Cartridge Filters

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 makes 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.

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
- Steam sterilisation
- Cartridge integrity and low TOC levels
- Solvents and aggressive chemicals
- Full traceability
- Controlled manufacturing environment

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane	
F	Fluorofil™

2: Pore rating	
20	0.2µm
45	0.45µm

3: Version	
R	Rinsed
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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	BS832, flat

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

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)

Effective Filtration Area:
Up to 0.73m² (7.8ft²) per 10" module

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")

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

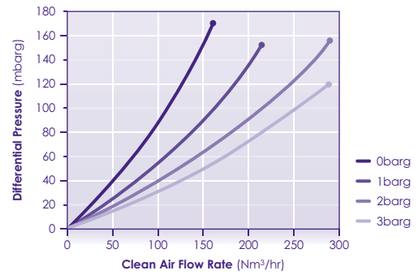
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

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. Please contact us for procedural details.

Gas Flow Rates

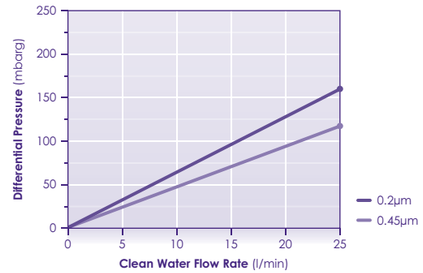
- Typical clean air flow rate:
  A 254mm (10") Fluorofil™, 0.2µm single cartridge exhibits the flow-ΔP characteristics indicated below.



Clean Water Flow Rates

(after Solvent Pre-wet and Water Flush)

- Typical clean water flow rate:
  A 254mm (10") Fluorofil™ single cartridge with 0.2µm microbial rating exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



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porvair filtration group

Fluorofil™Plus

High Flow Sterile Gas Filters with ePTFE Membrane

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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane		2: Pore rating		3: Version	
F	Fluorofil™	20	0.2µm	S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Z	F20 +Code Y (SS Core)

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
P	Pharma Grade
U	Unbranded

Features and Benefits

- Guaranteed microbial ratings
- Bacterial spores and viruses
- 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:	316/316L stainless steel
Outer support:	Polypropylene
End fittings:	Polypropylene
Sealing:	Fusion bonding

Cartridge Dimensions (Nominal)

Effective Filtration Area:
0.8m² (8.6ft²) per 10" module

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")

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

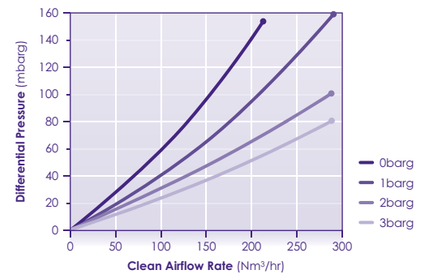
Minimum total extractables. Please refer to the Fluorofil™ Plus Validation Guide.

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. Please contact us for procedural details.

Gas Flow Rates

- Typical clean air flow rate:
  A 254mm (10") Fluorofil™ Plus single cartridge exhibits the flow-**Δ**P characteristics indicated below.



PFG708/Rev13:Dec24

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porvair filtration group

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
- Cartridge integrity and low TOC levels
- Solvents and aggressive chemicals
- Full traceability
- Controlled manufacturing environment

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane	
F	Fluorofil™

2: Pore rating	
100	1.0µm

3: Version	
R	Rinsed
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Y	BS832, flat
Z	F20 +Code Y (SS Core)

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

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)

Effective Filtration Area:
0.68m² (7.3ft²) per 10" module Diameter: 70mm (2.8")

Length:	1 module:	254mm (10")
	2 modules:	508mm (20")
	3 modules:	762mm (30")
	4 modules:	1016mm (40")

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.

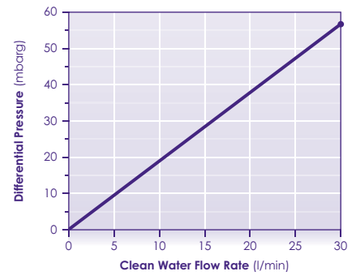
Integrity Testing

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. Please contact us for procedural details.

Clean Water Flow Rates

(after Solvent Pre-wet and Water Flush)

- Typical clean water flow rate:
  A 254mm (10") Fluorofil™ F100 single cartridge with 1.0µm particle retention rating exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



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porvair filtration group

Hydrofil™

Nylon 6.6 Membrane Cartridge Filters

Microbially rated cartridge filters featuring the latest developments in membrane technology, Hydrofil™ cartridges, are based on a naturally hydrophilic nylon membrane.

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 0.01 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 and have excellent chemical compatibility characteristics. Hydrofil™ cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, mixed esters of cellulose or polysulphone membranes.

Typical Applications

- Biopharmaceuticals: Bioburden reduction and clarification
- Electronics and semiconductors
- Fine chemicals
- Beverages
- Pure water supply (18MΩ.cm)

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane

HT	Hydrofil™

2: Pore rating

10	0.1µm
20	0.2µm
45	0.45µm

3: Version

R	Rinsed
S	Standard

4: Length (Nominal)

1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting

A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Y	BS832, flat
Z	F20 +Code Y (SS Core)

6: Seals

A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional

A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

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)

Effective Filtration Area:
0.63m² (6.8ft²) per 10" module

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

Other size formats (including juniors) are available upon request.

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 up to 40 x 25 min cycles at 121°C (250°F).

Extractables

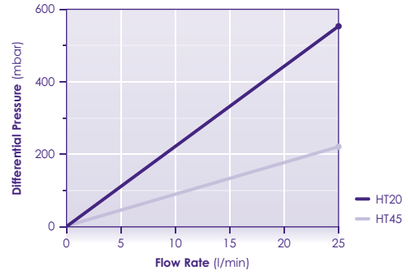
Minimum total extractables. Please refer to the Hydrofil™ Validation Guide.

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. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Hydrofil™ single cartridge exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



PFG723/Rev13:March2023

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porvair filtration group

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 utilises 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 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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane	
HTP	Hydrofil™ Plus

2: Pore rating	
10	0.1µm
20	0.2µm

3: Version	
R	Rinsed
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Y	BS832, flat
Z	F20 +Code Y (SS Core)

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

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

Pre-filter membrane:	Nylon 6.6
Final 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)

Effective Filtration Area:
0.63m² (6.8ft²) per 10" module

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

Other size formats (including juniors) are available upon request.

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 up to 40 x 25 min cycles at 121°C (250°F).

Extractables

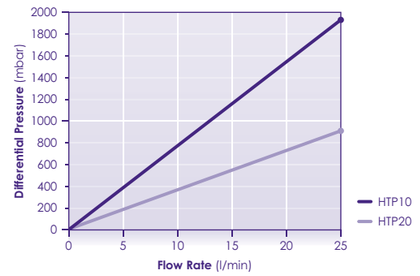
Minimum total extractables. Please refer to the Hydrofil™ Validation Guide.

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. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Hydrofil™ Plus single cartridge exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



PFG734/Rev12:Nov24

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porvair filtration group

Teffil™

Superior PTFE Membrane Filters

Teffil™ is a range of superior pleated PTFE membrane filters with PFA supports. These cartridge filters are suitable for use within a number of process and chemical applications.

This chemically inert filter range offers the removal of fine particulate from 0.05-10 micron in challenging operating conditions.

Typical Applications

- Aggressive chemicals
- High purity chemicals

Features and Benefits

- Excellent flow characteristics
- Full traceability
- Controlled manufacturing environment
- Fast rinse up time
- Low binding and fouling

Ordering Information

Product Code: X - X - X - X - X - X

Series		Pore rating (µm)		Version		Length		Adaptor		Seals	
FL	Teffil™	P5	0.05	S	Standard	04	102mm (4")	A	Code 3	A	EPDM
		10	0.1	W	Pre-wet	1	250mm (10")			B	Silicone
		20	0.2			2	510mm (20")			C	Viton®
										K	FEP/FKM

**Other options available on request.*

Specifications

Materials of Manufacture

Filtration media:	Hydrophobic PTFE membrane
End caps:	PFA
Centre core:	PFA
Outer hardware:	PFA
Gaskets/O-rings:	PFA encapsulated FKM

Cartridge Dimensions (Nominal)

Diameter: 67mm (2.6")
Length: 254mm (10")

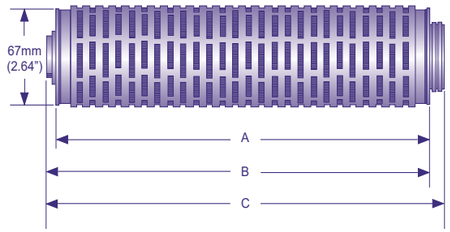
Pore Size Rating

0.05, 0.1, 0.2, 0.45, 1, 5 and 10 microns.

Differential Pressure

Maximum forward differential pressure:
5bar (72.5psi) @ 25°C (77°F)

Dimension Specifications



Length (inch)	A	B	C
4	105mm +/-2	110mm +/-2	128mm +/-2
10	237mm +/-2	242mm +/-2	261mm +/-2
20	463mm +/-3	468mm +/-3	486mm +/-3

Recommended Change Out Differential Pressure

2.4bar (34.8psi)

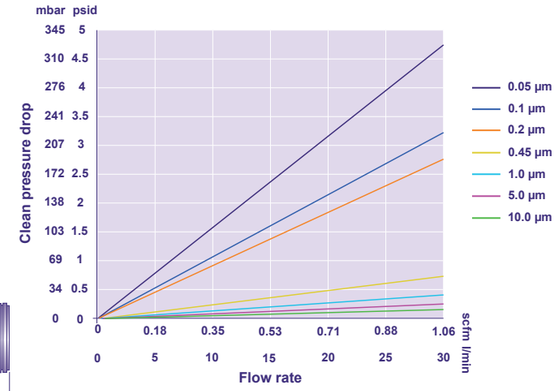
Maximum Operating Temperature

180°C (356°F) at the above conditions.

Metallic Cleanliness

<25µg per device. Ultra-high-purity.

Flow Rates



Total metals (13 elements, ICP-MS)	UHP < 25 ppb / device Ultra Low Metal < 10 ppb / device
Particle shedding cleanliness	< 5 particles / 1ml ≥ 0.15um @10LPM UPW Flow
TOC recovery (per 10" equivalent)	< 5ppb of feed DI water after 120L @ 5LPM
Resistivity recovery (per 10" equivalent)	< 0.5MΩ of feed DI water after 120L @ 5LPM

PFG781/Rev6:April24

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porvair filtration group

Teffil™ HF

High Flow PTFE Membrane Filters

Teffil™ HF is a range of fully optimised high flow PTFE membrane filters with PFA supports. These cartridge filters are suitable for use within a number of chemical applications including organic stripper, IPA and other solvent recirculation bath applications.

This chemically inert filter range offers the removal of fine particulate from 0.05-5 micron in challenging operating conditions.

Typical Applications

- Aggressive chemicals
  Chemical delivery system filtration of strong acid base solution.
- Solvents
  UHP solvent treatment for bumping stripper.
- High purity chemicals

Features and Benefits

- Excellent flow characteristics
- Full traceability
- Controlled manufacturing environment
- Fast rinse up time
- Low binding and fouling

Ordering Information

Product Code: X - X - X - X - X - X

Series		Pore rating (µm)		Version		Length		Adaptor		Seals	
FL	Teffil™	P5	0.05	H	High Flow	04	102mm (4")	A	Code 3	A	EPDM
		10	0.1			1	250mm (10")			B	Silicone
		20	0.2			2	510mm (20")			C	Viton®
										K	FEP/FKM

Other options available on request.

Specifications

Materials of Manufacture

Filtration media: membrane	Hydrophobic PTFE
End caps:	PFA
Centre core:	PFA
Outer hardware:	PFA
Gaskets/O-rings:	PFA encapsulated FKM

Cartridge Dimensions (Nominal)

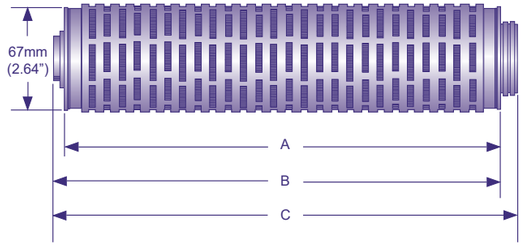
Diameter: 67mm (2.6")
Length: 254mm (10")

Pore Size Rating

0.05, 0.1, 0.2, 0.45, 1 and 5 microns.

Dimension Specifications

Length (inch)	A	B	C
4	105mm +/-2	110mm +/-2	128mm +/-2
10	237mm +/-2	242mm +/-2	261mm +/-2
20	463mm +/-3	468mm +/-3	486mm +/-3



Differential Pressure

Maximum forward differential pressure:
5.1bar (75psi) @ 25°C (77°F)
5.1bar (75psi) @ 120°C (248°F)

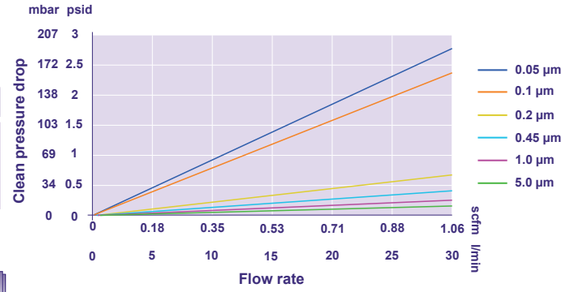
Operating Temperature

Maximum operating temperature:
180°C (356°F) at the above conditions.

Metallic Cleanliness

<25µg per device. Ultra-high-purity.

Flow Rates



Total metals (13 elements, ICP-MS)	UHP < 25 ppb / device Ultra low metal < 10 ppb / device
Particle shedding cleanliness	< 5 particles / 1ml ≥ 0.15um @10LPM UPW flow
TOC recovery (per 10" equivalent)	< 5ppb of feed DI water after 120L @ 5LPM
Resistivity recovery (per 10" equivalent)	< 0.5MΩ of feed DI water after 120L @ 5LPM

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porvair filtration group

Vinofil™

Double Layer Membrane Filters for Wine and Beer Filtration

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 polyethersulfone (PES) membrane with a mirrored asymmetric pore structure, providing graded filtration throughout its depth, resulting in higher throughputs and long service life.

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. These cartridges offer high flux rates and low differential pressures, a feature common to polyethersulfone membranes.

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

Typical Applications

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

Ordering Information

Product Code: 1 2 3 4 5 6 7

1: Membrane	
VT	Vinofil™

2: Pore rating	
20	0.2µm
45	0.45µm
65	0.65µm

3: Version	
R	Rinsed
S	Standard

4: Length (Nominal)	
1	10" (254mm)
2	20" (508mm)
3	30" (762mm)
4	40" (1016mm)
5	5" (125mm)

5: End Fitting	
A	Code 3
B	Code 7
C	Code 8
F	N SOE
G	G DOE (short)
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
W	F20 +Code 7 (SS Core)
X	F20 +Code 2 (SS Core)
Y	BS832, flat
Z	F20 +Code Y (SS Core)

6: Seals	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone
J	DOE PTFE

7: Additional	
A	N+U
N	Non-steamable (no insert)
P	Pharma Grade
U	Unbranded

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 Polyethersulfone
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)

Effective Filtration Area:
0.48m² (5.2ft²) per 10" module

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")

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 200 x 20 minute cycles at 85-90°C (185-194°F)

Extractables

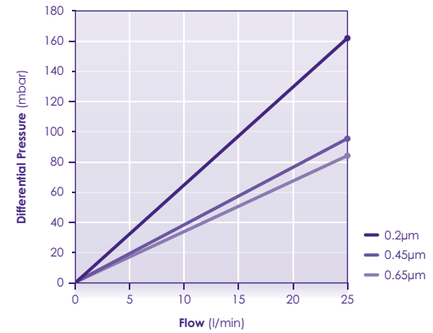
Minimum total extractables. Please refer to the Vinofil™ Validation Guide.

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. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Vinofil™ single cartridge exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



PFG702/Rev:3 Nov24

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Biofil™ 2 Junior

Polyethersulfone Membrane Cartridge Filters for Small-Scale Applications

Biofil™ 2 Junior cartridges are based on a naturally hydrophilic polyethersulfone membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the polyethersulfone membrane provides a high strength, long life cartridge of consistently precise microbial retention.

Biofil™ 2 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™ 2 Junior cartridges are suited to critical particle control down to 0.1 micron ratings. These cartridges offer high flux rates and low differential pressures, a feature common to polyethersulfone membranes.

Ordering Information

Product Code: 1 **B** 2 3 4

1: Configuration	
J	J-Style
S	S-Style
L	L-Style

2: Pore rating	
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
120	1.2µm

3: Length	
25	77.5mm (2.5")
50	136mm (5")

4: Seals (J/L Style)	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone

Typical Applications

- Small-scale biopharmaceuticals
- Ophthalmic solutions
- Electronics and semiconductors
- Small-scale fine chemicals
- Pilot-scale studies
- Point-of-use water supply
- Ultra pure water supply systems (18MΩ.cm).

Features and Benefits

- Guaranteed 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:	Polyethersulfone
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)

Effective Filtration Area:	0.19m² (2.05ft²) per 5" length
Diameter:	56mm (2.2")
Length:	77.5mm (2.5") 136mm (5")

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

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

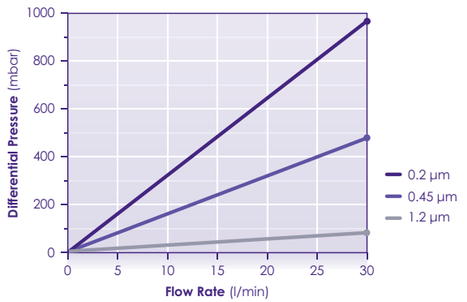
Minimum total extractables. Please refer to the Biofil™ 2 Validation Guide.

Integrity Testing

Each Biofil™ 2 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. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 136mm (5") Biofil™ 2 Junior cartridge exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



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.

PFG726/Rev15:March23

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Hydrofil™ Junior

Nylon 6.6 Membrane Cartridge Filters

Microbially rated cartridge filters featuring the latest developments in membrane technology, Hydrofil™ Junior cartridges, are based on a naturally hydrophilic nylon membrane.

Hydrofil™ 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 Hydrofil™ Junior cartridges are very suited to critical particle control down to 0.1 micron ratings.

Hydrofil™ Junior cartridges benefit from high protein binding characteristics of nylon membranes and have excellent chemical compatibility characteristics. Hydrofil™ Junior cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, mixed esters of cellulose or polysulphone membranes.

Typical Applications

- Small-scale biopharmaceuticals: Bioburden reduction and clarification
- Electronics and semiconductors
- Small-scale fine chemicals
- Pilot-scale studies
- Beverages
- Point-of-use water supply
- Pure water supply (18MΩ.cm)

Ordering Information

Product Code: 1 H 2 3 4

1: Configuration		2: Pore rating		3: Length		4: Seals (J/L Style)	
J	J-Style	10	0.1µm	25	77.5mm (2.5")	A	Ethylene Propylene
S	S-Style	20	0.2µm	50	136mm (5")	B	Silicone
L	L-Style	45	0.45µm			C	Viton®
						D	Nitrile
						E	FEP Encap. Viton®
						G	FEP Encap. Silicone

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)

Effective Filtration Area:
0.20m² (2.15ft²) per 5" length

Diameter:	56mm (2.2")
Length:	77.5mm (2.5") 136mm (5")

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

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: 60°C (140°F)

Sterilisation

J-style:	In situ steam up to 40 x 25 minute cycles at 121°C (250°F)
S-style:	Autoclave up to 40 x 25 minute cycles at 121°C (250°F)
L-style:	In situ steam up to 40 x 25 minute cycles at 121°C (250°F)

Filtrate Quality

Cartridges have been validated to give high levels of effluent cleanliness, in accordance with USP guidance for:

- Total Extractables
- TOC & Conductivity
- Particulates & Non-Fibre Release
- Bacterial Endotoxins

Please refer to the Hydrofil™ Validation Guide for full supporting data.

Integrity Testing

Each Hydrofil™ Junior module of every cartridge is individually integrity tested using the Diffusive FlowTest, 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. Please contact us for procedural details.

PFG730/ Rev1:Nov24

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porvair filtration group

Fluorofil™ Junior

ePTFE Membrane Cartridge Filters for Small-Scale Applications

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.

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.

Typical Applications

- Sterile vents
- Small-scale sterile process gases
- Small-scale fine chemicals and solvents
- Small-scale photoresists and developers
- Aggressive chemical solutions including acids, alkalis, solvents and etchants.

Features and Benefits

- High filtration area
- Guaranteed removal ratings
- Suitable for steam sterilisation
- Full traceability
- Controlled manufacturing environment

Ordering Information

Product Code: 1 **F** 2 3 4

1: Configuration	
J	J-Style
S	S-Style
L	L-Style
N	N-Style

2: Pore rating	
20	0.2µm
45	0.45µm

3: Length	
15	43mm (1.5")
25	77.5mm (2.5")
50	136mm (5")

4: Seals (J/L Style)	
A	Ethylene Propylene
B	Silicone
C	Viton®
D	Nitrile
E	FEP Encap. Viton®
G	FEP Encap. Silicone

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)

Effective Filtration Area:
0.19m² (2.05ft²) per 5" length.

Diameter: 56mm (2.2")

Lengths: 43mm (1.5")
77.5mm (2.5")
136mm (5")

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)

N-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 100 x 20 minute cycles at 135°C (275°F)

Extractables

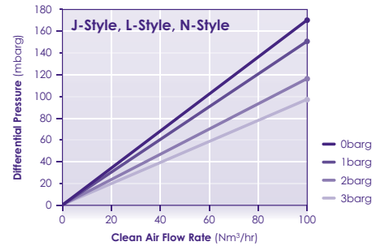
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

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**.

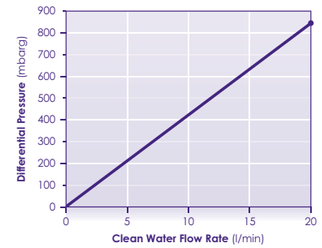
Gas Flow Rates

- Typical clean air flow rate:
  A 136mm (5") Fluorofil™ Junior, 0.2µm cartridge exhibits the flow-**Δ**P characteristics indicated below.



Clean Water Flow Rates (after Solvent Pre-wet and Water Flush)

- Typical clean water flow rate:
  A 136mm (5") Fluorofil™ Junior cartridge (J-style) with 0.2µm microbial rating exhibits the flow-**Δ**P characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
  For solutions with a viscosity other than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.



PFG722/Rev13:Nov24

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Ventafil™

ePTFE Membrane Cartridge Filters for Autoclave Venting

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 either a ¼" or 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
- Steam sterilisation
- Cartridge integrity and low TOC levels
- Full traceability
- Controlled manufacturing environment

Ordering Information

Product Code: 1 2 3

1: J-Style	
F20VENT	Ventafil™

2: Length	
25	77.5mm (2.5")
50	136mm (5")

2: Options Threaded	
B	1/2" BSP
X	1/4" BSP

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)

Effective Filtration Area:
0.37m² (4.0ft²) per 5" module.

Diameter:	70mm (2.8")
Length:	64mm (2.5") 136mm (5")

Cartridge Treatment

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

Adaptor and O-Ring

Silicone (other materials are available on request)
¼" and 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

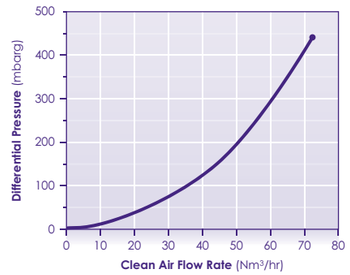
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

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**.

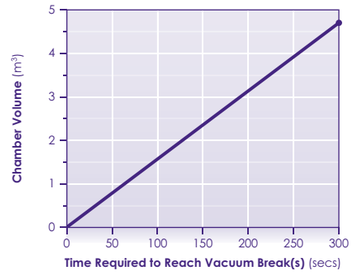
Clean Air Flow Rates

- Typical clean air flow rate:
  A 136mm (5") Ventafil™ cartridge exhibits the flow-**Δ**P characteristics indicated below.



Filter Selection

- 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.



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filtration group

Stainless Steel Filter Housings

Sanitary and Industrial

For details on our complete range of stainless steel filter housings, please view our Housings Catalogue.

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.

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

A special range of high-pressure 350bar (5,076psi) 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.

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 316/316L
- 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.

Ordering Information

For ordering information please contact a member of the sales team.

Plastic Filter Housings

for a Wide Range of Process Applications

For details on our complete range of plastic filter housings, please view our Housings Catalogue.

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 Tightenend**
  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.

Typical 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.

Ordering Information

For ordering information please contact a member of the sales team.

PFG715/Rev11:June 2021

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Bag Filters and Bag Housings

We manufacture a range of bag filters and complimentary housings to suit a wide range of process applications.

Typical applications include:

- **Food and Beverage**
  Process water, polishing lines and clarification.
- **General Industrial and Process Water Prefiltration**
  Particulate removal prior to reverse osmosis polishing.
- **Fine Chemicals (polypropylene housings)**
  For the clarification and sterilization of a wide range of process chemicals.
- **Coatings**
  Coating lines, solvents, inks and dyes.

GIANT Filter Bags

Polypropylene and Polyester

Our GIANT bag filters have a unique seal ring that ensures the most efficient means of bag filtration. All bags are 100% polypropylene or polyester with plastisol (PVC) seal ring and are available in micron ratings from 1 to 200.

These filter bag filters are designed to fit Porvair's exclusive line of 10" and 20" plastic filter housings.

Polyester bags are recommended for hot water applications applications to 180°F (82°C) when used in conjunction with Porvair's Nylon bag housings.

These are available in the compact 10" length – very adaptable to side stream testing applications – and the more versatile 20" double length.

The maximum operating temperatures of these polypropylene and polyester bags are 140°F (60°C) and 180°F (82°C), respectively. When using these polypropylene bags in our GIANT talc polypropylene, styrene acrylonitrile (SAN) and/or natural polypropylene housings, the maximum operating temperature should not exceed 125°F (52°C).

Features and Benefits

- Unique Plastisol seal ring designed to eliminate process bypass.
- These filter bags offer high solids collection with low pressure drop which reduces operating costs.
- When used with Porvair's bag housings, the systems offer a compact, cost effective lightweight alternatives to metal bag housing systems.

Typical Applications

GIANT bag filters are suitable for the filtration of a wide range of process liquids.

Typical applications include:

- **Food and Beverage**
  Process water, polishing lines and clarification.
- General Industrial and Process Water Prefiltration
  Particulate removal prior to reverse osmosis polishing.
- **Fine Chemicals (polypropylene housings)**
  For the clarification and sterilization of a wide range of process chemicals.
- **Coatings**
  Coating lines, solvents, inks and dyes.

For other size bag filters, please contact a member of the sales team.

GIANT Bag Pressure Drop (20" bags at 40gpm) **Vs Viscosity**

Viscosity	1M	5M	10M	25M	50M	100M	200M
1	0.1	0.1	0.1				
5	0.4	0.2	0.1	0.1	0.1		
10	0.7	0.3	0.2	0.1	0.1		
20	1.3	0.7	0.4	0.3	0.2	0.1	
30	2.1	0.9	0.6	0.3	0.3	0.1	0.1
40	2.8	1.1	0.8	0.5	0.3	0.1	0.1
60	3.2	1.7	1.1	0.6	0.5	0.2	0.2
80	3.9	2.1	1.5	0.9	0.6	0.3	0.3
100	5.5	2.8	1.9	1.1	0.9	0.4	0.3
200	10.7	5.5	3.7	2.2	1.7	0.8	0.6
400	19.3	10.0	6.3	3.9	3.5	1.6	1.0
600	24.0	13.3	8.7	4.8	4.5	2.4	1.3
1000		17.3	12.0	7.3	6.7	3.2	1.9
1500		20.7	13.3	8.7	8.0	4.2	2.1
2000			20.0	12.0	11.3	5.9	3.0
4000				16.0	14.7	6.7	4.2
6000				24.0	22.7	13.3	6.1
8000						18.7	9.3
10,000						22.7	12.7

Ordering Guide

Product Number	Material		Micron Rating	Max. Flow Rate GPM (LPM)
	Polypropylene	Polyester		
BAG 1-10	052673PP	052673PE	1	40 (152)
BAG 5-10	052674PP	052674PE	5	40 (152)
BAG 10-10	052675PP	052675PE	10	40 (152)
BAG 25-10	052676PP	052676PE	25	40 (152)
BAG 50-10	052677PP	052677PE	50	40 (152)
BAG 100-10	052678PP	052678PE	100	40 (152)
BAG 200-10	052679PP	052679PE	200	40 (152)
20" Bags to fit 20" housings with bag adaptor				
BAG 1-20	052680PP	052680PE	1	50 (190)
BAG 5-20	052681PP	052681PE	5	50 (190)
BAG 10-20	052682PP	052682PE	10	50 (190)
BAG 25-20	052683PP	052683PE	25	50 (190)
BAG 50-20	052684PP	052684PE	50	50 (190)
BAG 100-20	052685PP	052685PE	100	50 (190)
BAG 200-20	052686PP	052686PE	200	50 (190)

PFG790/Dec2022

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porvair filtration group

GIANT Series

Bag Filter Housings

This cost-effective range of lightweight molded plastic bag housings are supplied in a variety of options:

- Clear styrene bowls,
- Corrosion resistant blue polypropylene,
- Natural polypropylene (for high purity water)
- Glass reinforced Nylon materials for high temperature applications.

Ideal for low flow and operating pressures up to 100psi (6.9bar), these housings feature our unique dual thread connections that accommodate either 1" or 1-1/2" pipe sizes.

Available in either 10" or 20" housings, all units are supplied with a pressure gauge and filter wrench. Polypropylene housings include a tapped bottom drain with plug and drain valve.

Filter bags are available in both polypropylene and polyester and feature our unique positive seal to minimize liquid bypass.

Typical Applications

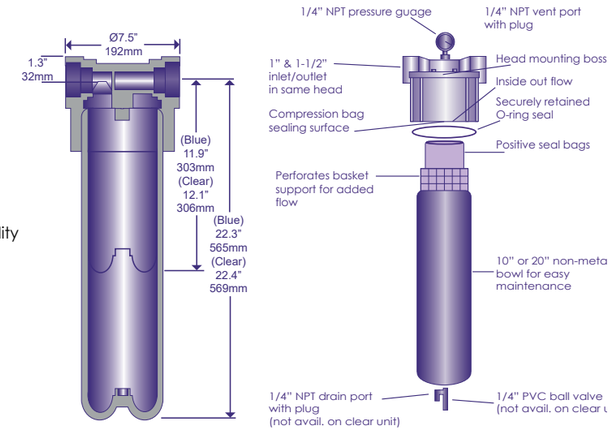
GIANT Series bag filter housings are suitable for the filtration of a wide range of process liquids.

Typical applications include:

- Food and Beverage
  Process water, polishing lines and clarification.
- General Industrial and Process Water Prefiltration
  Particulate removal prior to reverse osmosis polishing.
- Fine Chemicals (polypropylene housings)
  For the clarification of a wide range of process chemicals.
- **Coatings**
  Coating lines, solvents, inks and dyes.

Features and Benefits

- **High-Efficiency Design**
  Head and sump threads incorporate our positive stop feature to prevent overtightening.
  O-ring is securely retained in groove at top of bowl so that it stays in place even during bag replacement.
- **Fully Compliant**
  Full testing to industry standards of the Water Quality Association for burst pressure, water tightness and fatigue resistance.
  Polypropylene and clear housing models manufactured from FDA grade materials for potable water.
- **Cost effective**
  Economical alternative to bulky, heavy metal housings.



Variants

GIANT Talc Polypropylene and Clear Styrene Bag Housings

GIANT bag housings offer the following unique features:

- Available with exclusive 10" and 20" clear styrene acrylonitrile (SAN) bowl or our 10" and 20" blue talc reinforced polypropylene bowl.
- Both 1⁄2" and 1" NPT connections are included in every GIANT filter head.
  (Also available with British pipe threads).
- Mounting bosses in head for available bracket.
- Talc unit comes complete with pressure gauge, basket support, polypropylene drain plugs, wrench and ball valve to drain sump.
- Clear unit comes complete with pressure gauge, basket support, polypropylene plugs and wrench. Drain is not provided with clear bowls(CGB10, CGB20). Do not tap drain in clear bowl.

General Service Parameters

GIANT Clear Bowl with Talc Reinforced Head - CGB10 and CGB20. This unique c l e a r vessel is rugged enough to handle cold water applications to 100 psi. It is a perfect solution for pilot plant and start-up processes where direct visual observation is desirable.

Pressure Drop Vs Flow Rate

10" GIANT Flow Pressure Drop		20" GIANT Flow Pressure Drop	
GPM	PSI	GPM	PSI
5	0.6	5	0.4
10	0.4	10	0.6
15	1.2	15	0.9
20	1.8	20	1.5
25	2.5	25	2.4
30	3.5	30	3.4
35	4.7	35	4.7
40	5.9	40	6.1
		45	7.8

GIANT Pure Polypropylene Bag Housings

Our GIANT pure polypropylene bag housings are ideal for use in all industries where filtered liquids must remain free of contamination.

These housings are especially essential in the semi-conductor and chemical processing industries. They are constructed 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.

Features include:

- 100% polypropylene construction
- Smooth contact surfaces to prevent bacteria and dirt buildup
- Utilizes a non-lubricated silicone O-ring as standard
- Comes complete with pressure gauge, drain plugs, basket support, ball valve and wrench

Ordering Guide * *SAN Styrene Acrylonitrile*

Part number	Model No.	Materials	Nominal Length	Max Operating Temperature	Max Operating Pressure
052639	CGB10	White polypropylene head, *Clear SAN bowl	10"	125°F (52°C)	100psi (6.9bar)
052640	CGB20	White polypropylene head, *Clear SAN bowl	20"	125°F (52°C)	100psi (6.9bar)
052637	BGBD10	White polypropylene head, Blue polypropylene Bowl	10"	125°F (52°C)	100psi (6.9bar)
052638	BGBD20	White polypropylene head, blue polypropylene Bowl	20"	125°F (52°C)	100psi (6.9bar)
052651	NPGBD10	Natural polypropylene head and bowl	10"	125°F (52°C)	100psi (6.9bar)
052652	NPGBD20	Natural polypropylene head and bowl	20"	125°F (52°C)	100psi (6.9bar)
		High Temperature Bag Housings			
053019	HTGB10	Reinforced Nylon head and bowl	10"	180°F (82°C)	100psi (6.9bar)
053020	HTGB20	Reinforced Nylon head and bowl	20"	180°F (82°C)	100psi (6.9bar)

PFG789 / Rev 2 Nov21

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Compressed Air Filters

We manufacture a range of products for the filtration of compressed air and steam.

This range includes sterile air filtration and covers many industrial processes for the removal of particulates from compressed gas and air streams.

Manufactured using the best a materials to the highest standards, our Compfil™ range of compressed air filters provides a comprehensive solution for your compressed air and culinary steam filtration needs.

porvair filtration group

Compfil™DF

Compressed Air Depth Filter for Sterile Process Air and Gases

The Compfil™ DF filter is a wound depth filter or pleated depth filter, with stainless steel end caps, inner and outer guard. Consisting of a three 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.

Ordering Information

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction		Connection	
DF	0310	P	Pleated depth	U	Plug Connections
	0410	C	Cylindrical / wound		
	0420				
	0520				
	0525				
	0725				
	0730				
	1030				
	0530				
	2030				
	3030				
	3050				

For any non-standard connections please enquire with our Sales Team.

Typical Applications

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

Features and Benefits

- 100 sterilisation cycles guaranteed
- 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
- 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: 1.4301/304.	Stainless steel
Outer core: 1.4301/304.	Stainless steel
End caps: 1.4301/304.	Stainless steel
Bonding materials:	Silicone
O-rings:	Silicone (standard), Buna N, EPDM, Viton®

Filtration Surface

494cm² (5,317ft²) per 10" element

Maximum Differential Pressure

5bar (73psi), independent of operation pressure of flow direction

Dimensions

Element size	A mm (in)	B mm (in)	C Ø mm (in)	D Ø mm (in)	CF Flange
03/10	76 (3)	12 (0.47)	19 (3/4)	42 (1.65)	0,12
04/10	104 (4.09)	12 (0.47)	19 (3/4)	42 (1.65)	0,17
04/20	104 (4.09)	14 (0.55)	25.1 (1)	52 (2.05)	0.19
05/20	104 (4.09)	14 (0.55)	25.1 (1)	62 (2.44)	0,19
05/25	128 (5.03)	14 (0.55)	25.1 (1)	62 (2.44)	0,32
07/25	180 (7.09)	16 (0.63)	25.1 (1)	86 (3.39)	0,47
05/30	128 (5.03)	16 (0.63)	50.8 (2)	86 (3.39)	0,46
07/30	180 (7.09)	16 (0.63)	50.8 (2)	86 (3.39)	0,68
10/30	254 (10)	16 (0.63)	50.8 (2)	86 (3.39)	1,00
15/30	381 (15)	16 (0.63)	50.8 (2)	86 (3.39)	1,55
20/30	508 (20)	16 (0.63)	50.8 (2)	86 (3.39)	2,10
30/30	762 (30)	16 (0.63)	50.8 (2)	86 (3.39)	3,28
30/50	762 (30)	16 (0.63)	50.8 (2)	140 (5.51)	5,89

Operating Temperature

-20 to 200 °C (-4 to 392°F)

Sterilisation

DF filter elements are guaranteed for 200 sterilisation cycles without loss of integrity.

In-line sterilisation with slow speed saturated steam:
- max. 121°C (250°F) for 30 minutes
- max. 131°C (268°F) for 20 minute
- max. 141°C (286°F) for 10 minutes

Autoclave:
- 125°C (257°F) for 30 minutes

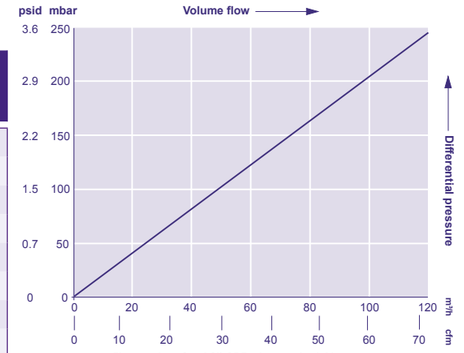
Bacterial Retention

LRV > 7/cm² (1.09in²) for T1 Coliform

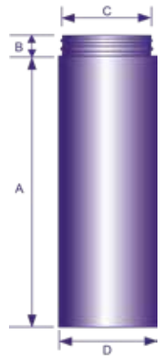
Absolute Retention Rate

99.99998 % related to 0.01µm

Flow rates



Flow rate of a 10" SRF element at 1bar.



PFG749b/Rev2:June 2021

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porvair filtration group

Compfil™AC

Activated Carbon Filter

Compfil™ AC absolute-rated 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.

Ordering Information

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction		Connection	
AC	0310	P	Pleated	U	Plug Connections
	0410	C	Cylindrical		
	0420				
	0520				
	0525				
	0725				
	0730				
	1030				
	1530				
	2030				
	3030				
	3050				

For any non-standard connections please enquire with our Sales Team.

Typical Applications

- Chemical and petrochemical
- Pharmaceutical
- Breathing air
- Prefiltration of sterile filters
- Filling machines
- Food and beverage
- Packing machines
- Industrial process

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

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

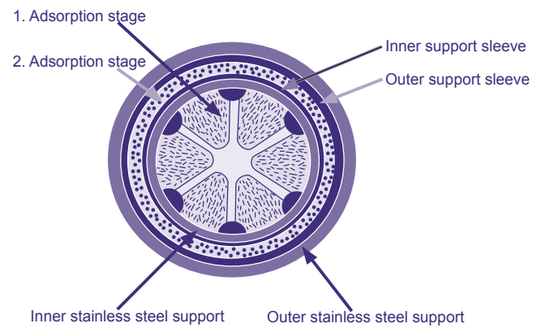
Residual oil content < 0,01 mg/m³,
e.g. by sub-nanofilter IA-S

Initial differential pressure at nominal flow:

0.07bar (1.02psi)

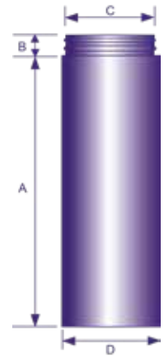
Adsorption efficiency of AC:	
Ethane	Slight
Toluene	Very good
Acetic acid	Very good
Methanol	Good
Acetone	Good
Isopropyl ether	Very good
Methyl acetate	Good
Sulphuric acid	Very good
Hydrogen sulfide	Poor
Chlorine	Good
Freon	Poor
Ammonia	Poor
Citrus fruits	Very good
Perfumes	Very good

Adsorption filter (oil free / odourless)



Dimensions

Element size	A mm (in)	B mm (in)	C Ø mm (in)	D Ø mm (in)	CF Flange
03/10	76 (3)	12 (0.47)	19 (3/4)	42 (1.65)	0,12
04/10	104 (4.09)	12 (0.47)	19 (3/4)	42 (1.65)	0,17
04/20	104 (4.09)	14 (0.55)	25.1 (1)	52 (2.05)	0.19
05/20	104 (4.09)	14 (0.55)	25.1 (1)	62 (2.44)	0,19
05/25	128 (5.03)	14 (0.55)	25.1 (1)	62 (2.44)	0,32
07/25	180 (7.09)	16 (0.63)	25.1 (1)	86 (3.39)	0,47
05/30	128 (5.03)	16 (0.63)	50.8 (2)	86 (3.39)	0,46
07/30	180 (7.09)	16 (0.63)	50.8 (2)	86 (3.39)	0,68
10/30	254 (10)	16 (0.63)	50.8 (2)	86 (3.39)	1,00
15/30	381 (15)	16 (0.63)	50.8 (2)	86 (3.39)	1,55
20/30	508 (20)	16 (0.63)	50.8 (2)	86 (3.39)	2,10
30/30	762 (30)	16 (0.63)	50.8 (2)	86 (3.39)	3,28
30/50	762 (30)	16 (0.63)	50.8 (2)	140 (5.51)	5,89



PFG749c/Rev5:Aug23

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porvair
filtration group

Compfil™IA

High Performance Industrial Air Filters

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 (316/316L)
- 70% less energy costs

Ordering Information

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction		Connection	
IAF	0310	P	Pleated	U	Plug Connections
IAM	0410	C	Cylindrical		
IAS	0420				
	0520				
	0525				
	0725				
	0730				
	1030				
	0530				
	2030				
	3030				
	3050				

For any non-standard connections please enquire with our Sales Team.

Specifications

Materials of Manufacture

Filter media:	Binder-free nanofibres
Support sleeves inner/outer: 1.4301/304.	Stainless steel
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

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

Type	Residual oil content at 3 mg/m³	Residual oil content at 10 mg/m³	Oil retention rate acc. to ISO 12500-1
IA-F	<0.1 ppm	0,2 ppm	99.6%
IA-M	<0.03 ppm	0,03 ppm	99.7%
IA-S	<0.01 ppm	0,02 ppm	99.8%

Dimensions

Element size	A mm (in)	B mm (in)	C Ø mm (in)	D Ø mm (in)	CF Flange
03/10	76 (3)	12 (0.47)	19 (3/4)	42 (1.65)	0,12
04/10	104 (4.09)	12 (0.47)	19 (3/4)	42 (1.65)	0,17
04/20	104 (4.09)	14 (0.55)	25.1 (1)	52 (2.05)	0.19
05/20	104 (4.09)	14 (0.55)	25.1 (1)	62 (2.44)	0,19
05/25	128 (5.03)	14 (0.55)	25.1 (1)	62 (2.44)	0,32
07/25	180 (7.09)	16 (0.63)	25.1 (1)	86 (3.39)	0,47
05/30	128 (5.03)	16 (0.63)	50.8 (2)	86 (3.39)	0,46
07/30	180 (7.09)	16 (0.63)	50.8 (2)	86 (3.39)	0,68
10/30	254 (10)	16 (0.63)	50.8 (2)	86 (3.39)	1,00
15/30	381 (15)	16 (0.63)	50.8 (2)	86 (3.39)	1,55
20/30	508 (20)	16 (0.63)	50.8 (2)	86 (3.39)	2,10
30/30	762 (30)	16 (0.63)	50.8 (2)	86 (3.39)	3,28
30/50	762 (30)	16 (0.63)	50.8 (2)	140 (5.51)	5,89

Operating Temperature

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

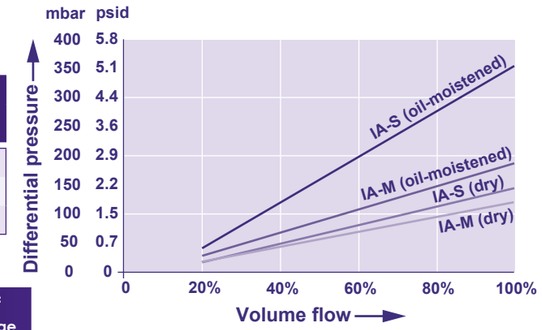
Start-up Differential Pressure

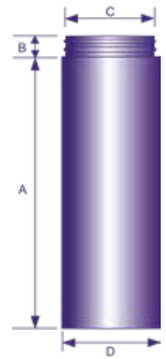
IA-F: 0.04bar (0.58psi)
IA-M: 0.08bar (1.16psi)
IA-S: 0.09bar (1.31psi)

Retention rate at a particle size of 0,01µm (ISO 8573-1)

IA-F: 99,999%
IA-M: 99,99998%
IA-S: 99,99999%

Flow Rates





Element	Correction factor
02/05	0.04
03/05	0.08
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	3.28
30/50	5.89

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porvair filtration group

Compfil™ SF

Sintered Steel Sterile Filter for Gases, Liquids and Steam

The Compfil™ SF filter is designed for removal of particles from gases, liquids and steam. The SF consists of a re-generable isostatically pressed filter cylinder made from sintered stainless steel. The retention rate ranges from 1µm to 25µm.

Ordering Information

Product Code: 1 2 3 4

Compfil™ type	Element size	Connection	Micron rating
SF	0310	U Plug Connections	01
	0410		05
	0420		25
	0520		
	0525		
	0725		
	0730		
	1030		
	1530		
	2030		
	3030		
	3050		

For any non-standard connections please enquire with our Sales Team.

Typical Applications

- Aseptic packing
- Electronics
- Pharmaceutical
- Food and beverages
- Fermentation
- Plastics
- Breweries
- Dairy
- Chemicals

Features and Benefits

- **Filter media and end caps made of stainless steel**
  Good durability against most liquids, gases and aggressive steams. Temperature range from -20°C (-4°F) up to 210°C (410°F).
- **Retention rate of 1µm, 5µm and 25µm (98% efficiency for steam and 100% efficiency for gases)**
  Exactly defined particle retention rate at given pore size.
- **Sintered stainless steel filter medium with a porosity level of more than 50%**
  High dirt holding capacity, good flow rate at low differential pressure.
- **Regenerable with ultrasonic bath**
  Filtration costs reduced to a minimum, in particluar for high dirt load.
- **Stainless steel sintering technology**
  No use of additives or other chemical binders needed.
- **Available in 13 sizes.**

Specifications

Materials of Manufacture

Filter media	Borosilicate
Outer core	SS 1.4301
Inner core	SS 1.4301
Inner layer	Polyester
End caps	SS 1.4301
Bonding material	Silicone
Seals	EPM as standard, FEP(Fluoraz) on request.

Bacterial retention

LRV > 7/cm² viruses and phages

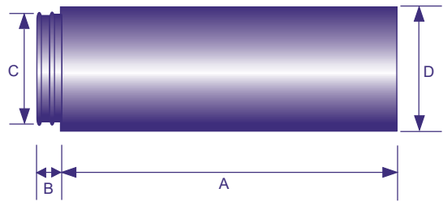
Temperature range

-20°C (-4°F) up to 200°C (392°F).

Filtration surface

494 cm² per 10“ Element (10/30) (250 mm)

Dimensions



Sterilisation

In-line sterilisation with slow speed saturated steam:
- max. 121°C (250°F) for 30 minutes
- max. 131°C (277°F) for 20 minutes
- max. 141°C (286°F) for 10 minutes

Autoclave: 125°C (257°F) for 30 minutes
WD filter elements are guaranteed for 200 sterilisation cycles without loss of integrity.

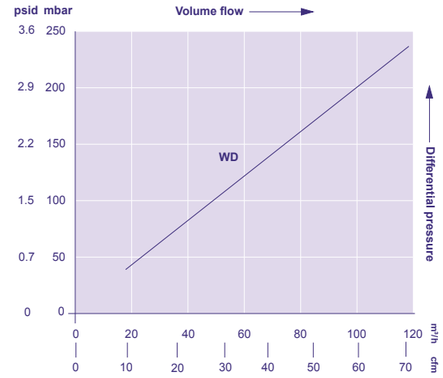
Absolute retention rate

99.99998% related to 0.2µm

Max. differential pressure

5bar (73psi), independent of operating pressure of flow direction

Flow rate of a 10’’ WD element at 8 bar absolute



Element size (inch)	A mm (in)	B mm (in)	C Ø mm (in)	DØ mm (in)	Correction factor
03/10	76mm (3”)	12mm (0.47”)	19mm (0.75”)	42mm (1.6”)	0,12
04/10	104mm (4”)	12mm (0.47”)	19mm (0.75”)	42mm (1.6”)	0,17
04/20	104mm (4”)	14mm (0.55”)	25mm (1”)	52mm (2.0”)	0,19
05/20	104mm (4”)	14mm (0.55”)	25mm (1”)	52mm (2.0”)	0,19
05/25	128mm (5”)	14mm (0.55”)	25mm (1”)	62mm (2.5”)	0,32
05/30	128mm (5”)	16mm (0.62”)	51mm (2”)	86mm (3.4”)	0,46
07/25	180mm (7”)	14mm (0.55”)	25mm (1”)	62mm (2.5”)	0,47
07/30	180mm (7”)	16mm (0.62”)	51mm (2”)	86mm (3.4”)	0,68
10/30	254mm (10”)	16mm (0.62”)	51mm (2”)	86mm (3.4”)	1,00
15/30	381mm (15”)	16mm (0.62”)	51mm (2”)	86mm (3.4”)	1,55
20/30	508mm (20”)	16mm (0.62”)	51mm (2”)	86mm (3.4”)	2,10
30/30	762mm (30”)	16mm (0.62”)	51mm (2”)	86mm (3.4”)	3,28
30/50	762mm (30”)	16mm (0.62”)	51mm (2”)	140mm (5.5”)	5,89

PFG767/Rev2/Sept24

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porvair filtration group

Compfil™ PC

Sterile Depth Filter for Process Air and Gases

Compfil™ PC is a pleated depth filter with inner and outer guard and end caps made of stainless steel. Consisting of a three-dimensional borosilicate depth media, the PC achieves a void volume of 95%, ensuring a high containment capacity at high flow rates and low differential pressure. A retention rate of >99.99999995% related to 0.2µm > 99.99999995% related to 0.02µm is achieved during operation. The retention for nano-sized particles (0.003µm) is larger than 99.999999991% as verified in a DIN EN 1822 adopted test.

All components meet the FDA requirements for indirect contact with food in accordance with the CFR requirements (code of federal regulations) title 21 and EC/1935/2004 for indirect food contact use.

Ordering Information

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction	Connection
PC	0310	P Pleated depth	U Plug Connections
	0410	C Cylindrical / wound	
	0420		
	0520		
	0525		
	0725		
	0730		
	1030		
	0530		
	2030		
	3030		
	3050		

For any non-standard connections please enquire with our Sales Team.

Typical Applications

- Aseptic packing
- Biotechnology
- Fermentation
- Chemicals
- Pharmaceutical
- Food and beverage (brewery, dairies)

Features and Benefits

- **Outer guard and endcaps made of stainless steel**
  High mechanical and thermal stability, good durability against chemicals and numerous aggressive gases. Temperature range from -20°C (-4°F) up to 200°C (392°F).
- **Three-dimensional borosilicate depth filter media**
  High waste containment capacity, low differential pressure, high flow rate.
- **Biologically and chemically inert**
  No breeding ground for separated microorganism.

200 sterilisation cycles guaranteed
High economical efficiency and low filtration costs.

100% integrity tested
Guaranteed quality

- **Available in 13 sizes**
  Optimum filter size for individual application.

Specifications

Materials of Manufacture

Filter media	Borosilicate
Impregnation	PTFE
Outer core	SS 1.4301
Inner core	SS 1.4301
Inner layer	SS 1.4301
End caps	SS 1.4301
Bonding material	Silicone

Bacterial retention

LRV > 9/cm² for viruses and phages.

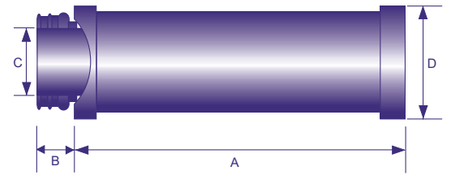
Temperature range

-20°C (-4°F) up to 200°C (392°F).

Filtration surface

8,400cm² per 10" element (10/30) (254mm).

Dimensions



Sterilisation

In-line sterilisation with slow speed saturated steam:
- max. 121°C (250°F) for 30 minutes
- max. 131°C (277°F) for 20 minutes
- max. 141°C (286°F) for 10 minutes

Autoclave: 125°C (257°F) for 30 minutes
PC filter elements are guaranteed for 200 sterilisation cycles without loss of integrity.

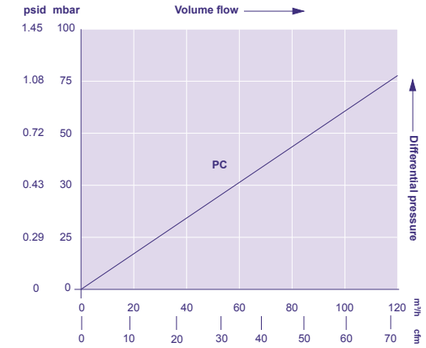
Retention rate

99.99999995% related to 0.2µm
99.99999995% related to 0.02µm
99.999999991% related to 0.003µm

Max. differential pressure

5bar (73psi), independent of operating pressure of flow direction.

Flow rate of a 10" PC element at 8 bar abs



Element size (inch)	A mm (in)	B mm (in)	C Ø mm (in)	DØ mm (in)	Correction factor
03/10	76mm (3")	12mm (0.47")	19mm (0.75")	42mm (1.6")	0,12
04/10	104mm (4")	12mm (0.47")	19mm (0.75")	42mm (1.6")	0,17
04/20	104mm (4")	14mm (0.55")	25mm (1")	52mm (2.0")	0,19
05/20	104mm (4")	14mm (0.55")	25mm (1")	52mm (2.0")	0,19
05/25	128mm (5")	14mm (0.55")	25mm (1")	62mm (2.5")	0,32
05/30	128mm (5")	16mm (0.62")	51mm (2")	86mm (3.4")	0,46
07/25	180mm (7")	14mm (0.55")	25mm (1")	62mm (2.5")	0,47
07/30	180mm (7")	16mm (0.62")	51mm (2")	86mm (3.4")	0,68
10/30	254mm (10")	16mm (0.62")	51mm (2")	86mm (3.4")	1,00
15/30	381mm (15")	16mm (0.62")	51mm (2")	86mm (3.4")	1,55
20/30	508mm (20")	16mm (0.62")	51mm (2")	86mm (3.4")	2,10
30/30	762mm (30")	16mm (0.62")	51mm (2")	86mm (3.4")	3,28
30/50	762mm (30")	16mm (0.62")	51mm (2")	140mm (5.5")	5,89

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porvair filtration group

Compfil™ PF

Pleated Steel Particle Filter for Gases, Liquids and Steam

The Compfil™ PF filter consists of a regenerable, pleated filter tube made of stainless steel. Due to its robust construction, the Compfil™ SF is designed for maximum differential pressures up to 10 bar. It can be used in a temperature range from -20-210°C without any problems. From a temperature of 180°C, however, special O-rings are required.

The separation efficiency ranges from 1-25µm in order to reliably retain impurities. The improved steam quality not only extends the service life of the filters to be sterilized, but also increases the cost effectiveness of the entire process. All filter elements have been manufactured without the use of binders or other chemical additives.

Ordering Information

Product Code: 1 2 3 4

Compfil™ type	Element size
PF	0310
	0410
	0420
	0520
	0525
	0530
	0725
	0730
	1030
	1530
	2030
	3030
	1050
	3050

Connection	
U	Plug Connections

For any non-standard connections please enquire with our Sales Team.

Micron rating
01
05
25

Typical Applications

- Aseptic packing
- Plastics
- Electronics
- Dairy
- Pharmaceutical
- Breweries
- Food and beverages
- Chemicals
- Fermentation

Features and Benefits

- **Filter media and end caps made of stainless steel**
  Good durability against most liquids, gases and aggressive steams. Temperature range from -20°C (-4°F) up to 210°C (410°F).
- **Retention rate of 1, 5 and 25µm (98% efficiency for steam and 100% efficiency for gases)**
  Exactly defined particle retention rate at given pore size.
- **Sintered stainless steel filter medium with a porosity level of more than 50%**
  High dirt holding capacity, good flow rate at low differential pressure.
- **Regenerable with ultrasound and backwashing**
  Filtration costs reduced to a minimum, in particluar for high dirt load.
- **Stainless steel sintering technology**
  No use of additives or other chemical binders needed.

Specifications

Materials of Manufacture

Filter media	SS 1.4404/316/316L
Support coats	SS 1.4404/316/316L
End caps	SS 1.4404/316/316L
O-Rings	EPM as standard. Silicone, Buna N, Viton®, FEP (Fluoraz) on request

Filtration surface

0,18 m² per 10" element (10/30) (250 mm)

Temperature range

-20°C (-4°F) to 210°C (410°F).
> 180°C only with special O-rings

Conversion factor for steam temperature

Steam termperature °C	110,121,140,160
Steam temperature °F	212, 250, 285, 320
Conversion factor	0,5,1,2,3

Dimensions

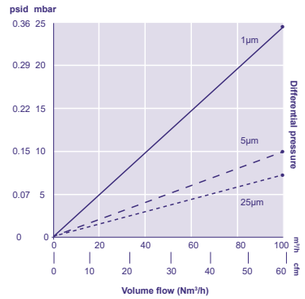
Absolute separation rates

1-25µm

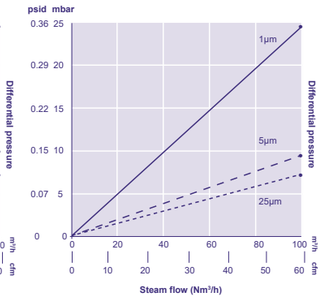
Max. differential pressure

10bar (145psi)

Flow rate of a 10" PF Air, 20°C, 1bar



Flow rate of a 10"PF Steam, 121°C, 2bar



Dimensions

Element size (inch)	A mm (in)	B mm (in)	C Ø mm (in)	DØ mm (in)	Correction factor
03/10	76mm (3")	12mm (0.47")	19mm (0.75")	42mm (1.6")	0,12
04/10	104mm (4")	12mm (0.47")	19mm (0.75")	42mm (1.6")	0,17
04/20	104mm (4")	14mm (0.55")	25mm (1")	52mm (2.0")	0,19
05/20	104mm (4")	14mm (0.55")	25mm (1")	52mm (2.0")	0,19
05/25	128mm (5")	14mm (0.55")	25mm (1")	62mm (2.5")	0,32
05/30	128mm (5")	16mm (0.62")	51mm (2")	86mm (3.4")	0,46
07/25	180mm (7")	14mm (0.55")	25mm (1")	62mm (2.5")	0,47
07/30	180mm (7")	16mm (0.62")	51mm (2")	86mm (3.4")	0,68
10/30	254mm (10")	16mm (0.62")	51mm (2")	86mm (3.4")	1,00
15/30	381mm (15")	16mm (0.62")	51mm (2")	86mm (3.4")	1,55
20/30	508mm (20")	16mm (0.62")	51mm (2")	86mm (3.4")	2,10
30/30	762mm (30")	16mm (0.62")	51mm (2")	86mm (3.4")	3,28
10/50	254mm (10")	16mm (0.62")	76mm (3")	86mm (3.4")	1,45
30/50	762mm (30")	16mm (0.62")	76mm (3")	140mm (5.5")	5,89

PFG788/Rev2:Feb2023

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porvair
filtration group

Compfil™ SH

for Sterile Air and Gas Filtration

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.

Typical 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 Nm^3/h (38 SCFM) to 23,040 Nm^3/h (14,554 SCFM) related to 7barg (1015 psig).
- **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.

Ordering Information

For ordering information please contact a member of the sales team.

Specifications

Materials of Manufacture

Filter housing:	Stainless steel 1.4301 (304) or 1.4404 (316/316L)
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

Welded ends, other connections and larger housings are available on request.

Maximum Operating Pressure

0006 - 0192: 16barg (232psig)
0288: 12barg (174psig)
0432 - 1920: 10barg (145psig)

Maximum Operating Temperature

200°C (392°F)

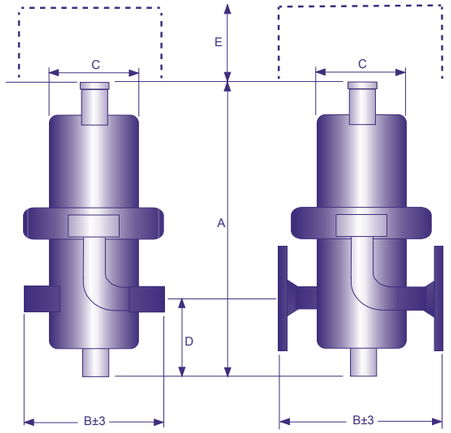
Surface Finish

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 EN1092-1



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Specifications

SH Part Code*	Size	Volume flow Nm3/hr at 7 barg operating pressure (SCFM at 101.5psig)		Connections						Filter element	
		Nom.	Max.	AS	DN	NP	BS	DT	AF	Size	Qty
SH-XX-0310	03/10	60 (38)	90 (57)	17.2 X 1.6	13 X 1.5	NPT 1/4"	G 1/4	DN 10	1/2	03/10	1
SH-XX-0410	04/10	90 (57)	120 (76)	17.2 X 1.6	13 X 1.5	NPT 3/8"	G 3/8	DN 10	1/2	04/10	1
SH-XX-0420	04/20	120 (76)	180 (114)	21.3 X 1.6	19 X 1.5	NPT 1/2"	G 1/2	DN 15	1/2	04/20	1
SH-XX-0520	05/20	180 (114)	270 (171)	26.9 X 1.6	23 X 1.5	NPT 3/4"	G 3/4	DN 20	3/4	05/20	1
SH-XX-0525	05/25	270 (171)	360 (227)	33.7 X 2	29 X 1.5	NPT 1"	G1	DN 25	1	05/25	1
SH-XX-0725	07/25	360 (227)	480 (303)	42.4 X 2	35 X 1.5	NPT 1 1/4"	G 1 1/4	DN 32	1 1/4	07/25	1
SH-XX-0730	07/30	480 (303)	720 (455)	48.3 X 2	41 X 1.5	NPT 1 1/2"	G 1 1/2	DN 40	1 1/2	07/30	1
SH-XX-1030	10/30	720 (455)	1,080 (682)	60.3 X 2	53 X 1.5	NPT 2"	G2	DN 50	2	10/30	1
SH-XX-1530	15/30	1,080 (682)	1,440 (910)	60.3 X 3	53 X 1.5	NPT 2"	G2	DN 50	2	15/30	1
SH-XX-2030	20/30	1,440 (910)	1,920 (1,213)	76.1 X 2	70 X 2.0	NPT 2 1/2"	G 2 1/2	DN 65	2 1/2	20/30	1
SH-XX-3030	30/30	1,920 (1,213)	2,880 (1,819)	88.9 X 2	85 X 2.0	NPT 3"	G3	DN 80	3	30/30	1
SH-XX-3050	30/50	2,880 (1,819)	4,320 (2,729)	88.9 X 3	85 X 2.0	NPT 3"	G3	DN 80	3	30/50	1
SH-XX-2030B	20/30	4,320 (2,729)	5,760 (3,639)					DN 100	4	20/30	3
SH-XX-3030B	30/30	5,760 (3,639)	7,680 (4,851)					DN 100	4	30/30	3
SH-XX-3030C	30/30	7,680 (4,851)	11,520 (7,277)					DN 150	6	30/30	4
SH-XX-3030D	30/30	11,520 (7,277)	15,360 (9,703)					DN 150	6	30/30	6
SH-XX-3030E	30/30	15,360 (9,703)	19,200 (12,029)					DN 200	8	30/30	8
SH-XX-3030F	30/30	19,200 (12,129)	23,040 (14,554)					DN 200	8	30/30	10

* To create part code, please add the two letters for the corresponding connection you desire.
Please note: that connections sizes correlate to the bowl size in order to accommodate specific volume flows.
Anything that isn't standard will come under a special/non-standard housing.
AS – ASA Threaded Connections
DN – DIN Threaded Connections
NP – NPT Threaded Connections
BP – BSP Threaded Connections
DT – EN1092-1 PNX Flanged Connections
AF – ANSI B16.5 Class 150"

Conversion table and note

Operating pressure (bar)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Conversion factor	0.25	0.36	0.50	0.60	0.75	0.90	1.00	1.10	1.20	1.40	1.50	1.60	1.75	1.90	2.00	2.10

Multiply volume shown by the conversion factor to obtain the volume flow (Nm^3/hr) at other operating pressures.

Weight and Dimensions

Element Size	Dimensions in mm (in)						Weight in kg (lb)
	A	B (Threaded)	B (DIN2633)	C	D	E	
SH-XX-0310	215 (8.46)	105 (4.13)	180 (7.1)	70 (2.76)	55 (2.16)	90 (3.54)	1.7 (3.7)
SH-XX-0410	243 (9.57)	105 (4.13)	180 (7.1)	70 (2.76)	55 (2.16)	120 (4.72)	1.9 (4.2)
SH-XX-0420	243 (9.57)	108 (4.25)	180 (7.1)	70 (2.76)	55 (2.16)	120 (4.72)	1.9 (4.2)
SH-XX-0520	266 (10.5)	125 (4.92)	202 (7.95)	70 (2.76)	55 (2.16)	150 (5.90)	2.0 (4.4)
SH-XX-0525	293 (11.5)	125 (4.92)	212 (8.34)	85 (3.35)	74 (2.91)	150 (5.90)	2.6 (5.7)
SH-XX-0725	344 (13.5)	140 (5.51)	220 (8.66)	85 (3.35)	74 (2.91)	200 (7.87)	3.0 (6.6)
SH-XX-0730	386 (15.2)	170 (6.69)	254 (10)	104 (4.09)	94 (3.70)	200 (7.87)	4.3 (9.5)
SH-XX-1030	460 (18.1)	170 (6.69)	260 (10.24)	104 (4.09)	94 (3.70)	280 (11.0)	4.8 (10.6)
SH-XX-1530	587 (23.1)	170 (6.69)	260 (10.24)	104 (4.09)	94 (3.70)	450 (17.7)	5.3 (11.7)
SH-XX-2030	732 (28.8)	216 (8.50)	290 (11.42)	129 (5.08)	106 (4.17)	580 (22.8)	9 (19.8)
SH-XX-3030	987 (38.9)	216 (8.50)	300 (11.81)	129 (5.08)	106 (4.17)	850 (33.5)	10.8 (23.8)
SH-XX-3050	1,026 (40.4)	240 (9.45)	340 (13.39)	154 (6.06)	119 (4.68)	850 (33.5)	16.2 (35.7)
SH-XX-2030B	1,090 (42.9)	410 (16.1)	410 (16.14)	219 (8.62)	200 (7.87)	580 (22.8)	43 (94.8)
SH-XX-3030B	1,350 (53.1)	410 (16.1)	410 (16.14)	219 (8.62)	200 (7.87)	850 (33.5)	44 (97)
SH-XX-3030C	1,410 (55.5)	480 (18.9)	480 (18.9)	273 (10.7)	240 (9.45)	850 (33.5)	70 (154.3)
SH-XX-3030D	1,460 (57.5)	540 (21.3)	540 (21.26)	324 (12.8)	250 (9.84)	850 (33.5)	80 (176.4)
SH-XX-3030E	1,600 (63.0)	660 (26.0)	660 (25.98)	406 (16.0)	300 (11.8)	850 (33.5)	135 (297.6)
SH-XX-3030F	1,600 (63.0)	660 (26.0)	660 (25.98)	406 (16.0)	300 (11.8)	850 (33.5)	135 (297.6)

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Compfil™ AH

High Performance Industrial Filter Housing

Compfil™ 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 optimized filter housing**
  Push and turn technology ensures easy exchange of the filter elements, whilst the optimized 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 is transferred.
- **Acoustic alarm signal**
  Provides maximum safety for element maintenance.
- **Float drain**
  Integral float helps prevent blockages, for reduced maintenance.

Ordering Information

For ordering information please contact a member of the sales team.

Materials of Manufacture

Material housing:	Aluminium
Surface finish:	Epoxy resin
Sealing:	Perbunan®
Screw locking ring:	Aluminium
Energy cost monitor:	Plastic

Maxiumum Operating Pressure

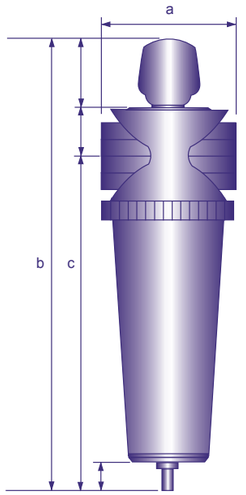
6bar (232psi)

Operating Temperature

120°C (48°F)

Dimensions

Type	Volume flow		G/DN	Dimensions mm (in)			Filter element	
	Nom. m³/h (ft³/h)	Max. m³/h (ft³/h)		a	b	c	Size	Qty.
0002	20 (706)	40 (1,413)	G 1/4	95 (3.74)	289 (11.38)	211 (8.3)	02/05	1
0004	40 (1,413)	60 (2,119)	G 3/8	95 (3.74)	289 (11.38)	211 (8.3)	03/05	1
0006	60 (2,119)	90 (3,178)	G 3/8	95 (3.74)	289 (11.38)	211 (8.3)	03/10	1
0009	90 (3,178)	120 (4,238)	G 1/2	95 (3.74)	317 (12.47	239 (9.4)	04/10	1
0012	120 (4,238)	180 (6,357)	G 1/2	125 (4.92)	369 (14.5)	277 (10.9)	04/20	1
0018	180 (6,357)	270 (9,535)	G 3/4	125 (4.92)	369 (14.5)	277 (10.9)	05/20	1
0027	270 (9,535)	360 (12,713)	G 1	125 (4.92)	369 (14.5)	277 (10.9)	05/25	1
0036	360 (12,713)	480 (16,951)	G 1 1/4	125 (4.92)	427 (16.8)	335 (13.2)	07/25	1
0048	480 (16,951)	720 (25,427)	G 1 1/2	175 (6.89)	509 (20)	401 (15.8)	07/30	1
0072	720 (25,427)	1,080 (38,140)	G2	175 (6.89)	509 (20)	401 (15.8)	10/30	1
0108	1,080 (38,140)	1,440 (50,853)	G2	175 (6.89)	650 (25.6)	401 (15.8)	15/30	1
0144	1,440 (50,853)	1,920 (67,804)	G 2 1/2	210 (8.27)	811 (31.9)	690 (27.2)	20/30	1
0192	1,920 (67,804)	2,880 (101,706)	G3	210 (8.27)	1,061 (41.8)	940 (37)	30/30	1
0288	2,880 (101,706)	4,320 (152,559)	G3	210 (8.27)	1,068 (42)	940 (37)	30/50	1



PFG749a/December2022

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Disposable Capsule Filters

We manufacture a range of capsule filters in sizes suitable for small to medium industrial and sanitary applications.

These filters exhibit a range of different properties and are used within many industries including pharmaceutical, water and chemical processes.

Our capsules are self-contained, ready to use, disposable devices. The filter body is constructed with natural or opaque black housing and available with a wide range of connector configurations to suit different systems.

porvair filtration group

Microcap™ I

Main System Capsule Filters

The main system filter is specifically designed for the requirement of wide and superwide format graphics printers.

The inkjet specific self contained unit is designed around an all-polypropylene construction, with no binding agents, to give low extractables and ensure 100% compatability with inkjet fluids.

Available in natural or opaque black filter housing. This filter has the flexibility of being supplied without standard connectors, allowing the user to add individual connectors or fit directly to the ink line.

Polyfil™ and Klearfil™ Filter Media

Our Polyfil™ media benefits from a high pleat construction and a large surface area which offers a high flow rate and a minimal pressure drop, with focused spectrum particle removal properties.

Our Klearfil™ media has 8 graded filtration layers allowing for wide spectrum particle removal, gel retention and a high dirt holding capacity. The deep filter pack also demonstrates minimum distortion under pressure and a long service life

Typical Applications

- Inkjet

Specifications

Filter Code
8113
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, 60µm, 90µm, 105µm.
(additional ratings are available on request).
Dimensions
Filter diameter: 70 mm (2.76")
Filter height: 52 mm (2.05")
Filter Area
500cm² (77.5in²)
Maximum Operating Pressure
6bar (87psi)
Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Ordering Information

Product Code: 8113 - Table 1 - Table 2 - Table 3 - Table 4

Table 1	Micron Ratings
0050	0.5µm
0100	1µm
0300	3µm
0500	5µm
1000	10µm
2000	20µm
4000	40µm
6000	60µm
9000	90µm
15000	150µm

Table 2	Filter Media
1	Polyfil™
5	Klearfil™

Table 3	Connectors
AA	¼" barb
CC	½" barb
DD	¼" NPT (male)
EE	⅜" NPT Female
FF	¼" QRC

Table 4	Housings
N	Non UV
C	UV Compatible

Microcap™ PR

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.

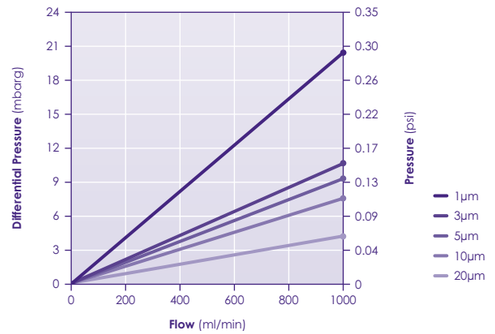
Typical Applications

- Inkjet

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, 60µm, 90µm, 105µm.
(additional ratings are available on request).
Dimensions
Filter diameter: 65mm (2.56")
Filter height: 88mm (3.46") (plus connectors)
Filter Area
500cm² (77.5in²)
Maximum Operating Pressure
6bar (87psi)
Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Flow Rate



Ordering Information

Product Code: 8089 - Table 1 - Table 2 - Table 3 - Table 4

Table 1	Micron Ratings
0050	0.5µm
0100	1µm
0300	3µm
0500	5µm
1000	10µm
2000	20µm
4000	40µm
6000	60µm
9000	90µm
15000	150µm

Table 2	Filter Media
1	Polyfil™
5	Klearfil™

Table 3	Connectors
A	6mm Barbed
D	¼ NPT
F	¼ Quick Fit
G	$^{7}/_{16}$" - 20 UNF Elbow
J	$^{7}/_{16}$" - 20 UNF
P	Luer Conical Lock
Q	Luer Conical Lock Elbow

Table 4	Housings
N	Non UV
C	UV Compatible

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porvair filtration group

Microcap™ Plus

Main System Capsule Filters

The Microcap™ + is a large capsule filter for inkjet systems with high throughput. The Microcap+™ is available in various sizes and contains up to 100% more filter media than our standard Microcap™ capsule filters, whilst still retaining a compact housing design. Suitable for use for solvent, water-based, or UV inks. Can be used as a damper to prevent pump pulsing.

Polyfil™ and Klearfil™ Filter Media

Our Polyfil™ media benefits from a high pleat construction and a large surface area which offers a high flow rate and a minimal pressure drop, with focused spectrum particle removal properties.

Our Klearfil™ media has 8 graded filtration layers allowing for wide spectrum particle removal, gel retention and a high dirt holding capacity. The deep filter pack also demonstrates minimum distortion under pressure and a long service life.

Ordering Information

Product Code: 8165- Table 1 - Table 2 - Table 3 -GG- Table 4 - Table 5

Table 1	Micron Ratings
0050	0.5µm
0100	1µm
0300	3µm
0500	5µm
1000	10µm
2000	20µm
4000	40µm
6000	60µm

Table 2	Pack Size
1	350cm²
2	430cm²
3	550cm²
4	725cm²
5	1000cm²

Table 3	Filter Media
1	Polyfil™
5	Klearfil™

Table 4	Compression Nut
1	¼" Jaco® 90°
2	6mm Jaco® 90°

Table 5	Housing
N	Natural
C	Opaque black

Typical Applications

- Inkjet

Specifications

Filter Code
8165

Materials of Manufacture
Filter media: Polypropylene
Housing material: Polypropylene

Micron Rating
0.5, 1, 3, 5, 10, 20, 40µm

Dimensions
Filter length: 95mm (3.74") (plus connectors)
Filter width: 55mm (2.17")

Filter Area
350 - 1000 cm² (54.25-155 in²)

Connectors
¼" and 6mm Jaco® 90° elbow connector

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Microprint™II

Capsule Filters

The Microprint™ II filter capsule has been specifically designed to offer maximum protection of print heads 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.

Typical Applications

- Inkjet

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
8202

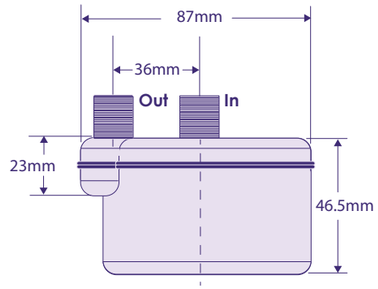
Materials of Manufacture
Filter media: Polypropylene
Housing material: Polypropylene
Housing colour: Opaque black and natural

Micron Rating
0.5µm, 1µm, 3µm, 5µm, 10µm, 20µm, 40µm and 60µm (additional ratings available on request)

Maximum Operating Pressure
<6.5bar (94psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Dimensions



Ordering Information

Product Code: 8202 - Table 1 - Table 2 - Table 3 - Table 4

Table 1	Micron Ratings
0050	0.5µm
0100	1µm
0300	3µm
0500	5µm
1000	10µm
2000	20µm
4000	40µm
6000	60µm

Table 2	Filter Media
1	Polyfil™
5	Klearfil™

Table 3	Connectors
FF	1/4" Quick Release*
JJ	7/16-20 UNF Male
DD	1/4" NPT Male
BB	1/8" Quick Release*

**EPDM Seals*

Table 4	Housings
N	Natural
C	Opaque black

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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.

Typical Applications

- Inkjet

Ordering Information

Product Code: 8131 - Table 1 - 1 - LL - Table 2

Table 1 **Micron Ratings**

0500	5µm
1000	10µm

Table 2 **Housings**

N	Natural
C	Opaque black

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
500cm^2 (77.5in^2)

Connectors
Luer / hose barb

Maximum Operating Pressure
6bar (87psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)

PFG814/June22

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Microcap™ PPP

Pharmaceutical Grade Pleated Polypropylene Capsules

Microcap™ PPP capsules are used for the pre-filtration of bulk pharmaceutical chemicals, water, buffers, solvents, alcohols and other liquids. They are also designed to protect membrane filters in filling applications for SVPs, LVPs, diagnostics, ophthalmics, biologicals and other products.

Made with polypropylene microfibre media, and designed with the optimal filtration area, these filters remove large amounts of particulate and other contaminants.

Microcap™ PPP capsules protect critical membrane filters downstream by removing 99.9% (β ratio = 1000) of contaminants at the rated pore size.

Polypropylene exhibits broad chemical compatibility, so it is particularly suited for the filtration of chemicals and solvents used in the drug making processes.

Microcap™ PPP capsules are integrity tested during manufacture and are flushed to ensure cleanliness in critical process applications.

Typical Applications

- Bulk pharmaceutical chemicals
- Buffers and other media
- LVPs and SVPs
- Biologicals
- Water
- Ophthalmics
- Diagnostics

Features and Benefits

- Protect's critical membrane filters downstream.
- Wide range of high efficiency retention ratings
- High capacity for long life.
- USP Class VI approved.
- Uses FDA compliant materials.

Ordering Information

Product Code: 7018- 1- xxx - x - xx - x - x

Micron Rating (µm)	
P10	0.10
P22	0.22
P45	0.45
P65	0.65
001	1.0
003	3.0
005	5.0
010	10
020	20
030	30
040	40
060	60
100	100

Pre-sterilised	
N	Non-sterile
S	Sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Pleated polypropylene depth media
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	Microcap™ PPP capsules are not designed for steam-in-place (SIP).

Maximum Operating Parameters

Liquid operational pressure:	5.5bar (80psi) at 20°C (68°F)
Gases operational pressure:	60psi (4.1bar) at 20°C (68°F)
Operating temperature:	43°C (110°F) at 2.1bar (30psi) in water
Reverse differential pressure:	2.7bar (40psi) at 20°C (68°F)
Recommended changeout pressure:	2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
Pleated polypropylene depth	1.1ft² (0.10m²)	2.9ft² (0.27m²)	6.24ft² (0.58m²)	12.48ft² (1.16m²)	18.72ft² (1.74m²)

Average – Filtration area varies with media thickness and porosity.

Flow Rate

The following table represents typical water flow at a one psi (69mbar) pressure differential across a single 2 inch capsule with 1.1 ft² (0.10 m²) of media with 1" sanitary ports. The liquid test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore size (µm)	0.10	0.22	0.45	0.65	1.0	3.0	5.0	10	20	30	40	60	100
GPM	0.15	0.39	0.54	0.69	0.92	1.0	1.1	1.3	1.7	>1.7	>1.7	>1.7	>1.7
LPM	0.57	1.5	2.0	2.6	3.5	3.8	4.2	4.9	6.4	>6.4	>6.4	>6.4	>6.4

PFG773/Rev4:Nov24

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Microcap™ GPP

General Pleated Depth Polypropylene Capsule Filters

Microcap™ GPP general service grade capsules are used for the removal of particulate contaminants from water, inks, dyes and speciality chemicals.

Made with polypropylene microfibre media and designed with the maximum filtration area, these filters can remove large amounts of particulate and other contaminants over a long filter life. Microcap™ GPP capsules protect critical membrane filters downstream by removing large amounts of particulates and other contaminants.

Polypropylene depth media filters perform the critical upstream clarification of products. When used in final filtration systems, the filters protect the high-value membrane filters used downstream. Polypropylene depth media capsule filters are rinsed during production to remove manufacturing debris from the capsules.

Typical Applications

- Chemicals
- Acids and bases
- Cosmetics
- Process water
- Inks and dyes
- Air and gases

Features and Benefits

- Protect critical membrane filters downstream.
- Wide range of high efficiency retention ratings.
- High capacity for long life.
- Non-fibre releasing.
- Uses FDA compliant materials.

Ordering Information

Product Code: 7018- 2 - xxx - x - xx - x x

Micron Rating (µm)	
P10	0.10
P22	0.22
P45	0.45
P65	0.65
001	1.0
003	3.0
005	5.0
010	10
020	20
030	30
040	40
060	60
100	100

Pre-sterilised	
N	Non-sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Pleated polypropylene depth media
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	Microcap™ GPP capsules are not to be used in steam.

Maximum Operating Parameters

Liquid operational pressure:	5.5bar (80psi) at 20°C (68°F)
Gases operational pressure:	4.1bar (60psi) at 20°C (68°F)
Operating temperature:	43°C (110°F) at 2.1bar (30psi) in water
Reverse differential pressure:	3.4bar (50psi) at 20°C (68°F)
Recommended changeout pressure:	2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
Pleated polypropylene depth	1.1ft² (0.10m²)	2.9ft² (0.27m²)	6.24ft² (0.58m²)	12.48ft² (1.16m²)	18.72ft² (1.74m²)

Average – Filtration area varies with media thickness and porosity.

Flow Rate

The following table represents typical water flow at a one psi (69mbar) pressure differential across a single 2 inch capsule with 1.1 ft² (0.10 m²) of media with 1" sanitary ports. The liquid test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore size (µm)	0.10	0.22	0.45	0.65	1.0	3.0	5.0	10	20	30	40	60	100
GPM	0.23	0.38	0.62	0.77	0.92	0.95	1.1	1.3	1.7	1.9	2.7	3.1	3.8
LPM	0.87	1.4	2.3	2.9	3.5	3.6	4.2	4.9	6.4	7.2	10.2	11.7	14.4

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Microcap™ PPTFE

PTFE Pleated Membrane Capsules

Microcap™ PPTFE capsules are manufactured for the critical needs of the pharmaceutical industry.

Made with highly hydrophobic polytetrafluoroethylene (PTFE) membrane, these capsules are used for the filtration of non-aqueous liquids, aggressive solvents, compressed gases and as vent filters. Each module is individually tested using the water intrusion method before it is released from manufacture.

The capsule media surface area, filter core design, pleat configuration and pleat packing density have been optimised to provide increased life resulting in lower filtration operating costs.

Typical Applications

- Solvent filtration
- Fermentation air
- Tank vent filters
- Process gas
- Compressed air filtration

Features and Benefits

- Optimised for maximum filter life.
- Guaranteed microbial ratings.
- Maximized bio-burden reduction.
- Low TOC levels.

Ordering Information

Product Code: 7018- 3- XXX - X - XX - X X

Micron Rating (µm)	
P10	0.10
P22	0.22
P45	0.45
001	1.0
003	3.0
005	5.0

Pre-sterilised	
N	Non-sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	PTFE membane (absolute rated)
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles.
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	Microcap™ PPTFE capsules are not designed for steam-in-place (SIP).

Flow Rate

The following tables represent typical water flow at 69mbar (one psi) pressure differential across a single 2" capsule with 1.4 ft² (0.13 m²) of media with 1" sanitary ports. The liquid test fluid is water at ambient temperature. The gas test fluid is compressed air at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Air/Gas flow rates						
µm rating	0.10	0.22	0.45	1.0	3.0	5.0
SCFM	3	7	10	13	15	17

Liquid flow rates						
µm rating	0.10	0.22	0.45	1.0	3.0	5.0
GPM	0.23	0.35	0.85	1.3	1.7	2.0
LPM	0.87	1.32	3.22	4.92	6.44	7.57

Maximum Operating Parameters

Liquid operational pressure:	5.5bar (80psi) at 20°C (68°F)
Gases operational pressure:	4.1bar (60psi) at 20°C (68°F)
Operating temperature:	43°C (110°F) at 2.1bar (30psi) in water
Reverse differential pressure:	2.7bar (40psi) at 20°C (68°F)
Recommended changeout pressure:	2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
PTFE membrane	1.4ft² (0.13m²)	3.8ft² (0.35m²)	8.2ft² (0.76m²)	16.4ft² (1.52m²)	24.6ft² (2.29m²)

Integrity Test Specifications

Minimum Bubble Point for capsules wetted with 60% IPA/ 40% water solution.

Pore size (µm)	Bubble point
0.10	1.52bar (22psi)
0.22	1.24bar (18psi)
0.45	0.62bar (9psi)
1.0	0.41bar (6psi)
3.0	0.14bar (2psi)
5.0	0.07bar (1psi)

Validation

Microcap™ PPTFE capsules are validated using test procedures that comply with ASTM F838-15 protocols for the determination of bacterial retention in liquids. The challenge level is a minimum of 10^7 organisms per cm² of filter media. Capsules have > 7-log removal when challenge with the organisms listed below.

0.10µm: *Brevundimonas diminuta*
0.22µm: *Brevundimonas diminuta*
0.45µm: *Serratia marcescens*

Validation Guide available upon request.

PFG775/Rev3 Nov24

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Microcap™ PPES

Pharmaceutical Grade Polyethersulfone Pleated Membrane Capsules

Microcap™ PPES capsules are used for sterile filtration in the most critical pharmaceutical applications, such as: sterilising filtration of USP Water for Injection (WFI), diagnostic solutions, vaccines, ophthalmics, SVPs, LVPs and biological products.

Our hydrophilic, double-layered polyethersulfone membrane filters exhibit excellent flow rates with high throughput, thereby ensuring optimum protection.

Polyethersulfone (PES) is particularly suited for the filtration of products which contain elements that can adsorb to the media, such as preservatives and proteins. The lower binding characteristics of PES make it a good choice for the filtration of valuable protein solutions such as vaccines and biologicals as well as ophthalmic solutions.

Microcap™ PPES capsule elements are 100% integrity tested during production.

Typical Applications

- Diagnostics
- Vaccines
- LVPs and SVPs
- Biologicals
- WFI water
- Ophthalmics

Features and Benefits

- Validated for use in multiple pharmaceutical applications.
- Excellent flow rates with high throughput.
- Integrity testable.
- Designed for minimal leachables and extractables.
- Low adsorption of proteins and preservatives.
- USP Class VI approved.
- Uses FDA compliant materials.

Ordering Information

Product Code: 7018- 4- XXX - X - XX - X - X

Micron Rating (µm)	
P03	0.03
P10	0.10
P22	0.22
P45	0.45
P65	0.65
P80	0.8
001	1.0

Pre-sterilised	
N	Non-sterile
S	Sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Double layered polyethersulfone (PES) membrane
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles.
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	PPES capsules are not designed for steam-in-place (SIP)
Pre-Sterilised:	PPES capsules are offered in both non- and pre-sterilised forms.

Integrity Test Specifications - Diffusion

Pore size (µm)	Test pressure (psi)	Max Diffusive Flow (cc/min - water wetted membrane)				
		2"	5"	10"	20"	30"
0.03	60	2.1	6.3	15	30	45
0.10	48	2.1	6.3	15	30	45
0.22	35	2.1	6.3	15	30	45
0.45	20	2.1	6.3	15	30	45
0.65	15	2.1	6.3	15	30	45
0.8	12	2.1	6.3	15	30	45
1.0	8	2.1	6.3	15	30	45

Maximum Operating Parameters

Liquid operational pressure:	5.5bar (80psi) at 20°C (68°F)
Gases operational pressure:	4.1bar (60psi) at 20°C (68°F)
Operating temperature:	43°C (110°F) at 2.1bar (30psi) in water
Reverse differential pressure:	3.4bar (50 psi) at 20°C (68 °F)
Recommended changeout pressure:	2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
PPES Membrane	1.0ft² (0.09m²)	2.9ft² (0.27m²)	6.1ft² (0.57m²)	12.2ft² (1.13m²)	18.3ft² (1.70m²)

Flow Rate

The following table represents typical water flow at a 69mbar (one psi) pressure differential across a single 2 inch capsule with 1.0ft² (0.09m²) of media with 1/2" FNPT ports. The test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore size (µm)	0.03	0.10	0.22	0.45	0.65	0.8	1.0
GPM	0.16	0.26	0.46	0.71	0.86	0.91	0.97
LPM	0.61	0.98	1.74	2.69	3.26	3.44	3.67

Validation

Microcap™ PPES capsules are validated using test procedures that comply with ASTM F838-15 protocols for the determination of bacterial retention in liquids. The challenge level is a minimum of 10^7 organisms per cm² of filter media. Capsules have > 7-log removal when challenge with the organisms listed below.

0.03µm: *Acholeplasma laidlawii*
0.10µm: *Brevundimonas diminuta*
0.22µm: *Brevundimonas diminuta*
0.45µm: *Serratia marcescens*
0.65µm: *Saccharomyces cerevisiae*

Validation Guide available upon request.

PFG772/Rev3/Nov24

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Microcap™ PNY

Pleated Nylon Membrane Capsules

Microcap™ PNY capsules are designed to be used for sterilising grade filtration. The high quality nylon membrane is optimised for retention. PNY capsule filter elements are 100% integrity tested during production.

Nylon capsules see broad service in sterile fill applications in SVPs and as bioburden management filters in LVPs. Media and service liquid filtration are other common applications for this membrane.

Additional applications for Microcap™ PNY capsule filters include the final filtration of bulk pharmaceutical chemicals, USP Purified Water, Water for Injection (WFI), buffers, solvents, alcohols and other excipients. Nylon is particularly suited for the filtration of solvents because of it's broad compatibility and low level of extractables.

Typical Applications

- Bulk pharmaceutical chemicals
- SVPs and LVPs
- Buffers and other media
- Solvents
- WFI water
- Feedstock

Features and Benefits

- Optimised for retention.
- Broad solvent compatibility.
- Guaranteed microbial ratings.
- Excellent chemical compatibility.
- Low TOC levels.
- USP Class VI approved.
- Uses FDA compliant materials.

Ordering Information

Product Code: 7018- 5- xxx - x - xx - x x

Micron Rating (µm)	
P10	0.10
P22	0.22
P45	0.45
P65	0.65

Pre-sterilised	
N	Non-sterile
S	Sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Nylon 6,6 membrane
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles.
Chemical sanitisation:	Nylon does not tolerate aggressive chemical sanitisation protocols. Nylon membrane cartridges are best sanitised with 1% hydrogen peroxide or 1% hydrogen peroxide and peracetic acid. Follow the manufacturers instructions for use on nylon filter devices.
Note:	Microcap™ PNY capsules are not designed for steam-in-place (SIP).
Pre-Sterilised:	PNY capsules are offered in both non- and pre-sterilised forms.

Flow Rate

The following table represents typical water flow at a one psi (69mbar) pressure differential across a single 2 inch capsule with 1.2ft ² (0.11m²) of media with 1" sanitary ports. The test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore size (µm)	0.10	0.22	0.45	0.65
GPM	0.14	0.25	0.43	0.60
LPM	0.53	0.95	1.63	2.27

Maximum Operating Parameters

Liquid operational pressure: 5.5bar (80psi) at 20°C (68°F)
Gases operational pressure: 4.1bar (60psi) at 20°C(68°F)
Operating Temperature: 43C (110F) at 2.1bar (30psi) in water
Reverse differential pressure: 3.4bar (50psi) at 20°C (68°F)
Recommended changeout pressure: 2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
Nylon, 6,6 membrane	1.2ft² (0.11m²)	3.3ft² (0.31m²)	7.0ft² (0.65m²)	14.0ft² (1.30m²)	21.0ft² (1.95m²)

Integrity Test Specifications

Pore size	Test pressure (psi)	Max. diffusive flow (cc/min -water wetted membrane)				
		2"	5"	10"	20"	30"
0.10	48	2.1	7.1	15	30	45
0.22	35	2.1	7.1	15	30	45
0.45	20	2.1	7.1	15	30	45
0.65	15	2.1	7.1	15	30	45

PFG776/ Rev3 Nov24

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porvair
filtration group

Microcap™ GPVDF

Hydrophilic PVDF Membrane Capsule Filters

Microcap™ GPVDF capsule filters consist of a single layer, hydrophilic, high capacity polyvinylidene fluoride (PVDF) membrane. These filters are used for bioburden control and clarification/prefiltration in aqueous liquids.

Pore sizes range from 0.22 to 1.0 µm and the filter devices scale from laboratory to full production using identical materials to ensure consistent results.

The hydrophilic GPVDF capsules deliver high flow and throughput with the broad chemical compatibility of a fluoropolymer, making them ideal for filtering aggressive aqueous solutions.

Typical Applications

Bioburden control in:

- SVPs and LVPs
- Buffers
- Plasma products
- WFI
- Serum
- Vaccines
- CIP solutions

Features and Benefits

- Excellent flow rates with high throughput.
- Excellent chemical compatibility.
- Non-fibre releasing.
- USP Class VI approved.
- Uses FDA compliant materials.

Ordering Information

Product Code: 7018-6 [xxx] - [x] - [xx] - [x] - [x]

Micron Rating (µm)	
P22	0.22
P45	0.45
P65	0.65
P80	0.80
001	1.0

Pre-sterilised	
N	Non-sterile
S	Sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb*

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb*

**Fits hoses/tubes with inner diameter 11/32 to 9/16 inches*

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Hydrophilic High Capacity Polyvinylidene Fluoride (PVDF) Membrane
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Sanitisation/Sterilisation

Autoclave:

121°C (250°F), 30 min, 5+ cycles

Chemical sanitisation: Performed using industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.

Pre-sterilised:

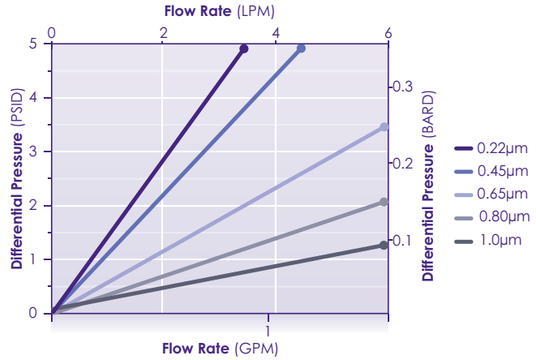
Hydrophilic PVDF capsules are offered in both non- and pre-sterillised forms.

Note:

GPVDF capsules are not designed for steam-in-place (SIP).

Clean Water Flow Rates

A 2" capsule with 1" sanitary inlet and outlet point, exhibits the flow-ΔP characteristics indicate below, for solutions with a viscosity of 1 centipoise.



Filtration Area

Capsule length				
2"	5"	10"	20"	30"
1.0ft² (0.09m²)	2.8ft² (0.26m²)	6.0ft² (0.56m²)	12.0ft² (1.11m²)	18.0ft² (1.67m²)

Maximum Operating Parameters

Liquid Operational Pressure	5.52 bar at 20°C (80 psi at 68°F)
Gases Operational Pressure	4.14 bar at 20°C (60 psi at 68°F)
Operating Temperature (water)	43°C at 2.07 bard (30 psid at 110°F)
Reverse Differential Pressure	3.45 bard at 20°C (50 psid at 68°F)
Recommended Changeout Pressure	2.41 bard (35 psid)

PFG794/Rev1:Dec24

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Microcap™ PGF

Pharmaceutical Grade Pleated Glass Fibre Capsules

Microcap™ PGF capsules are used for the pre-filtration of bulk pharmaceutical chemicals, SVPs, LVPs, water, buffers, growth media and other liquids.

Made with glass fibre microfibre media and designed with the maximum filtration area, these filters can remove large amounts of particulate and other contaminants over a long filter life. Microcap™ PGF capsules protect critical membrane filters downstream by removing 99% of contaminants at the rated pore size.

Glass fibre depth media capsules perform the critical upstream clarification of products. When used in final filtration systems, the filters protect the high-value membrane filters used downstream. Glass fibre depth media capsule filters are rinsed during production to remove manufacturing debris from the capsules.

Typical Applications

- Intermediates
- Buffers and growth media
- Bulk pharmaceutical chemicals
- LVPs and SVPs
- WFI, Water purification

Features and Benefits

- 99% efficiency at the rated pore size.
- Protect critical membrane filters downstream.
- Wide range of high efficiency retention ratings.
- High capacity for long life.
- Non-fibre releasing.
- USP class VI approved.
- Used FDA compliant materials.

Ordering Information

Product Code: 7018- 8- [xxx] - [x] - [xx] - [x] [x]

Micron Rating (µm)	
P22	0.22
P45	0.45
001	1.0
005	5.0

Pre-sterilised	
N	Non-sterile
S	Sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Pleated Fiberglass Depth Media
Media support:	Polyester
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding
O-Rings:	Buna, Viton® (or FKM), EPDM, Silicone, FEP Encap. Silicone, FEP Encap. Viton® (or FKM)

Sanitisation/Sterilisation

Autoclave:	121°C (250°F), 30 min, 5+ cycles
Chemical sanitisation:	Industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.
Note:	Microcap™ PGF capsules are not designed for steam-in-place (SIP).

Maximum Operating Parameters

Liquid operational pressure:	5.5bar (80psi) at 20°C (68°F)
Gases operational pressure:	60psi (4.1bar) at 20°C (68°F)
Operating temperature:	43°C (110°F) at 2.1bar (30psi) in water
Reverse differential pressure:	3.4bar (50psi) at 20°C (68°F)
Recommended changeout pressure:	2.4bar (35psi)

Filtration Area

Media	Capsule length				
	2"	5"	10"	20"	30"
Pleated Glass Fibre	0.8ft² (0.07m²)	2.3ft² (0.21m²)	5.0ft² (0.46m²)	10.0ft² (0.93m²)	15.0ft² (1.39m²)

Average – Filtration area varies with media thickness and porosity.

Flow Rate

The following table represents typical water flow at a one psi (69mbar) pressure differential across a single 2 inch capsule with 0.8 ft² (0.08 m²) of media with 1" sanitary ports. The liquid test fluid is water at ambient temperature. Higher pressure drops are acceptable, but as flows increase the pressure drop of the housing becomes more apparent.

Pore size (µm)	0.22	0.45	1.0	5.0
GPM	1.3	2.3	3.8	5.0
LPM	4.9	8.7	14.4	18.9

PFG774/Re4:Dec24

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porvair filtration group

Microcap™ PNYPC

Pharmaceutical Grade
Positively Charged Nylon 6.6
Pleated Membrane Capsules

Microcap™ PNYPC capsule filters consist of a positively charged Nylon 6,6 membrane used for filtering aqueous and non-aqueous liquids that contain negatively charged contaminants.

Available in 0.10, 0.22, 0.45 and 0.65 µm, Microcap™ PNYPC filters are validated for bacteria retention to provide reliable sterile filtration performance.

The positive charge removes negatively charged biological contaminants such as endotoxin, virus and other cell fragments.

Depending on level of contaminant and flow rate, Microcap™ PNYPC filters will typically exhibit > 3-log removal of endotoxin. This combination of functionality makes the PNYPC filter an excellent choice for pharmaceutical and bioprocessing applications.

Typical Applications

Microcap™ PNYPC filters are recommened for sterilising and endotoxin removal in:

- Process water
- Water for injection (WFI)

Features and Benefits

- Validated for use in pharmaceutical applications
- Integrity testable
- Designed for minimal extractables
- Non-fibre releasing
- Low TOC levels
- USP Class VI approved
- Uses FDA complaint materials

Ordering Information

Product Code: 7018 -10- XXX - X - XX - X - X

Micron Rating (µm)	
P10	0.10
P22	0.22
P45	0.45
P65	0.65

Pre-sterilised	
N	Non-sterile
S	Sterile

Length (in)	
02	2
05	5
10	10
20	20
30	30

Inlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Outlet	
A	1/4" Female NPT
B	1/4" Male NPT
C	3/8" Female NPT
D	1/2" Female NPT
E	1/2" Male NPT
F	1" - 1 1/2" Sanitary
G	Hose Barb

Specifications

Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Positively Charged Nylon 6,6 Membrane with Polyester support
Media support:	Polypropylene
End caps:	Polypropylene
Centre core:	Polypropylene
Outer support cage:	Polypropylene
Sealing method:	Thermal bonding

Validation

Microcap™ PNYPC filters are validated using test procedures that comply with ASTM F 838-15(ae1) protocols for the determination of bacterial retention in liquids. The challenge level is a minimum of 10^7 organisms per cm^2 of filter media. These capsules have > 7-log removal when challenged with the organisms listed below (0.10µm and 0.22µm meet the FDA definition of sterilising grade filters).

0.10µm: *Brevundimonas diminuta*
0.22µm: *Brevundimonas diminuta*
0.45µm: *Serratia marcescens*
0.65µm: *Saccharomyces cerevisiae*

Maximum Operating Parameters

Liquid Operational Pressure	5.52 bar at 20°C (80 psi at 68°F)
Gases Operational Pressure	4.14 bar at 20°C (60 psi at 68°F)
Operating Temperature (water)	43°C at 2.07 bar (110°F at 30 psi)
Reverse Differential Pressure	3.45 bar at 20°C (50 psi at 68°F)
Recommended Changeout Pressure	2.41 bar (35 psi)

Sanitisation and Sterilisation

Autoclave*	121°C (250°F), 30 min, 25+ cycles
Chemical Sanitization	Performed using industry standard concentrations of hydrogen peroxide, peracetic acid and other selected chemicals.

** Note: PNYPC capsules are not designed for steam-in-place (SIP).*

Filtration Area

Media	2"	5"	10"	20"	30"
Positively charged Nylon 6.6 Membrane	1.2 ft^2	3.3 ft^2	7.0 ft^2	14.0 ft^2	21.0 ft^2
	0.11m^2	0.31m^2	0.65m^2	1.30m^2	1.95m^2

Integrity Testing

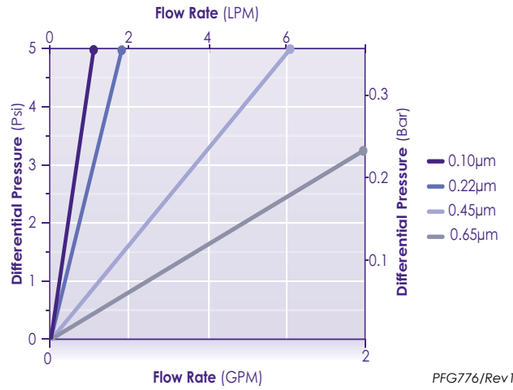
Pore Size	Diffusive Flow - Test Pressure *		Minimum Bubble Point *	
µm	Psi	Bar	Psi	Bar
0.10	48	3.30	**	**
0.22	35	2.41	50	3.5
0.45	20	1.37	25	1.7
0.65	15	1.03	19	1.3

Diffusive Flow Specifications					
Length	2"	5"	10"	20"	30"
m/Lmin	≤ 2.1	≤ 6.3	≤ 15	≤ 30	≤ 45

** For water wetted membrane*
*** Test pressure exceeds operational limits of capsule filters. Use the Diffusive Flow Test method.*

Clean Water Flow Rate

A 2" capsule with 1" sanitary inlet and outlet point, exhibits the flow-ΔP characteristics indicate below, for solutions with a viscosity of 1 centipoise.



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Microcap™ GPNSD

Nano-Spun Polypropylene Depth Capsule Filters

Microcap™ GPNSD general service grade capsules are designed for the removal of particulate contaminants from chemicals, fermentation broths, buffers, biologicals, beverages, and other liquids.

Constructed with nano-spun polypropylene depth media, these capsules offer a cost-effective solution by removing large quantities of contaminants early in the process, thereby protecting high-value filters used downstream. They are also suitable as standalone filters for clarification or particle removal in less critical applications.

Microcap™ GPNSD capsule filters achieve 99% retention of contaminants at the rated pore size, with pore size options ranging from 0.5 to 100 µm.

Typical Applications

Microcap™ GPNSD capsules are recommened for clarification & prefiltration of:

- High Purity Chemicals
- Fermentation Broths
- Wine, Beer, Juices
- Buffers & Biologicals
- Container Wash Solutions
- Inks & Dyes
- CMP Slurries
- Water Purification

Features and Benefits

- Wide range of high efficiency retention ratings
- High capacity for long life
- Designed for minimal extractables
- Non-fibre releasing
- Uses FDA compliant materials

Ordering Information

Product Code: 7018-11 [XXX] - [X] - [X] - [X] [X]

Micron Rating (µm)	
P50	0.50 (µm)
001	1.0 (µm)
003	3.0 (µm)
005	5.0 (µm)
010	10 (µm)
020	20 (µm)
050	50 (µm)
100	100 (µm)

Pre-sterilised	
N	Non-sterile
S	Sterile

Length	
02	2"
05	5"
10	10"
20	20"
30	30"

Inlet	
A	¼" Female NPT
B	¼" Male NPT
C	⅜" Female NPT
D	½" Female NPT
E	½" Male NPT
F	1" Sanitary
G	Hose Barb*

Outlet	
A	¼" Female NPT
B	¼" Male NPT
C	⅜" Female NPT
D	½" Female NPT
E	½" Male NPT
F	1" Sanitary
G	Hose Barb*

Maximum Operating Parameters

Liquid Operational Pressure	5.52 bar at 20°C (80 psi at 68°F)
Gases Operational Pressure	4.14 bar at 20°C (60 psi at 68°F)
Operating Temperature (water)	43°C at 2.07 bar (110°F at 30 psi)
Reverse Differential Pressure	1.38 bar at 20°C (20 psi at 68°F)
Recommended Changeout Pressure	2.41 bar (35 psid)

Sanitisation and Sterilisation

Chemical Sanitisation	Performed using industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.

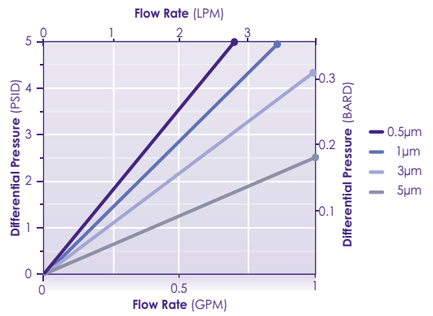
Specifications

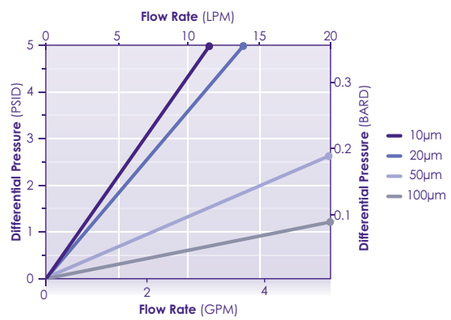
Materials of Manufacture

Housing:	Polypropylene
Filtration media:	Melt-Blown Polypropylene Depth Media
Media support:	Polypropylene
End caps:	Polypropylene
Sealing method:	Thermal bonding

Clean Water Flow Rates

A 2" capsule with 1" sanitary inlet and outlet point, exhibits the flow-ΔP characteristics indicate below, for solutions with a viscosity of 1 centipoise.





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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.

These self-contained filter assemblies are provided for varied types of inkjet applications including CIJ coding, textile, ceramics and graphics.

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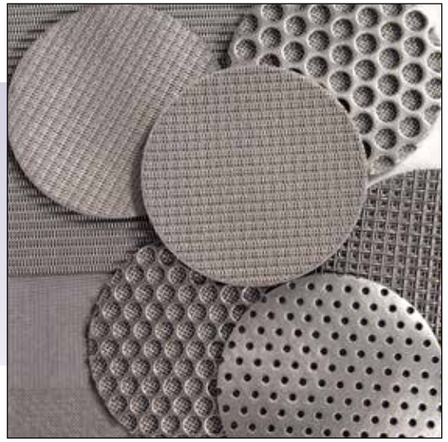
Sinterflo® Mesh Filter Discs

Flat and Pleated



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

Ordering Information

For ordering information please contact a member of the sales team.

Sinterflo® 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

Ordering Information

For ordering information please contact a member of the sales team.

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Sinterflo® Powder Filter Discs

Flat Discs

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

Ordering Information

For ordering information please contact a member of the sales team.

Stainless Steel 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

Ordering Information

For ordering information please contact a member of the sales team.

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Last Chance Filters

For the Printing Industry

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.

Ordering Information

Product Code: 8069 - Table 1

Table 1 **Micron Ratings**

0005B	5µm
0015B	15µm
0025B	25µm
0040B	40µm

Typical Applications

- Inkjet

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 (1.98")
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

For the Printing Industry

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.

Ordering Information

Product Code: 8073 - 11 - 02 - 0010B

Typical Applications

- Inkjet

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)

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porvair filtration group

Sinterflo® Pleated Unrimmed Disc Filters

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 life span.

Ordering Information

Product Code: 8071 - 01 - Table 1

Table 1 **Micron Ratings**

0002B	2µm
0005B	5µm
0010B	10µm
0020B	20µm

Typical Applications

- Inkjet

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)

Microdisc™ 3SS

30mm Stainless Steel Disc Filters

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 life span.

Ordering Information

Product Code: 8067 - Table 1 - Table 2

Table 1 **Connectors**

11	2.6mm O/D barb
22	4.9mm O/D barb

Table 2 **Micron Ratings**

0005B	5µm
0010B	10µm
0020B	20µm

Typical Applications

- Inkjet

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)

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Microdisc™ 4SS

47mm Stainless Steel Disc Filters

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.

Ordering Information

Product Code: 8077 - Table 1 - Table 2

Table 1	Connectors
11	2.6mm O/D barb
22	4.9mm O/D barb
33	3mm Jaco®
44	6.5mm O/D barb
66	¼" NPT

Table 2	Micron Ratings
0005B	5µm
0010B	10µm
0020B	20µm

Other connections available upon request.

Typical Applications

- Inkjet

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)

Grid Filters and O-Rings

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.

Ordering Information

Product Code: 8156 - Table 1 - Table 2

Table 1	Micron Ratings Nominal for Mesh
0003	3µm
0005	5µm
0010	10µm

Table 2	Filter Media
B	St. Steel 316/316L

Typical Applications

- Inkjet

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)

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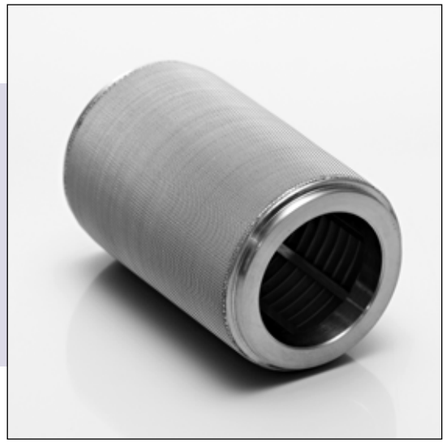
Cylindrical Filter



This is a digital inkjet filter specifically designed for use on super-wide format printer platforms. The filter is engineered from high grade stainless steel and has various micron rating options. A resistance weld manufacure process gives the filter added durability, and the stainless steel mesh filter media ensures an extended lifespan and excellent through flow.

Ordering Information

Product Code: 8112-0003B-X

Typical Applications

- Inkjet

Specifications

Filter Code

8112-0003B-X

Materials of Manufacture

Filter media:	Stainless steel mesh
Housing material:	Stainless steel

Micron Rating

10µm, 25µm

Dimensions

Disc diameter:	38mm (1.5")
Disc width:	60mm (2.36")

Filter Area

575cm² (89.1in²)

Operating Temperature

From 0°C to 50°C (32°F to 122°F)

Union Filters

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

Ordering Information

For ordering information please contact a member of the sales team.

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Microdisc™1PA

15mm S-Vent Disc Filters

Air filters with a hydrophobic filter membrane act as a barrier to all contaminants.

Ordering Information

Product Code: 8163

Typical Applications

- Inkjet

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 0°C to 50°C (32°F to 122°F)

Microdisc™2PA

25mm S-Vent Disc Filters

Air filters with a hydrophobic filter membrane act as a barrier to all contaminants.

Ordering Information

Product Code: 8164

Typical Applications

- Inkjet

Specifications

Filter Code
8164

Materials of Manufacture
Filter media: PTFE
Housing material: Polypropylene

Micron Rating
0.2µm

Dimensions
Disc diameter: 28mm (1.10")
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)

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Microdisc™ 3PS

33mm Polymeric In-Line Disc Filters

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 or 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.

Ordering Information

Product Code: 8159 - Table 1 - Table 2 - Table 3

Table 1	Connectors
11	3mm Jaco®
22	Female luer

Table 2	Micron Ratings
0005B	5µm
0010B	10µm
0020B	20µm
0050B	50µm

**Other micron ratings available, up to 250 micron.*

Table 3	Housings
12	White
13	Black

Typical Applications

- Inkjet

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
5cm² (0.78in²)

Connectors

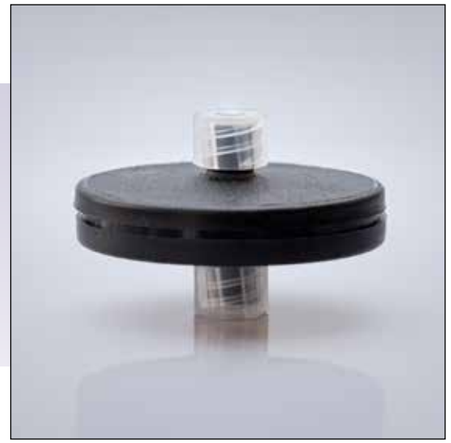
Jaco®:	3mm Jaco®
Luer:	Female luer

Maximum Operating Pressure
5bar (72.5psi)

Operating Temperature
From 0°C to 50°C (32°F to 122°F)

Microdisc™ 4PS

45mm Polymeric Standard Disc Filters



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.

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.

Ordering Information

Product Code: 8111 - Table 1 - Table 2 - Table 3

Table 1	Connectors
33	Luer
11	CPC

Table 2	Micron Ratings
0005B	5µm
0010B	10µm
0020B	20µm
0050B	50µm

**Other micron ratings available, up to 250 micron.*

Table 3	Housings
22	White
23	Black

Typical Applications

- Inkjet

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)

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Microdisc™ 4PV

45mm Polymeric Volume Disc Filters

A 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.

Ordering Information

Product Code: 8074 - Table 1 - Table 2 - 23

Table 1	Connectors
221	¼" Jaco®
222	6mm Jaco®

Table 2	Micron Ratings*
0005B	5µm
0010B	10µm
0015B	15µm
0020B	20µm
0050B	50µm

**Other micron ratings available, up to 250 micron.*

Typical Applications

- Inkjet

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)

Microdisc™ 7PS

74mm Polymeric Disc Filters

A 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.

Ordering Information

Product Code: 8169 - Table 1 - Table 2 - Table 3

Table 1	Connectors
221	¼" Jaco®
222	6mm Jaco®

Table 2	Micron Ratings
0005B	5µm
0010B	10µm
0020B	20µm
0050B	50µm

Table 3	Housings
11	Natural
13	Opaque black

Typical Applications

- Inkjet

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)

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In-Line Porous Plastic Filter

A fully integrated polypropylene filter media precision manufactured into a polypropylene housing.

This in-line porous plastic filter has excellent chemical compatibility to inkjet fluids. The high efficiency filters give long service life and are bonded for minimal extractables.

Ordering Information

Product Code: 6612 - Table 1 - Table 2

Table 1	Micron Rating (Nominal)
0005	5µm

Table 2	Tube Fitting
1	Slip taper

Typical Applications

- Inkjet

Specifications

Filter Code

6612

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

Slip taper

Maximum Operating Pressure

6bar (87psi)

Operating Temperature

From 0°C to 50°C (32°F to 122°F)

In-Line Filters

Plastic

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.

Available in black and natural colours.

Ordering Information

Product Code: 8098 - 6 - Table 1 - Table 2

Table 1	Micron Ratings
0003B	3µm
0005B	5µm

Table 2	Colour
Natural	

Typical Applications

- Inkjet

Specifications

Filter Code

8098

Materials of Manufacture

Filter media: Stainless steel mesh
Housing material: PEEK
Housing Colour: 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)

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Bulkhead In-Line Filter

This inkjet filter is housed in a Peek and Polypropylene body and uses an intergrated stainless steel filter mesh. With excellent flow rates, this filter is chemically compatible with all inkjet fluids.

Ordering Information

Product Code: 8082-0005B

Typical Applications

- Inkjet

Specifications

Filter Code

8082-0005B

Materials of Manufacture

Filter media: Stainless steel mesh
Housing material: Peek

Micron Rating

5µm

Dimensions

Filter length: 18mm (plus connector)
Filter width: 15mm

Operating Temperature

From 0°C to 50°C (32°F to 122°F)

Disc Filters
3mm tubing

This is an this is a Acytal filter manufactured without binding agents for minimal extractables.

It is available in a range of micron ratings and has complete chemical compatability with inkjet fluids. The inner mesh ensures precise filter specification to the required micron rating.

Ordering Information

Product Code: 8076-11

Typical Applications

- Inkjet

Specifications

Filter Code

8087-11

Materials of Manufacture

Filter media: PP and stainless steel mesh
Housing material: Acetal
Housing Colour: Black, white, other options available on request.

Micron Rating

5-50µm

Dimensions

Filter length: 45mm
Filter width: 34mm

Filter Area

12.5cm^2

Maximum Operating Pressure

6bar (87psi)

Operating Temperature

From 0°C to 50°C (32°F to 122°F)

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High Purity Filters for the Microelectronics Industry

Porvair manufactures a wide range of high purity porous media and reliable, high efficiency filtration products for both gas and liquid applications.

Gas Handling

The GasPro™ range of products ensure extreme cleanliness in critical semiconductor and microelectronics gas handling and delivery applications, including:

- Gas safety management
- Exhaust venting systems
- Flow control
- Mass flow control
- Needle valve replacement
- Laminar flow diffusing
- Pressure snubbing
- Flame arresting

High Purity Chemical Filtration

Our LiquiPro™ range focuses on the delivering improved performance within the semiconductor industries, by reducing process defects and to achieve an increased lifespan of the filter. The products are suitable for the following applications:

- CMP
- PVD copper plating
- Wet etch clean
- Photolitho
- Chemical delivery system
- General Filtration
- Final Cleaning and DI Water filtration
- Plating, Etching, Stripper chemicals
- Chemicals of acid, bases and solvents (selected applications)
- Engineering or Equipment companies requiring cartridge housings

porvair
filtration group

GasPro™

High Purity Filters for Gas Handling Applications

The GasPro™ range of products ensure extreme cleanliness in critical semiconductor and microelectronics gas handling and delivery applications, including:

- Gas safety management
- Exhaust venting systems
- Flow control
- Mass flow control
- Needle valve replacement
- Laminar flow diffusing
- Pressure snubbing
- Flame arresting.

We can custom engineer solutions for the most demanding applications, using porous PTFE membrane, Sinterflo® F sintered metal fibre and Sinterflo® P sintered metal powder media.

Materials of construction

Our wide range of porous media includes a variety of pore sizes and material properties. These high efficiency filters are offered in:

- PTFE membrane
- 316/316L stainless steel Sinterflo® F sintered metal fibre
- 316/316L stainless steel Sinterflo® P sintered metal powder
- Nickel Sinterflo® F sintered metal fibre
- Nickel Sinterflo® P sintered metal powder
- Hastelloy® C22 Sinterflo® P sintered metal powder.

Service in severe environments

Our GasPro™ filter media provides excellent mechanical strength, enhanced corrosion resistance and elevated temperature service in severe environments.

Mechanical strength

The filter media and supporting structure are designed to withstand the highest pressure differential. The mechanical strength of the 316/316L stainless steel filter housings will provide reliable service.

Temperature resistance

316/316L stainless steel or nickel construction provides elevated temperature service up to 500°C (930°F). Hastelloy® C22 construction is rated for 700°C (1290°F) in reducing or inert gas applications. With PTFE filter media, the filters are rated up to 120°C (250°F).

Corrosion resistance

Our GasPro™ filter hardware features electro polished surfaces to prevent corrosion and particle formation for years of reliable service. Robust construction and excellent corrosion resistance allow for service in a wide range of processing gases.

Ordering Information

For details on our complete range of products for the Microelectronics Industry, please view our Microelectronics Catalogue.

GasPro™ High Purity Gas Filters

Porvair GasPro™ high purity filters are selected for critical gas distribution and delivery systems that are part of the thin film deposition process used to make photovoltaic devices.

Our GasPro™ filters for the solar power panel industry are offered in PTFE membrane, Polypropylene, 316/316L Sinterflo® F sintered metal fiber, 316/316L Sinterflo® P sintered powder, Nickel fiber, Nickel sintered powder and Hastelloy® C22 sintered powder.

Typical Applications

- Filtration of inert gases used in load locks and process chambers
- Point-of-use filtration of CVD (chemical vapor deposition), epitaxial, diffusion, plasma etch, and other critical dry processes
- Instrument and component protection
- Reduction of pump-down cycle times and particle contamination in load locks, as well as cooling and process chambers.
- Process gases used in Plasma Enhanced Chemical Vapor Deposition (PECVD) systems for the manufacture of solar cell panels.
- Processing gases for manufacturing the front glass used for photocells and solar panels.

Flow Restrictors

Porvair GasPro™ Flow Restrictors are designed with hundreds of small, interconnected pore passageways which offer significant benefits compared to single bore restrictive flow orifices.

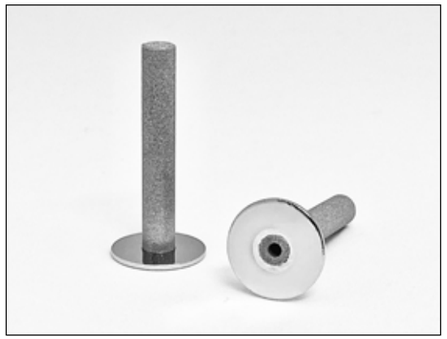
Flow limiting devices are often installed in compressed gas supply lines and gas distribution manifolds to prevent unintentional high gas flow caused by a ruptured gas line, malfunctioning valve or pressure regulator.

Gas Diffusers

Porvair GasPro™ Diffusers ensure a smooth, laminar gas flow and remove sub-micron particles when handling inert gases used wafter load lock vaccum/purge cycles. Diffusers prevent turbulence that can stir up particles in a vacuum chamber.

Porvair GasPro™ porous media is also used by OEM purifier manufacturers to support and to retain the fine, purifier media used to prevent contamination in bulk gas delivery and gas distribution systems.

The porous media can be custom manufactured to meet the critical pore size, pressure differential and flow requirements for each OEM design.



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LiquiPro™

High Purity Chemical Filtration

Our LiquiPro™ range focuses on the delivering improved performance within the semiconductor industries, by reducing process defects and to achieve an increased lifespan of the filter.

The LiquiPro™ range includes cartridges, capsules and their respective housings. The FItration hardware format comes in standard cartridges as well as disposable or capsule form. The filter media of Polypropylene (PP), Polyethersulfone (PES), Fluoropolymer (PTFE), Nylon (NL), PVDF are available at selected pore sizes.

The products are suitable for the following applications:

- CMP
- PVD copper plating
- Wet etch clean
- Photolitho
- Chemical delivery system
- General Filtration
- Final Cleaning and DI Water filtration
- Plating, Etching, Stripper chemicals
- Chemicals of acid, bases and solvents (selected applications)
- Engineering or Equipment companies requiring cartridge housings

Ordering Information

For details on our complete range of products for the Microelectronics Industry, please view our Microelectronics Catalogue.

Our LiquiPro™ range of filters and filter housings are designed specifically for the following applications:

Chemical Mechanical Polishing (CMP)

This a critical microelectonics process step in STI, Copper, Oxide or Tungsten. These advanced CMP processes require filters that meet the stringent demands of scratch reduction improvement as well as efficient removal rate.

Our LiquiPro™ SL filters are compatible with chemical slurries ranging from aluminas, colloidal and ceria types. These are applicable at Point-Of-Use (POU) or Bulk Slurry Delivery System (BSDS).

POST CMP Clean

In post CMP cleaning process, Dilute HF or Ammonia Solution are normally used in Applied Material Reflexion tool series. This is a cartridge filter with hydrophilic PES membrane. Our LiquiPro™ BU filters are designed for this specific purpose.

PVD

Copper Plating filters are specific to LAM's advanced Cu SO4 plating tools for the Damascene and TSV processes. The Electro-Chemical Plating bath chemistries comes installed with a 10inch Cartridge ECP filter. Our LiquiPro™ CO series is designed for fine particle removal and brings about plating consistencies in the Copper Sulphate plating solution. The Hydrophilic PTFE membrane works well with a broad range of plating additives and eliminate plating causing defects. The tool also has a Single Anode Chamber (SAC) which has a 5 inch disposable filter installed. Our LiquiPro™ SL filters are suitable for this purpose.

Wet Etch Clean (WEC)

These filters are predominant in many front or back end chemical processes of cleaning or etching or stripping. A wide range of acids, bases and solvents are used in ambient or elevated temperatures require different adoptions of the filters in filter media and hardware.

We recommend all-fluoropolymer cartridges for many of these applications. The family of LiquiPro™ F2, F3 and SH filters come with Hydrophobic PTFE membrane and PFA core, cage, endcap hardware that will meet all requirements.

In etching or stripping processes where less aggressive chemicals are used, the Fluoropolymer membrane with Polypropylene hardware would be applicable. Our LiquiPro F2™ series would be well suited for this application. Similarly in CDA filtration found in many tools, the adoption of mainly cartridge filters with the PTFE membrane and PP hardware construction.

The LiquiPro™ FG series of filters are designed for this purpose.

Photolitho

In the Lithography process, high viscosity photoresist together with developer and stripping process employ a variety of membrane materials to eliminate contaminants in the bath chemistries. In developer process, chemicals such as TMAH or KOH and DI water used Hydrophilic PES membrane in disposable type filter formats. The LiquiPro™ MI series of capsule filters are made of PES membrane with HDPE support are suited for both developer and DI water filtration.

Advanced photoresist system consists of typically of solvent, photo acid generator (PAG), acid quenchers, additives and surfactants. Both the LiquiPro™ MI (PTFE) and PN (Nylon) series have excellent filtration performance to remove the gels present in most photoresist chemicals.

Chemical delivery system

In bulk chemical delivery systems, a diverse range of cartridge filters are normally employed for slurries, acids, bases and solvents. Typically, filter cartridges from 10", 20" and 30" are installed with PP, PFA and stainless steel housings.

Water cleaning

This is made in reference to systems that use Direct or Recirculation DI Water for cleaning and rinsing. The LiquiPro™ DI cartridge filter is constructed of pleated PES membrane and PP hardware. For disposable type, the LiquiPro™ MI PP series are available.

General filtration

We have a range of PP filters whether it is melt blown or pleated type cartridge made available for general filtration, including LiquiPro™ PA with pleated media.

Filtration housings

We offer a selected range of cartridge housings for aggressive chemicals at elevated temperatures, solvents, weak acids, bases, slurries and water.

Ordering Information

For detailed information and ordering, please refer to respective datasheet.

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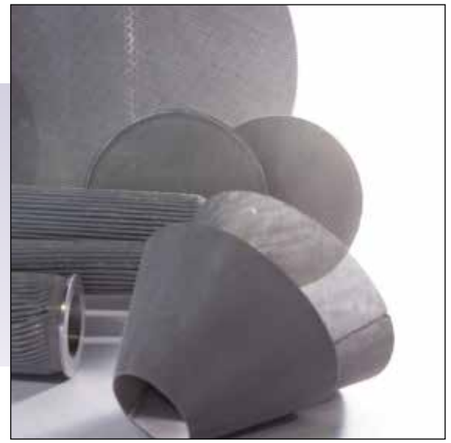
Fluidisation and Powder Handling Units



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.

porvair filtration group

Sinterflo® MC Fluidising Media

For Powder Handling

Multi-layered, diffusion-bonded stainless steel mesh is available in 316/316L 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 130cm (40" x 52") 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 316/316L 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.

Ordering Information

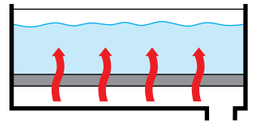
For ordering information please contact a member of the sales team.

Sinterflo® MC Fluidising Media

Typical Applications

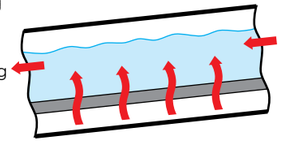
Fluidised Beds

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.



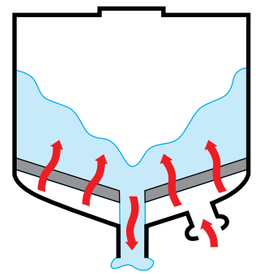
Fluidised Gravity Conveyors

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.



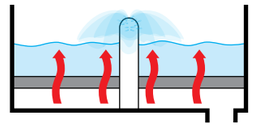
Fluidised Hoppers

Formed in to 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 electro-plating, fermentation and water treatment industries.



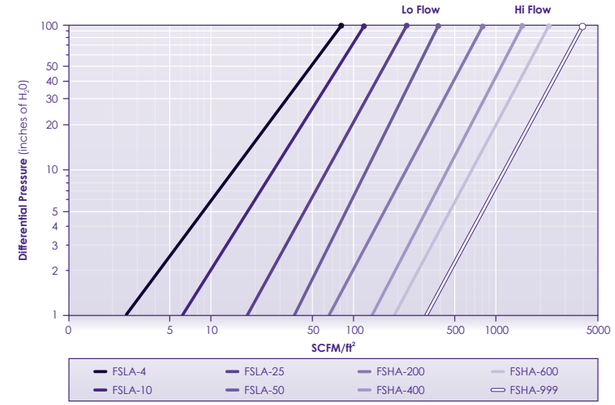
Specifications

FSLA Standard Lo Flow Fluidising Media Grades

Grade	Airflow (SCFM/ft²@2 in of H_2O)	Nominal Thickness mm (in)
FSLA-0005	5	1.37mm (0.054")
FSLA-0010	10	1.47mm (0.058")
FSLA-0025	25	1.57mm (0.062")
FSLA-0050	50	1.65mm (0.065")

FSHA Standard Hi Flow Fluidising Media Grades

Grade	Airflow (SCFM/ft²@6 in of H_2O)	Nominal Thickness mm (in)
FSHA-0200	200	1.02mm (0.040")
FSHA-0400	400	1.19mm (0.047")
FSHA-0600	600	1.32mm (0.052")
FSHA-1000	1000	1.63mm (0.064")



PFG626/Rev3:Nov24

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Vyon® Porous Polymer Fluidising Media

For Powder Handling

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.

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

Typical Applications

Food and pharmaceutical

- Sugar
- Flour
- Milk powder
- Paracetamol
- Vitamins

Industrial and construction

- Cement
- Gypsum
- Soda/fly ash
- Coal dust

Chemical and plastics

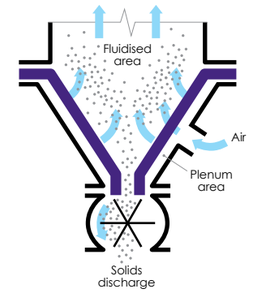
- Titanium dioxide
- Carbon black
- Calcium carbonate
- Polyethylene powder
- Epoxy and polyester paint powders

Ordering Information

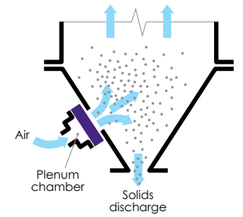
For ordering information please contact a member of the sales team.

Typical Applications

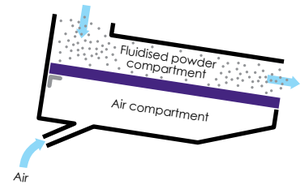
Gravity discharge



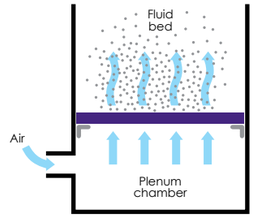
Anti-bridging and aeration pads



Air assisted gravity conveying



Dip coating



Specifications

Mean Pore Size
12-16µm

Air Flow at 10mbar
2-3$m^3/min/m^2$ (71$ft^3/min/ft^2$)

Removal Efficiency (Air)
6µm

Elongation at Break
10%

Tensile Strength
70 kgf/cm^2 (12.8lbf-ft)

Temperature Range*
-70°C to 110°C* (-92°F to 230°F)

** Depending on material type.*

PFG639/December2022

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Flow and Sound Control

We manufacture a range of flow and sound control units for the process industries. Using both metallic and polymeric materials, our 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.

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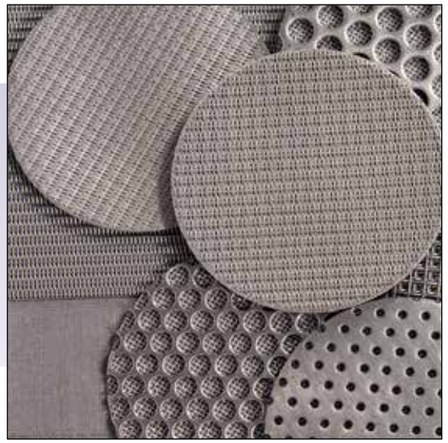
Sinterflo® MC Filter Plates

Metal Composite Filter Plates



Multi-layered, diffusion-bonded, stainless steel mesh is available in 316/316L 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 1,300mm (40" x 52") 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 540°C (1,000°F), 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

Ordering Information

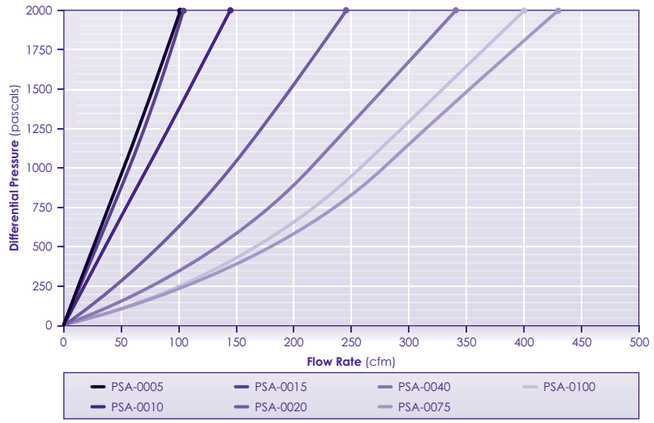
For ordering information please contact a member of the sales team.

Specifications

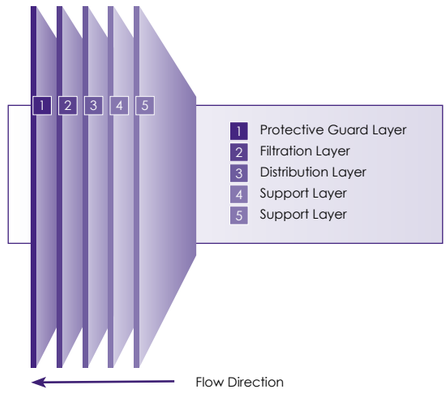
Standard Filter Plate Grades

Grade	Nominal Rating (microns)	Partical Control Mesh (wires per inch)	Nominal Thickness (inch (mm))
PSA-0005	5	325 x 2300	0.066" (1.68mm)
PSA-0010	10	200 x 1400	0.066" (1.68mm)
PSA-0015	15	165 x 1400	0.066" (1.68mm)
PSA-0020	20	165 x 800	0.066" (1.68mm)
PSA-0040	40	325 x 325	0.066" (1.68mm)
PSA-0075	75	250 x 250	0.066" (1.68mm)
PSA-0100	100	150 x 150	0.066" (1.68mm)

Flow Versus Pressure Drop



Sinterflo® MC Filter Plate Configuration



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Sinterflo® AP IFR

Sintered Porous Media In-Line Flow Restrictors

When a set flow rate is required, Porvair's Sinterflo® In-line Porous Metal Flow Restrictors are the low-cost alternative that can replace your flow controllers, needle valves, and calibrated orifices.

Flow limiting devices are often installed in compressed gas supply lines and gas distribution manifolds to prevent unintentional high gas flow caused by ruptured gas lines, or malfunctioning valve or pressure regulators.

Typical Applications

- Medical
- Chemical
- Pharmaceutical
- Safety Devices
- Semiconductor
- Food and Beverage
- Aerospace
- Leak Detection
- Replacement for Flow Controllers/Needle Valves
- Chromatography
- OEM

Design flexibility

Porvair's porous metal flow restrictors can accommodate almost any flow requirement. For technical data on a specific flow restrictor, or help on selecting the best flow restrictor for your application, contact the Porvair sales team with the following information, to discuss product availability:

1. Gas type and operating temperature
2. Inlet pressure
4. Desired downstream flow rate
3. Downstream pressure
5. Fitting size, type, and material.

Features and Benefits

- **Improved gas safety management**
  Porous metal flow restrictors 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. They can be used in a wide range of inert, highly toxic and pyrophoric gases to reduce the handling risk.
- **Reliable, tamper proof flow control**
  Porous metal flow restrictors have no moving parts and do not require any power. They will continue to provide accurate, fixed flow without adjustment over the product's lifespan.
- **Sintered porous media provides laminar flow**
  These porous metal flow restrictors are designed with large numbers of small, interconnected passageways that restrict and limit flow in a gas line. Unlike single bore flow restrictors, these porous metal flow restrictors have a reduced chance of plugging, decreased flow turbulence, and reduced flow burden for a longer lasting product.
- **Pressure stabilization**
  Prevention of pressure surges and pressure shock protects and improves dynamic flow control performance downstream.

Specifications

All metal construction
A stainless steel porous element is fitted into a standard stainless steel face seal fitting. Other materials and fitting configurations are available.

Calibrated using N2, He, H2, Air, O2 or Ar. Other density gases will be calibrated using N2 as a correlation.

Wide range of operating conditions

Standard flow tolerance of +7.5% of the rated flow at the rated pressure and gas type.

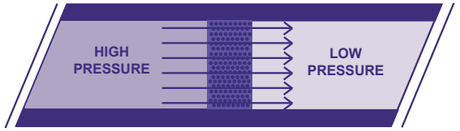
Down stream flow rates from 60 SLPM down to 1 SCCM.

Operating pressures up to 110psig (standardising to atmosphere).

Sustained operating conditions in temperatures up to 450ºC in inert gas applications.

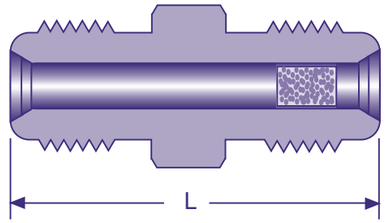
Porvair Sinterflo® AP IFR Flow Restrictors

- Low gas approach velocity, virtually no effect on performance.
- Sinterflo® AP media with multiple pathway resists particulate fouling.
- Low velocity gas flow creates laminar downstream flow.



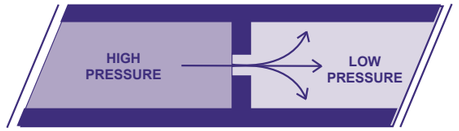
Cross Section Example

Example Hardware B: 1/4" x 1/4" VCR



Traditional Single Orifice Device

- High gas velocity, pressure, heat causing erosion.
- Particulate fowling changes gas flow volume.
- Downstream turbulent gas flow.



Ordering Guide

Product Code: 1 2 3 4 5 6 7 **Eg: SIFR-C-SS-30-N2-500-0**

1. Part Number
SIFR

2. Hardware	
A	Bushing only
B	1/4" x 1/4" VCR
C	1/8" x 1/8" VCR
D	1/4" Tube Union
E	1/8" Tube Union
F	1/4" x 1/4" Compression
G	1/8" x 1/8" Compression
H	1/8" x 1/4" Compression
I	1/4" x 1/4" Straight Pipe Adapter
J	1/8" x 1/8" Straight Pipe Adapter

3. Porous Material	
SS	Stainless Steel 316L

4. Inlet Pressure (psig)
Up to 110psig

5. Calibration Gas Type	
CDA	Air
N2	Nitrogen
He	Helium
H2	Hydrogen
O2	Oxygen
Ar	Argon

6. Flow Rate
1- 60,000 SCCM

7. Outlet Pressure (psig)	
0	Atmospherre
-15	Vacuum

Note: The following table does not represent all avalible flow restrictor options. Contact a Porvair sales representative for requests.

PFG901/Rev8:Aug24

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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 Æ Determination of Bubble Point Pore Size in Porous Sintered Metal
- ISO 4022 Æ Determination of Permeability
- ISO 2738 Æ Determination of Density in Porous Materials

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
- 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

Ordering Information

For ordering information please contact a member of the sales team.

Sinterflo® P Porous Powder Cylinders

For Gas, Steam and Liquid

We manufacture wide range of Sinterflo® P porous sintered stainless steel powder cylinders.

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 4.9bar (71psi) 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

Typical Applications

Gas Filtration

- Highly aggressive gasses

Steam Filtration

- Breweries
- Chemicals
- Dairies
- Food and beverage
- Pharmaceuticals

Liquid Filtration

- Chemicals
- Food and beverage
- Pharmaceuticals and cosmetics
- Solvents

Standard Sizes for Sinterflo® P Stainless Steel Cylinders

Stainless Steel Grade	Gas, Air, Steam (µm)	Liquid (µm)	OD (mm)	ID (mm)	Length (mm)	Wall Thickness
10	1	6	34	28	75	3
30	5	15	34	28	75	3
40	25	30	34	28	75	3
10	1	6	34	28	100	3
30	5	25	34	28	100	3
40	25	30	34	28	100	3
10	1	6	44	38	500	3
30	5	15	44	38	500	3
40	25	30	44	38	500	3
10	1	6	54	48	530	3
30	5	15	54	48	530	3
40	25	30	54	48	530	3
10	1	6	76	70	760	3
30	5	15	76	70	760	3
40	25	30	130	124	760	3
10	1	6	130	124	760	3
30	5	15	130	124	760	3
40	25	30	130	124	760	3

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.

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Vyon® Silencers

Pneumatic Equipment Silencing

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 adaptor.

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 un-silenced 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 10bar (150psi).
- **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.

Ordering Information

For ordering information please contact a member of the sales team.

Specifications

Materials of Manufacture

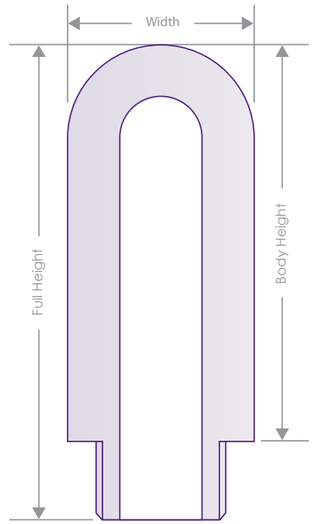
Body: Vyon® Sintered porous HDPE
Adaptor: Injection moulded solid HDPE

Fitting

BSP (British Standard Pipe)

Fitting Guide

Fitting size (Inches)	Full Height (mm)	Body Height (mm)	Width (mm)
⅛"	35.5 (1.36")	27.8 (1.09")	12.9 (0.51")
¼"	42.6 (1.68")	35.7 (1.04")	16.6 (0.65")
⅜"	67.5 (2.66")	57.4 (2.26")	24.4 (0.96")
½"	78.5 (3.09")	68 (2.68")	24.8 (0.98")
¾"	139.8 (5.5")	124.8 (4.91")	37.6 (1.14")
1"	154 (6.06")	135.5 (5.33")	47.8 (1.22")
1"	115 (4.53")	95.6 (3.76")	47.8 (1.88")



Maximum Working Pressure

10bar (150psi)

Noise Reduction

Up to 30dB

Operating Temperature Range

-70°C to +80°C (-94°F to 176°F)

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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

Ordering Information

For ordering information please contact a member of the sales team.

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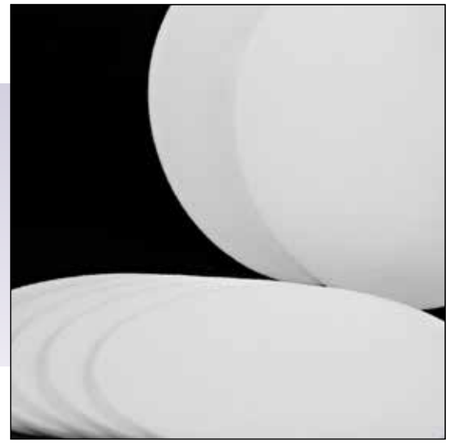
Diffused Aeration and Degassing



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 ensures 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

Vyon® Disc Diffusers

High Density Polyethylene Disc 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:	1-5m^2 (10.8 - 53.8ft$^{2)}$/hr/ diffuser

Ordering Information

For ordering information please contact a member of the sales team.

Vyon® Tubular Diffusers

High Density Polyethylene Tubular Diffusers

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.

Specifications

Materials of Manufacture

Tube:	High Density Polyethylene (HDPE)
Adaptor:	High Density Polyethylene (HDPE)
Gasket:	EDPM

Technical Information

Approximate Weight:	0.3kg (0.7lb) per 500mm (19.67") diffuser
Dry Permeability:	94m^3 (24,832gal)/ hr/500mm diffuser @ 15mbar (218psi) Δp
Diffuser surface area:	0.1175m^2 (1.26ft^2) 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 Applications

- Water treatment
- Potable water filtration
- Ponds
- Rivers
- Fish farms

Features and Benefits

- Robust and rigid

Typical SOTE %/m depth: 6.8%

Ordering Information

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Spargers

For Liquid and Gas Contact Applications

A complete range of porous materials for gas/liquid contact applications across a variety of industries.

The key to efficient gas transfer is to generate a high volume 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 316/316L 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:

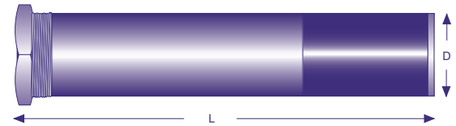
- Fermentation
- Agitation
- Bioremediation
- Oxygen stripping
- De-watering
- Dissolved air flotation processes used by major oil companies

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.

Ordering Information

Whilst having the ability to design and supply a full sparger range, in order to reduce lead times and lower minimum order quantities, we have a standard customisable range of spargers to accommodate lower volumes.



Product Code: SFS - 1 - 2 - 3 - 4 5

1: Micron

2	Standard
10	Steam
40	Agitation

2: Diameter

A	1/2"
B	1"
C	2"

3: Porous Length

1	1"
2	2"
4	4"
6	6"
12	12"

4: Fitting Type

H1	NPT Hex Nipple	1/4"
H2	NPT Hex Nipple	3/8"
H3	NPT Hex Nipple	1/2"
H4	NPT Hex Nipple	3/4"
H5	NPT Hex Nipple	1"
H6	NPT Hex Nipple	1 1/2"
H7	NPT Hex Nipple	2"
R1	NPT Reducing Bushing	1/4 - 1/8"
R2	NPT Reducing Bushing	3/8 - 1/4"
R3	NPT Reducing Bushing	1/2 - 1/4"
R4	NPT Reducing Bushing	3/4 - 1/2"
R5	NPT Reducing Bushing	1 - 3/4"
R6	NPT Reducing Bushing	1 1/2 - 1"
R7	NPT Reducing Bushing	2 - 1 1/2"
I	Impingement Only	

5: Impingement

0	None
1	1"
6	6"
12	12"

PFG052/Oct23/Rev1:Nov24

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Speciality Products

We continue 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.

Although we operates across many filtration and separation markets there is significant interaction between each division in terms of product research and development.

The new product development team is drawn from scientists and engineers from across all divisions to meet up for monthly peer and management reviews in an environment that encourages 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.

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Bonfil™

Resin Bonded Grooved Filters

Bonfil™ is a resin bonded filter that is constructed using an advanced manufacturing process producing a rigid graded density filter. The rigid phenolic resin structure ensures that our Bonfil™ filters can withstand high viscosities and temperatures without deformation or collapse of the pores.

The structure prevents the off-loading of particles captured, as the differential pressure rises across the filter.

Having a castellated outer surface increases the effective surface area, thereby lowering the differential pressure and increasing the dirt holding capacity of the filter.

Overall, Bonfil™ is an effective filter for removal of gels, deformable agglomerates, and other process by-products in conditions where high viscosity, high temperatures and aggressive liquids are present.

Typical Applications

- Organic chemicals
- Process water
- Inks and paints (not for electrophoretic paints)
- Emulsions
- Adhesives
- Lacquers and varnishes
- Epoxy resins and waxes
- Plasticisers
- Coolants, machine oils and manufacturing fluids
- Fertilisers and pesticides

Features and Benefits

- **Graded pore density**
  Consistent filtration with lower differential pressure drop across the cartridge ensures longer filter life.
- **Castellated**
  Increased surface area for greater dirt holding capacity.
- **Resin bonded rigid structure**
  Prevents off-loading of contaminant during pressure surges and high differential pressure.
- **Broad chemical compatibility**
  Suitable for aggressive chemical applications.
- **Low disposable costs**
  Coreless filter, does not contain plastics or metals and easily crushed or shredded.
- **Broad range of micron sizes (1µm to 150µm)**
  Suitable for clarification and removal of gels and deformable agglomerates.

Specifications

Operating Characteristics

Maximum change out differential pressure:
50 psid (3.45 bar).

Recommended change out differential pressure:
35 psid (2.41 bar).

Maximum operating temperature:
121°C (250°F).

Materials of Manufacture

Formulation code	Fibre	Resin	Removal rating (µm)
AP	Acrylic	Phenolic resin	1 to 125 micron

Part Number/Ordering Guide for Resin Bonded Filters

Product Code: D [XX] [XX] [XX] E.g: D10AP09 = 10µm Acrylic 9.75" long

Micron Rating (µm)

01	1
02	2
03	3
05	5
10	10
25	25
50	50
75	75
100	100
125	125

Method of Construction

AP	Acrylic fibres Phenolic resin

Length (in)

09	9.75
10	10
19	19.5
20	20
29	29.25
30	30
39	39
40	40

PFG764/Rev2:Sept23

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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 endotoxis.

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

Typical Applications

NanoKey™ cartridge filters are suitable for the sub-micronic filtration of a wide range of process liquids.

- **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

Ordering Information

For ordering information please contact a member of the sales team.

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

Selection Guide

Model #	Micron Rating	Cartridge Length	Cartridge Width	Max. Flow Rate gpm (lpm)	Applications
CNKS10D	Nano Range	9 3/4" (248mm)	2 ¾" (70mm)	5 (22.7)	Single Faucet (Kitchen)
CNKS20D	Nano Range	20" (508mm)	2 ¾" (70mm)	10 (45.5)	Single Faucet (High Capacity)
GCNKS10D	Nano Range	9 3/4" (248mm)	4 ½" (108mm)	11 (50)	House
GCNKS20D	Nano Range	20" (508mm)	4 ½" (108mm)	22 (100)	House (High Capacity)

The retention/adsorption of the NanoKey™ products may be determined/ optimised through changes in filtration conditions.

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Sinterflo® CRC

Sintered 316/316L SS colour remediation chromatography (CRC) disc assemblies used in edible oil extraction

Sinterflo® CRC multi layered, diffusion-bonded stainless-steel meshes are available in 316/316L and other alloys. This precision filter mesh, also known as a porous plate, is available in a range of different pore sizes ranging from 1 - 100 microns in various diameters.

These multi-layers precision filter meshes are produced using a novel sintering process resulting in superior mechanically strong structures. Primarily made from 316/316L stainless steel.

Colour Remediation Chromatography (CRC) and Super Critical Fluid Chromatography (SFC)

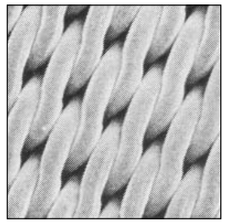
This final filtration method occurs after solvent and supercritical extraction or winterization and before distillation of the extracted oil. Filter aids such as activated magnesium silicate, PVPP, clay, silica gel and carbon are packed into a column. The extracted oil is then pulled through the column using vacuum and/or pressure assist. The purpose of this process is to strip away undesirable plant material, pigments, fats, and chlorophyll.

Sinterflo® CRC discs can be used as a robust solution in high pressure chromatography columns for retaining fine particles used in filter aids and prevent harmful particle pass through resulting a pure extract, free from any contamination.

Features and Benefits

- **High permeability**
  Custom designed for shorter batch times, lower delta P and longer filter life. Outperforms competition by 75%.
- **Abrasion Resistance**
  Unlike filter papers Sinterflo® CRC will not introduce any downstream contaminates, highly resistant to mechanical abrasion.
- **Uniform pore structure**
  Highly selectable for precise media retention.
- **Extremely Robust**
  Self-supporting and will perform under very high pressures.
- **Cleanability**
  Sustainable solution easily backwashed or chemically cleaned for multiple uses.
- Custom sizes and engineered solutions available.
- **Made in the USA.**

Typical cross section of Sinterflo® CRC media configuration.



Specifications

Materials of Manufacture

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

Dimensions (Nominal)

Standard sizes range from 4 - 12" D x 0.083" H in the form of a complete assembly with fully welded hardware.

Custom diameters, shapes, welded cones and welded cylinders, pleated cartridges, and the materials can be manufactured in a variety of layer combinations depending on your specific requirements.

Maximum Differential Pressure

300 PSIG
Custom filters available for high pressure applications. Contact Sales Team for further information.

Operating Temperature

Maximum continuous:
up to 644°F (340°C)
up to 1832°F (1000°C) alloy limiting

Sinterflo® CRC Ordering Information

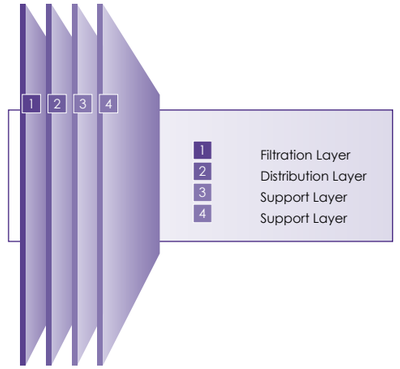
To form a part code, select from the table below:

Product Code: Sinterflo® CRC- 1 - 2

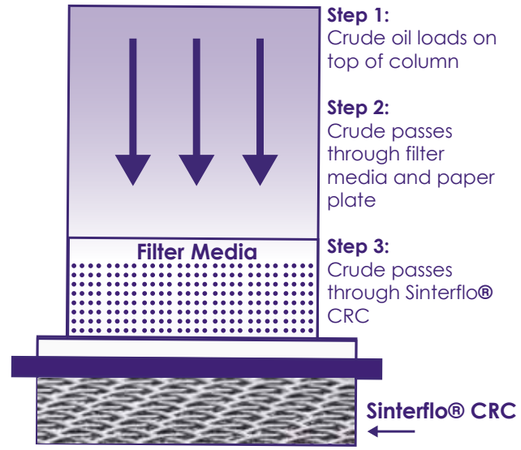
Table 1: Micron Grade Code / µm		Table 2 : Diameter Code / diameter	
001	1µm	03	3"
002	2µm	04	4"
005	5µm	06	6"
010	10µm	08	8"
020	20µm	10	10"
		12	12"

Larger pore sizes and diameters available upon request, contact the Sales Team for further information.

Sinterflo® CRC Filter Plate Configuration



Colour Remediation Chromatography (CRC) Process Diagram



PFG646/Rev2/Feb2023

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Differential Pressure Indicators

Our range of auxiliary products are manufactured to provide supplementary system support.

Differential pressure indicators (DPIs) provide indication of increasing differential pressure, filter blockage or by-pass 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.

Differential Pressure Indicators

For the Aerospace Industry

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

Ordering Information

For ordering information please contact a member of the sales team.

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Media and Materials

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

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Sinterflo® F

Sintered Metal Fibre

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

Ordering Information

For ordering information please contact a member of the sales team.

Sinterflo® P

Sintered Metal Powder

A robust material is manufactured from sinter-bonded metal powders. Primarily produced in 316/316L 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

Ordering Information

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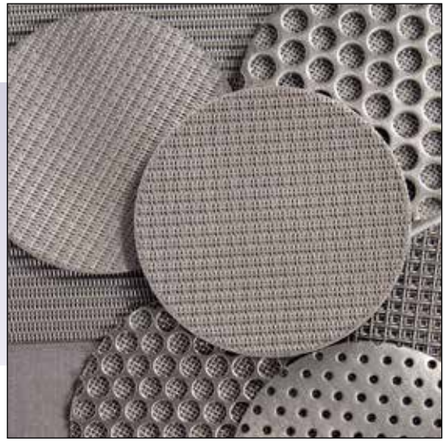
Sinterflo® M

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 316/316L 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.

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 316/316L 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**
  Offers robust and self-supporting structures
- **Can be cleaned repeatedly**
  Suitable for reuse; providing an economical choice
- **Non-shedding media**
  Provides resistance to mechanical abrasion
- **Easily custom-engineered**
  To meet required specifications of materials, strength, flow requirements, thickness, micron rating and environment

Ordering Information

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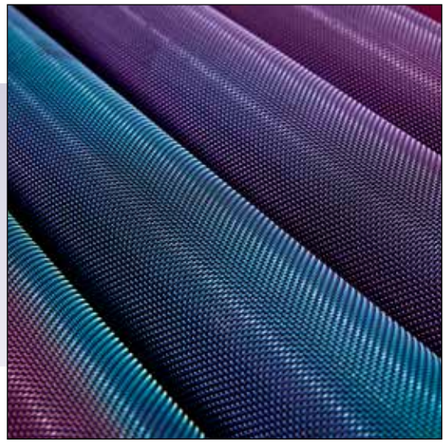
Porvair Sinterguard®

Duty Extension Treatments for Sinterflo® Cartridges and Media



To improve the performance and lifetime of our metallic filters, we have developed the Porvair Sinterguard® surface modification technologies.

Porvair Sinterguard® technologies are proprietary processes that can be applied to our metallic filter elements to enhance their material properties in challenging environments.

The treatments modify the surface of the filter by the application of a chemical vapour deposition process that enhances durability and system performance, reducing overall life cycle cost.

Applications

The technologies are suitable for a range of applications in demanding environments. Ideal for use in refinery or chemical processes where hot or corrosive fluids would otherwise be detrimental to filter lifetime or integrity.

As part of our pulse jet cleaning system, Porvair Sinterguard® provides enhanced *in-situ* cleaning to ensure differential pressure rise is minimised for increased on-stream lifetime.

Porvair Sinterguard® PHC

PHC Corrosion Resistance

Porvair Sinterguard® PHC extends the life of 316/316L stainless steel and exotic alloys in highly corrosive fluid environments up to 500°C (932°F) depending on the environment.

The graph depicts simplistically the elemental structure of the surface modification. It provides a modification of the base metal in the form of a transition layer, as well as a discrete surface coating, inhibiting the attack of corrosive fluids across a wide range of pH conditions.

Numerous specification based trials have been applied for wet corrosion trials including;

- Salt spray to ASTM D117
- Stress corrosion to ASTM G36
- Pitting and crevice corrosion to ASTM G48B
- Cyclic polarisation to ASTM G61
- Condensing humidity to ASTM D4585.

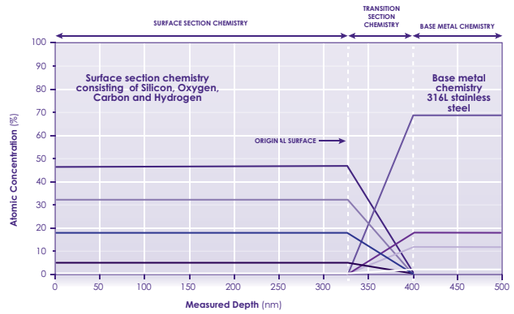
Corrosion rate comparisons (at 22°C)		
Corrosive agent	**Untreated 316/316L SS MPY units (0.001" per year)**	**Porvair Sinterguard® PHC MPY units (0.001" per year)**
6N HCl (21.88%)	114	2.7
6N HBr (48.55%)	3.4	0.8
5% HF	120	80.4
25% H2SO4	54.6	5.4
Conc. HNO3	0.78	0.10
85% H3PO4	0.62	0.08

Features and Benefits

- **Increased chemical resistance**
  The stability of 316/316L is enhanced for many acidic applications including:
  - hydrochloric acid (HCl)
  - nitric acid (HNO3)
  - sulphuric acid(H2SO4)

  For H2SO4 (sulphuric acid) at a 0.3% concentration (w/w), the PHC treatment resulted in a 16 times improvement in reducing corrosion. At a 10% concentration (w/w) Sinterguard® PHC resulted in a 10 times improvement in reducing corrosion when compared to 316/316L stainless steel.
- **Increased performance**
  For applications involving various concentrations of hydrochloric acid (HCL) this surface modification has been compared with other materials such as Hastelloy® C-22 and has presented the lowest corrosion rate with a 103 times improvement over the 316/316L stainless steel corrosion rate.
- **Improved cleanability**
  This surface modification is specifically functionalised to reduce the surface energy on the materials exposed surface, thereby inhibiting the ability of various contaminants to adhere to the filter media.
  This reduction in adhesion improves the efficacy of *in-situ* cleaning processes such as pulsejet blowdown (gas) and backwash (liquid) extending the potential for increased on-stream operational or campaign life.
  This benefit is also prevalent in offline or remote cleaning, permitting improved recovery of the differential pressure.
- **Corrosion resistance**
  In specific trials, performed in accordance with standard controlled conditions, the rate of corrosion has been measured for a quantitative comparison to be produced.

Porvair Sinterguard® PHC Simplistic Structure Representation



Porvair Sinterguard® HTR

HTR High Temperature Gaseous Duties

Porvair Sinterguard® HTR extends the service life of 316/316L stainless steel and exotic alloys at elevated temperatures.

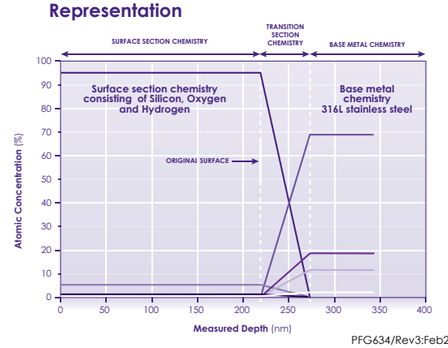
The HTR treatment is application specific, formulated to suit the process conditions of more elevated temperature applications, up to 800˚C (1,472°F), depending on the environment.

This treatment has the added ability to extend the operating conditions of the filter elements and cartridges in higher temperature gaseous duties.

Features and Benefits

- **Increased chemical compatibility**
  The HTR surface modification is highly effective in providing a barrier resistance to the effect upon various base metals (316/316L stainless steel, Hastelloy®, Inconel® and various iron/ chrome/ alumina alloys) in particular duties where sulphur (H2S, COS) and/or chlorine (HCl) is present. The HTR surface modification is not suitable for basic solutions, pH limit being 8.
- **Increased filter life**
  The addition of the HTR coating to 316/316L stainless steel can increase the filter durability by 20 times, given conditions of 2% H2S at a temperature of 350°C.
- **Increased temperature resistance**
  In specific applications the surface modification has provided protection and extended life of up to 15 times over 316/316L stainless steel including:
  - Biomass gasification (3% H2S, >20% H2O and a temperature in excess of 500°C),
  - Coal and petcoke gasification (0.4 to 2% H2S, up to 50% H2O and temperatures up to 380°C)
  - A variety of other high temperature applications containing chlorine, fluorine or sulphur elements.

Porvair Sinterguard® HTR Simplistic Structure Representation



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Vyon®

Sintered Porous Plastics

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.

Ordering Information

For ordering information please contact a member of the sales team.

Vyon® Material Range

Through a range of proprietry 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

Name	Filtration Grades Liquids (µm)*	Gases (µm)
Vyon® T	10	2
Vyon® M	6	1
Vyon® D	15	6
Vyon® F	35	10
Vyon® HP	70	30

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.

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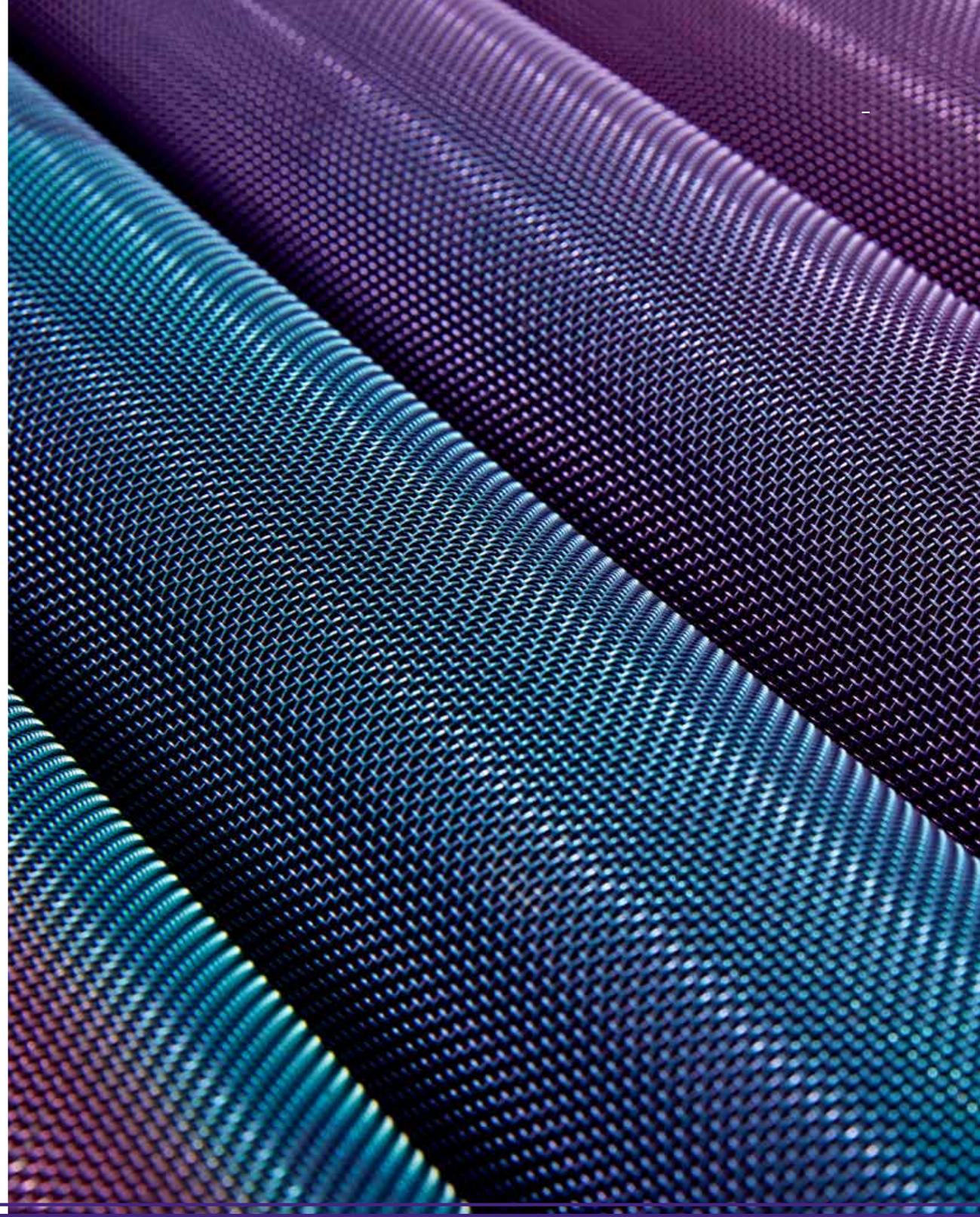

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