porvair
filtration group

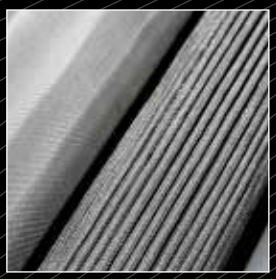
Distributor Catalog

Standard Product Range 2020













World Class Filtration Solutions

Porvair Filtration Group

Distributor Catalog

Product Range 2020

www.porvairfiltration.com

Contents by Product

Porvair Filtration Group

Our Industries

Aerospace and Defense

We design and manufacture specialist filtration equipment to meet the exceptional technical challenges of the aerospace and defense industry, for contamination control and condition monitoring in hydraulic, fuel, lubrication, coolant and air systems.

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

Food and Beverage

Our range of filters are installed to effectively remove particulates, yeast, mould spores and bacteria for use in applications, such as: wineries, breweries, cider, mineral water, soft drinks, food and dairy, culinary steam sterilization and sanitation, powder handling, sparging and dairy.

Our products are manufactured under strict quality process controls and are fully validated and technically supported by our qualified scientists and laboratory services.

Gasification

We are active in a number of areas concerning the generation and safeguarding of energy production.

We are leading innovations in gasification technologies to enable the production of synthetic natural gas (syngas or biogas) as part of alternative clean energy techniques.

Microelectronics

We offer a range of high purity gas filtration products to the semiconductor market, as well as to OEM suppliers in the microelectronics industry.

Applications for this product range include gas safety management, exhaust venting systems, flow control, mass flow control, needle valve replacement, laminar flow diffusing, pressure snubbing and flame arresting.

Nuclear

Working across the field, designing and supplying filtration and other equipment, we offer solutions to the power generation, fuel production, reprocessing, decontamination and decommissioning and waste packaging sectors.

We have the capability to provide everything from a single, specialized, retrofit element to a complete, packaged system to meet the precise needs of a complex application, together with on-site support and a complete after sales service.

Oil and Gas

We offer a variety of engineered gas and liquid filtration systems to the oil, gas, and petrochemical markets.

Our experienced team of project managers, engineers and quality inspectors provide custom engineered solutions for automatic self-cleaning filtration systems, amine filtration systems, FCC-slurry oil systems, flue gas emission solutions, filter replacements parts and metal filter elements.

Pharmaceutical

Our range of filters are used throughout the pharmaceutical manufacturing process.

Applications for these products include sterile filtration for parenteral drugs, sterile air for fermenter feeds, sterile vent filters, solvent extraction, vaccines, ophthalmic solutions, cell culture media and sera products.

Porous Media and OEM Materials

We manufacture an extensive range of porous materials to provide optimum solutions for a wide variety of applications.

These materials can be purchased for OEM products or integrated and packaged into finished products.

Printing

We custom design solutions for inkjet systems, providing full technical support to OEM partners for the conception, engineering and manufacture of solutions for all inkjet system architechtures.

Inprinta® is our inkjet sales division, responsible for the design and manufacture of a wide range of capsule, in-line and last chance filters to offer solutions for inkjet filtration.

inprinta

Process

We supply the process industries with innovative and performance driven filtration equipment (elements, cartridges and vessels).

We provide highly specialized filtration solutions for use throughout the manufacturing process, offering proven filtration solutions for the production of a vast range of chemicals including: nitric acid, maleic anhydride, ether, sulphuric acid, phosphoric acid, sodium chlorate, solvents as well as HDPE and LLDPE.

Transportation

Our experience and comprehensive product offering covers everything from some of the world's largest internal combustion engines to intricate inline hydraulic filters used for the protection of actuators and valves.

Water

We supply a range of filtration and separation products for use throughout the process water industries, from municipal water treatement, irrigation to residential water.

We also manufacture a range of products to eliminate organic, chemical and other debris to meet stringent regulations for drinking water, as well as for the chemical, industrial, pharmaceutical and science markets.

Contact Information:

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

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

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 characterization, environmental testing and analysis.

Quality

Our UK and US manufacturing sites are ISO9001:2015 and AS9100 Rev D approved.

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.

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 optimization
  - Trouble-shooting
  - Pre-inspection review
- **Training:**
  - Integrity testing
  - SIP and CIP methods

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Metal Filter Elements

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

- Aerospace and Defense
- 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.

Sinterflo® F

Cylindrical Sintered Metal Fiber Filter Elements

Manufactured from non-linear metal fibers and sinter-bonded to form a uniform high porosity filter medium, Sinterflo® F demonstrates a significantly low pressure drop, high permeability and excellent dirt holding capacity.

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

With the feasibility to formulate metal fibers to meet specific application requirements, combined with inherent durability, sintered metal fiber 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 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 (process and culinary)
- Pharmaceutical powder recovery
- Polymer melt

Features and Benefits

- Resistant to high temperatures and corrosive environments
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs

Product Code: F - XXX XX - X - X - X X X

e.g. F - 222P - 0020 - 10 - ENF
Sinterflo® F, 222 fitting, pleated, 20µm rating, 10" cartridge, EPDM seal, no guard, fin option.

End Fitting	
226	226 fitting
222	222 fitting
DOE	Double Open Ended
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT

Cartridge Type	
P	Pleated
C	Cylindrical

Micron Rating*	
0003	3µm
0005	5µm
0010	10µm
0020	20µm
0030	30µm
0040	40µm
0050	50µm

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

Seal Material	
E	EPDM
N	Nitrile
S	Silicone
T/P	PTFE
V	Viton®*

Guard / Support Option	
G	Guard
S	Support
N	None

Fin Option	
F	Fin
N	No Fin

** Other standard cartridges with higher micron ratings are available on request.*

***FDA approved seal material.*

Specifications

Materials of Manufacture

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

Element Dimensions*

Diameter: 66mm (2.6") standard

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

** Other diameters and lengths available on request.*

Effective Filtration Area

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

Gaskets and O-Rings*

EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.

** FDA approved seals are available.*

Typical Maximum Differential Pressure* (all lengths)

Normal flow direction: 15bar (218psi)

Reverse flow direction: 3bar (44psi)

** Grade dependant.*

Operating Temperature

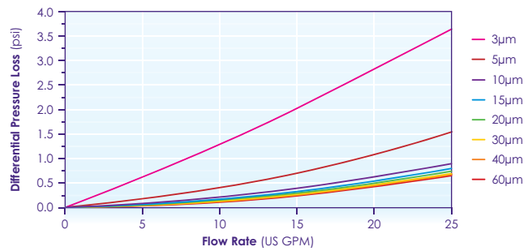
Maximum continuous:
- From -195°C (-319°F) to 340°C (644°F) seal limiting
- From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Sinterflo® F Stainless Steel Media Grades

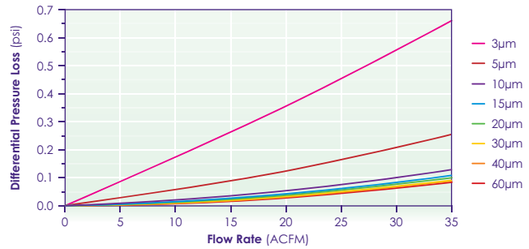
Micron Rating (µm) (micron code)	Liquids (µm)* (99.9% efficiency)	Gases (µm) (99.9% efficiency)
3 (0003)	3	1
5 (0005)	5	1.5
10 (0010)	10	3
15 (0015)	15	4
20 (0020)	20	6
30 (0030)	30	8
40 (0040)	40	11
60 (0060)	60	16

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

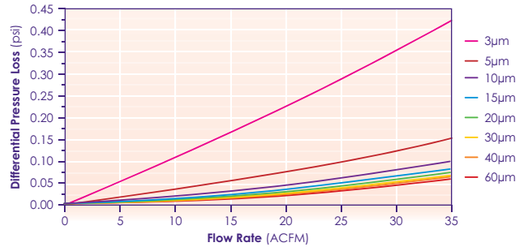
Typical Flow Rates in Water



Typical Flow Rates in Air

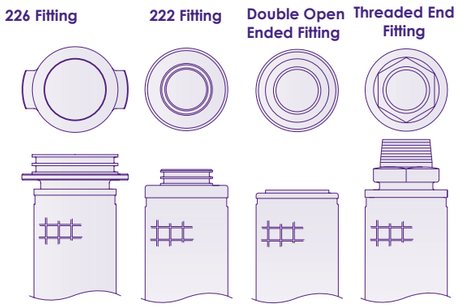


Typical Flow Rates in Steam



** Using a 10 inch element, at ambient temperature.*

Cartridge End Fittings



Contact Information:

UK, New Milton Division
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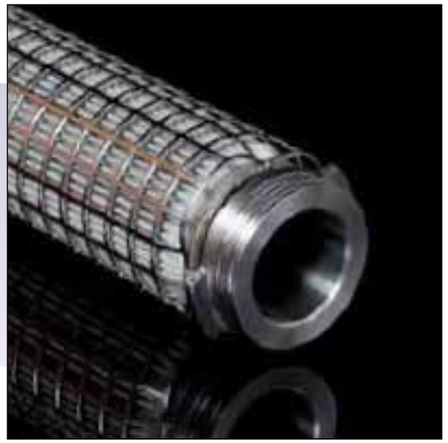
Email: info@porvairfiltration.com

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

Sinterflo® F

Pleated Sintered Metal Fiber Filter Cartridges



Manufactured from non-linear metal fibers and sinter-bonded to form a uniform high porosity filter medium, Sinterflo® F demonstrates a significantly low pressure drop, high permeability and excellent dirt holding capacity.

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

With the feasibility to formulate metal fibers to meet specific application requirements combined with inherent durability, sintered metal fiber 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 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 (process and culinary)
- Pharmaceutical powder recovery
- Polymer melt

Features and Benefits

- Resistant to high temperatures and corrosive environments
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs
- Pleatable structure, offering higher filtration area per cartridge

Product Code: F - xxx xx - x - x - x x x

e.g. F - 222P - 0020 - 10 - ENF
Sinterflo® F, 222 fitting, pleated, 20µm rating, 10" cartridge, EPDM seal, no guard, fin option.

End Fitting	
226	226 fitting
222	222 fitting
DOE	Double Open Ended
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT

Cartridge Type	
P	Pleated
C	Cylindrical

Micron Rating*	
0003	3µm
0005	5µm
0010	10µm
0020	20µm
0030	30µm
0040	40µm
0050	50µm

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

Seal Material	
E	EPDM
N	Nitrile
S	Silicone
T/P	PTFE
V	Viton®*

Guard / Support Option	
G	Guard
S	Support
N	None

Fin Option	
F	Fin
N	No Fin

** Other standard cartridges with higher micron ratings are available on request.*

***FDA approved seal material.*

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

US, Ashland Division
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Email: infoUS@porvairfiltration.com

Specifications

Materials of Manufacture

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

Cartridge Dimensions*

Diameter: 66mm (2.6") standard

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

** Other diameters and lengths available on request.*

Effective Filtration Area

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

Gaskets and O-Rings*

EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.

** FDA approved seals are available.*

Typical Maximum Differential Pressure* (all lengths)

Normal flow direction: 25bar (363psi)

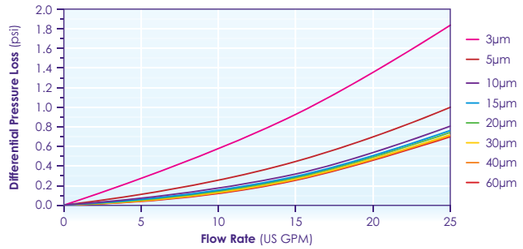
Reverse flow direction: 3bar (44psi)

** Grade dependant.*

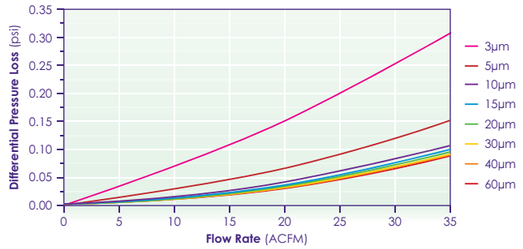
Operating Temperature

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

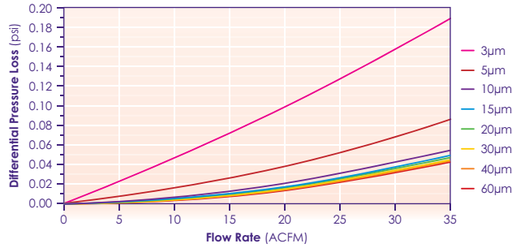
Typical Flow Rates in Water



Typical Flow Rates in Air



Typical Flow Rates in Steam



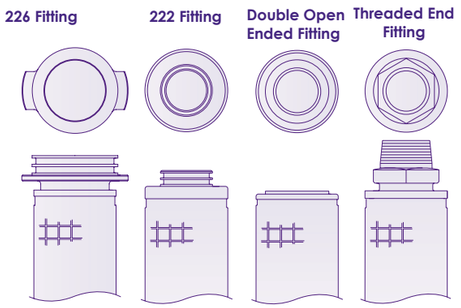
** Using a 10 inch cartridge, at ambient temperature.*

Particle Retention Rating

Micron Rating (micron code)	Liquids Rating* 98.00% (microns)	99.90% (microns)	Gas Rating 99.90% (microns)
0003	2	3	1
0005	3	5	1.5
0010	9	10	3
0015	11	15	4
0020	16	20	6
0030	22	30	8
0040	-	40	11
0060	-	60	16

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

Cartridge End Fittings



Sinterflo® P

Cylindrical Sintered Metal Powder Filter Elements

Sinterflo® P is a robust material manufactured from sinterbonded metal powders. Primarily produced in 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").

Available in 316L stainless steel as standard with other alloys such as 304L stainless steel, 904L stainless steel, 310 stainless steel, Inconel®, Hastelloy® and Monel® on request, as well as sintered powdered bronze.

Typical Applications

- Catalyst recovery and retention
- Polymer melt
- Chemical production
- Steam filtration (process and culinary)
- 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

Product Code: P - XXX XX - X - X - X X X

e.g. P - 222P - 0020 - 10 - ENF
Sinterflo® P, 222 fitting, pleated, 20µm rating, 10" cartridge, EPDM seal, no guard, fin option.

End Fitting	
226	226 fitting
222	222 fitting
DOE	Double Open Ended
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT

Cartridge Type	
P	Pleated
C	Cylindrical

Micron Rating*	
0003	3µm
0005	5µm
0010	10µm
0020	20µm
0030	30µm
0040	40µm
0050	50µm

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

Seal Material	
E	EPDM
N	Nitrile
S	Silicone
T/P	PTFE
V	Viton®*

Guard / Support Option	
G	Guard
S	Support
N	None

Fin Option	
F	Fin
N	No Fin

** Other standard cartridges with higher micron ratings are available on request.*
***FDA approved seal material.*

Specifications

Materials of Manufacture

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

Element Dimensions*

Diameter: 66mm (2.6") standard

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

** Other diameters and lengths available on request.*

Effective Filtration Area

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

Gaskets and O-Rings*

EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.

** FDA approved seals are available.*

Typical Maximum Differential Pressure* (all lengths)

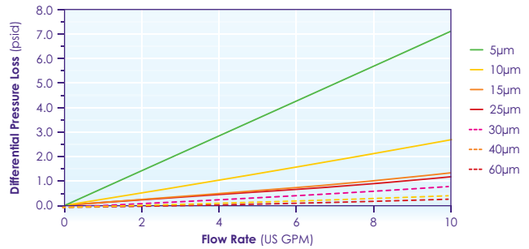
Normal flow direction: 25bar (363psi)
Reverse flow direction: 10bar (145psi)

** Grade dependant.*

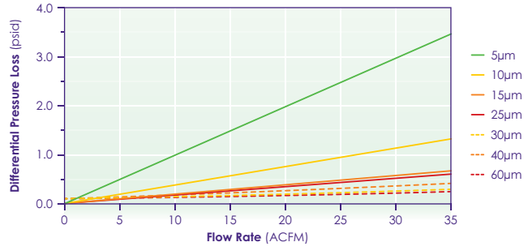
Operating Temperature

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

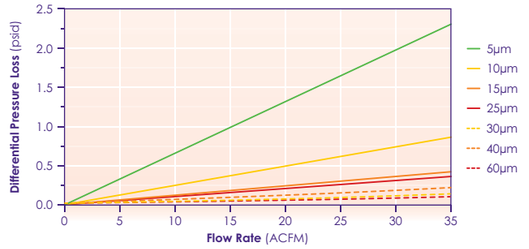
Typical Flow Rates in Water



Typical Flow Rates in Air



Typical Flow Rates in Steam



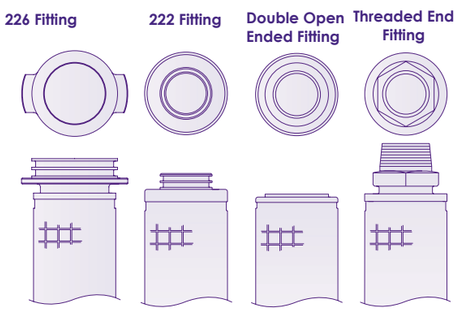
** Using a 10 inch element, at ambient temperature.*

Particle Retention Rating

Micron Rating (micron code)	Liquids Rating* 98.00% (microns)	99.90% (microns)	Gas Rating 99.99% (microns)
0005	4	5	0.7
0010	7	10	0.8
0015	9	15	4
0025	14	25	5
0030	25	30	6
0040	20	40	8
0060	40	60	15

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

Cartridge End Fittings



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Sinterflo® M

Cylindrical Woven Metal Mesh Filter Elements

The Sinterflo® M media demonstrates good permeability, high tensile strength and is available from single wrap designs through to complex multi-layered structures in pleated constructions to optimise the area available. These meshes can be manufactured in diffusion bonded versions to increase performance security of pore shape and size and have the broadest range of pore sizes of any filter media type.

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

Available in 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 (process and culinary)
- Pharmaceutical powder recovery
- Polymer melt

Features and Benefits

- Precise aperture in size and shape
- Good permeability
- Available in the broadest range of pore sizes of any filter media type
- Smooth surface variant preferable for backwash applications

Product Code: M - XXX XX - X - X - X X X

e.g. M - 222P - 0020 - 10 - ENF
Sinterflo® M, 222 fitting, pleated, 20µm rating, 10" cartridge, EPDM seal, no guard, fin option.

End Fitting	
226	226 fitting
222	222 fitting
DOE	Double Open Ended
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT

Cartridge Type	
P	Pleated
C	Cylindrical

Micron Rating*	
0003	3µm
0005	5µm
0010	10µm
0020	20µm
0030	30µm
0040	40µm
0050	50µm

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

Seal Material	
E	EPDM
N	Nitrile
S	Silicone
T/P	PTFE
V	Viton®*

Guard / Support Option	
G	Guard
S	Support
N	None

Fin Option	
F	Fin
N	No Fin

** Other standard cartridges with higher micron ratings are available on request.*
***FDA approved seal material.*

Specifications

Materials of Manufacture

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

Element Dimensions*

Diameter: 66mm (2.6") standard

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

** Other diameters and lengths available on request.*

Effective Filtration Area

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

Gaskets and O-Rings*

EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.

** FDA approved seals are available.*

Typical Maximum Differential Pressure* (all lengths)

Normal flow direction: 15bar (218psi)
Reverse flow direction: 3bar (44psi)

** Grade dependant.*

Operating Temperature

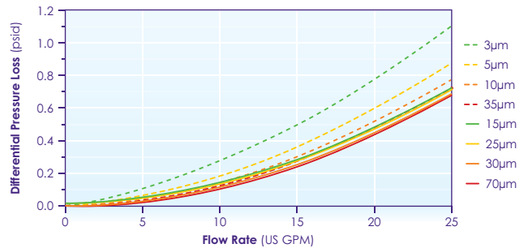
Maximum continuous:
From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Particle Retention Rating

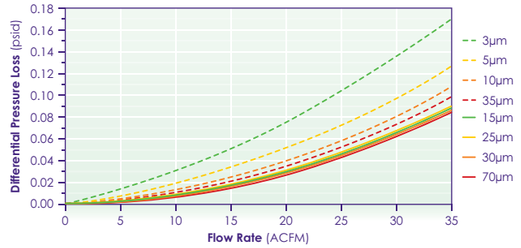
Micron Rating (micron code)	Liquids Rating 98.00% (microns)	99.90%* (microns)	Gas Rating 99.90% (microns)
0003	3	10	2
0005	5	18	13
0010	10	25	18
0015	15	35	25
0025	25	30	20
0030	30	40	30
0035	35	50	45
0070	70	75	60

** Hard spherical particle, maximum particle passed.*

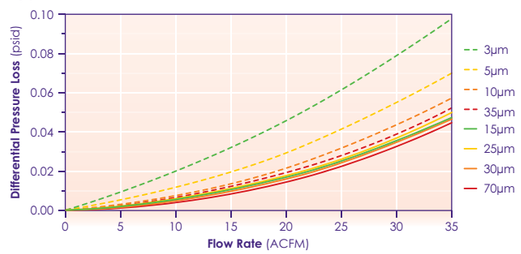
Typical Flow Rates in Water



Typical Flow Rates in Air

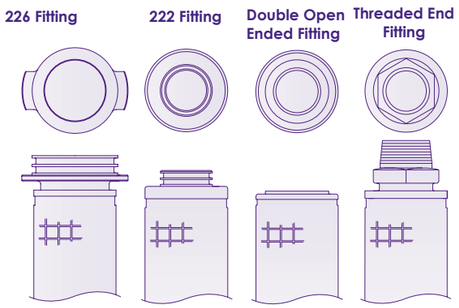


Typical Flow Rates in Steam



** Using a 10 inch element, at ambient temperature.*

Cartridge End Fittings



Contact Information:

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

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

Sinterflo® M

Pleated Woven 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 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 (process and culinary)
- Pharmaceutical powder recovery
- Polymer melt

Features and Benefits

- Precise aperture in size and shape
- All welded, robust construction
- Available in the broadest range of pore sizes of any filter media type
- Smooth surface variant preferable for backwash applications

Product Code: M - XXX XX - X - X - X X X

e.g. M - 222P - 0020 - 10 - ENF
Sinterflo® M, 222 fitting, pleated, 20µm rating, 10" cartridge, EPDM seal, no guard, fin option.

End Fitting	
226	226 fitting
222	222 fitting
DOE	Double Open Ended
NP1	1" NPT
NP5	1.5" NPT
NP2	2" NPT

Cartridge Type	
P	Pleated
C	Cylindrical

Micron Rating*	
0003	3µm
0005	5µm
0010	10µm
0020	20µm
0030	30µm
0040	40µm
0050	50µm

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

Seal Material	
E	EPDM
N	Nitrile
S	Silicone
T/P	PTFE
V	Viton®**

Guard / Support Option	
G	Guard
S	Support
N	None

Fin Option	
F	Fin
N	No Fin

** Other standard cartridges with higher micron ratings are available on request.*
***FDA approved seal material.*

Specifications

Materials of Manufacture

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

Cartridge Dimensions*

Diameter: 66mm (2.6") standard

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

** Other diameters and lengths available on request.*

Effective Filtration Area

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

Gaskets and O-Rings*

EPDM as standard. Chemraz®, nitrile, PTFE, silicone, Viton®, FEP coated EPDM, FEP coated silicone, FEP coated Viton® available on request or by process selection.

** FDA approved seals are available.*

Typical Maximum Differential Pressure* (all lengths)

Normal flow direction: Up to 25bar (363psi)
Reverse flow direction: 3bar (44psi)

** Grade dependant.*

Operating Temperature

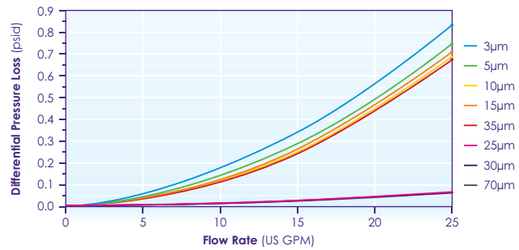
Maximum continuous: From -195°C (-319°F) to 340°C (644°F) seal limiting
From -269°C (-452°F) to 1000°C (1832°F) alloy limiting

Particle Retention Rating

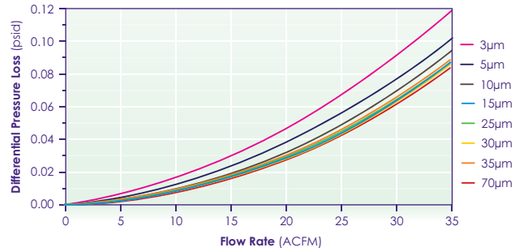
Micron Rating (micron code)	Liquids Rating 98.00% (microns)	99.90%* (microns)	Gas Rating 99.90% (microns)
0003	3	10	2
0005	5	18	13
0010	10	25	18
0015	15	35	25
0025	25	30	20
0030	30	40	30
0035	35	50	45
0070	70	75	60

** Hard spherical particle, maximum particle passed.*

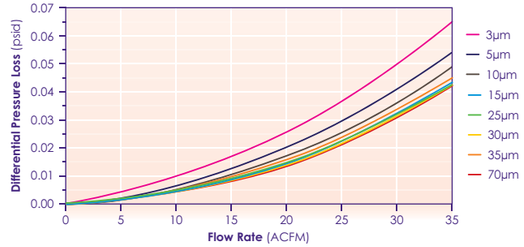
Typical Flow Rates in Water



Typical Flow Rates in Air

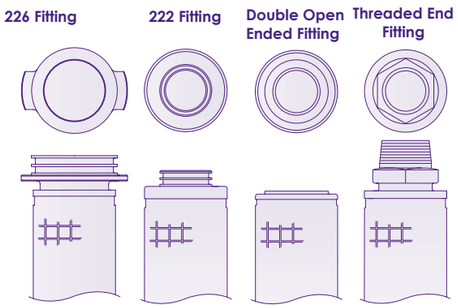


Typical Flow Rates in Steam



** Using a 10 inch cartridge, at ambient temperature.*

Cartridge End Fittings



Contact Information:

UK, New Milton Division
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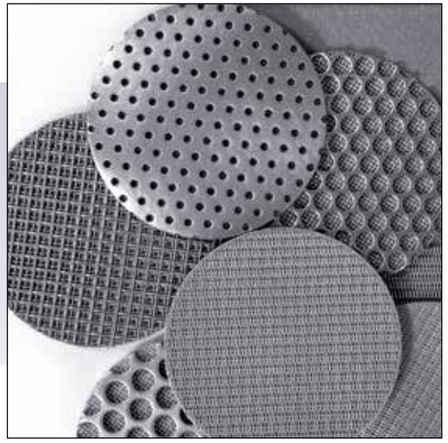
Email: info@porvairfiltration.com

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

Sinterflo® MC

Filter Plate



Sinterflo® MC multi layered, diffusion-bonded stainless steel mesh is available in 316L and other alloys. This precision filter mesh, also known as a porous plate, is available in a range of different pore sizes ranging from 2 micron to 100 micron in diameter.

Porvair Filtration Group fabricate Sinterflo® MC sintered mesh in a standard flat plate format, up to a seamless size of 40" x 60" (1000mm x 1500mm) 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.

Sinterflo® MC Filter Plates are particularly well suited to demanding applications where high operating temperatures up to 1000°F (540°C), increased chemical resistance and/or high abrasion resistance is essential. These applications include flame arrestors, nutsche filter plates and polymer melt filters.

Ordering Information

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

Features and Benefits

- **High operating temperatures**
  Continuously up to 1000°F (540°C) with intermittent operating peaks up to 1200°F (650°C).
- **Robust and self supporting**
  Fabricated shapes usually do not require complex and expensive support structures or joining strips.
- **Application and material versatility**
  Can be easily sheared, formed, punched, and welded using standard manufacturing methods. Cones, tubes, custom shapes or flat panel, up to a seamless panel size of 40" x 60" (1000mm x 1500mm).
- **Enhanced chemical resistance**
  Can be constructed from a wide range of materials including 304 and 316L stainless steel, Hasteloy®, Inconel® and Monel®.
- **Cleanability**
  A wide range of cleaning methods can be used; as a result the media can be sterilised for use within 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.

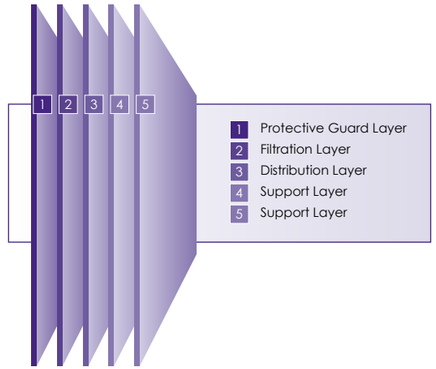
Sinterflo® MC Filter Plate Technical Specifications

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	0.069" (1.75mm)
PSA-0040	40	325 x 325	0.073" (1.85mm)
PSA-0075	75	250 x 250	0.074" (1.88mm)
PSA-0100	100	150 x 150	0.074" (1.88mm)

Flow Versus Pressure Drop

Sinterflo® MC Filter Plate Configuration



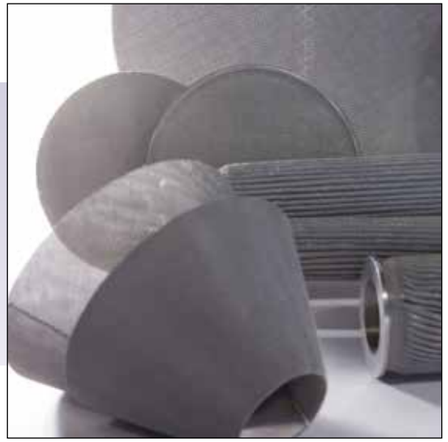
Contact Information:

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

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

Sinterflo® MC

Fluidizing Media



Sinterflo® MC Fluidizing Media, multi layered, diffusion-bonded stainless steel mesh is available in 316L and other alloys. This precision Fluidizing Media is available in both Lo Flow and Hi Flow rates, to meet your application requirements.

Usually available in stock, for immediate delivery, the media is supplied as flat-panels, up to a seamless size of 40" x 60" (1000mm x 1500mm), and in an unlimited size in butt-welded sheets.

Porvair Filtration Group 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 fluidization cones for hopper bottoms.

For fluidizing applications where a tightly controlled efficiency rating is required, Porvair Filtration Group can provide a precision fine filter mesh (down to 2 microns nominal) sintered to the fluidizing media. This is particularly useful in reducing particulate bypass, clogging and when fluidizing gas is not flowing constantly.

Sinterflo® MC fluidizing media is particularly suited to demanding applications where high operating temperatures of up to 1000ºF (540ºC), increased chemical or high abrasion resistance is essential, such as silo discharge cones, fluidized reactors and fluidized dryers.

This material is 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.

Features and Benefits

- **High operating temperatures**
  Continuously up to 1000ºF (540ºC) with intermittent operating peaks up to 1200ºF (650ºC).
- **Robust and self supporting**
  Fabricated shapes usually do not require complex and expensive support structures or joining strips.
- **Application and material versatility**
  Can be easily sheared, formed, punched and welded, using standard manufacturing methods, ino cones, tubes, custom shapes or flat panel, up to a seamless panel size of 40" x 60" (1000mm x 1500mm).
- **Enhanced chemical resistance**
  Can be constructed from a wide range of materials including 304 and 316L stainless steel, Hasteloy®, Inconel® and Monel®.
- **Cleanability**
  A wide range of cleaning methods can be used; as a result the media can be sterilized for use within 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.

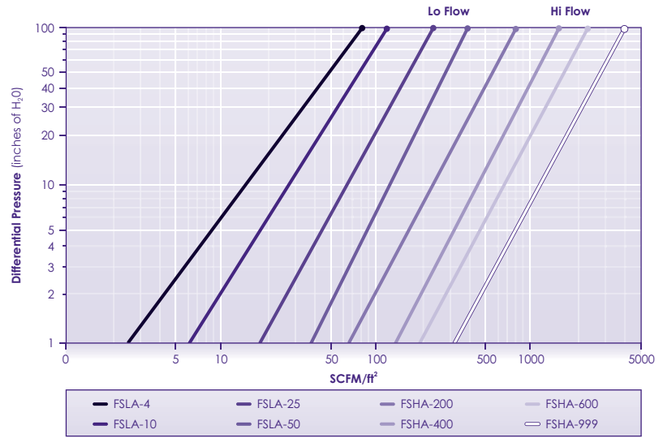
Sinterflo® MC Fluidizing Media Technical Specifications

FSLA Standard Lo Flow Fluidizing Media Grades

Grade	Airflow (SCFM/ft²@2 inches of H_20)	Nominal Thickness in (mm)
FSLA-0005	5	0.054" (1.37mm)
FSLA-0010	10	0.058" (1.47mm)
FSLA-0025	25	0.062" (1.57mm)
FSLA-0050	50	0.065" (1.65mm)

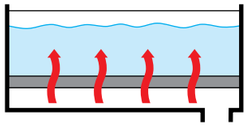
FSHA Standard Hi Flow Fluidizing Media Grades

Grade	Airflow (SCFM/ft²@6 inches of H_20)	Nominal Thickness in (mm)
FSHA-0200	200	0.040" (1.02mm)
FSHA-0400	400	0.047" (1.19mm)
FSHA-0600	600	0.052" (1.32mm)
FSHA-1000	1000	0.064" (1.63mm)



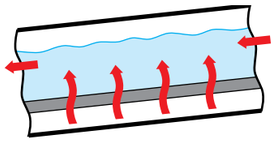
Sinterflo® MC Fluidizing Applications

Fluidized Beds



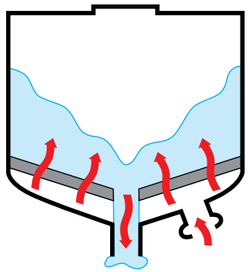
In this application air is pumped through a horizontal or inclined section of Sinterflo® MC media thereby levitating a wide range of materials such as flour, cement, or paint particles. The air in this application can also be used for drying the product or in some cases imparting additives.

Fluidized Gravity Conveyors



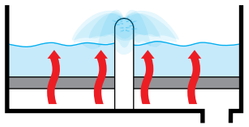
In this application a second flow of air is introduced at a 90 degree angle to the fluidizing media to move the product forward for secondary processing (i.e. roasting) or transportation.

Fluidized Hoppers



When 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



When submerged in a liquid environment the air passed through Sinterflo® MC media will create a fine bubble field that aids more efficient oxygenation. This process is used in the electro-plating, fermentation and water treatment industries.

Contact Information:

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

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

Disposable Filter Elements and 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, mold 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 fiber precursor, paint, parts washing, powder handling and transmission, cosmetics and toiletries.

Microelectronics

Teffil™ and Teffil™ HF are a range of superior pleated PTFE membrane filters with PFA supports.
This 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.

End Cap Adapters

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	1
						O-ring 218	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
P	Code 18 (retro fit)	Flat	None		Open	O-ring 222	2
S	Code 28, fin (3 lugs)	Fin	None		Open	O-ring 222	2
T	223, flat (no lugs)	Flat	None		Open	O-ring 223	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

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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.

Product Code: 1 2 3 4 5 6 7

e.g. PK 045 S 3 A B
PolyKey™, with nominal pore size 0.45µm, standard hard cage, 760mm (30") long, Code 3, silicone seals.

1: Nominal	
PK	PolyKey™
MK	MicroKey™
TN	Tekfil™ N

2: Pore Rating		PK	MK	TN
P1	0.1µm	●	●	
P2	0.2µm	●	●	
P45	0.45µm	●	●	
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	
R	Rinsed
S	Standard Hard Cage
G	GIANT

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

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

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

** SOE: Single Open Ended*
DOE: Double Open Ended

Standard Range

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Effective Filtration Area

4.5ft² (0.4m²) per 10" (254mm) length

Operating Characteristics

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

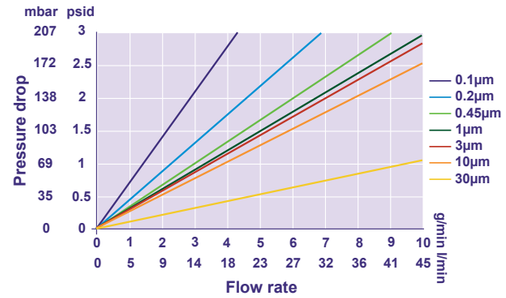
Cartridge Dimensions (Nominal)

Diameter: OD 2.75" (70mm)
2.5" (64mm)
ID 1" (25mm)

Length: 5" (127mm)
10" (254mm)
20" (508mm)
30" (762mm)
40" (1,016mm)

Other lengths available on request.

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.*

Contact Information:

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

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

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.

Product Code: 1 2 3 4 5 6 7

e.g. PK 045 S 3 A B
PolyKey™ , with nominal pore size 0.45µm, standard hard cage, 760mm (30") long, Code 3, silicone seals.

1: Nominal	
PK	PolyKey™
MK	MicroKey™
TN	Tekfil™ N

2: Pore Rating		PK	MK	TN
P1	0.1µm	●	●	
P2	0.2µm	●	●	
P45	0.45µm	●	●	
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	
R	Rinsed
S	Standard Hard Cage
G	GIANT

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

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

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

** SOE: Single Open Ended*
DOE: Double Open Ended

Contact Information:

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

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

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Effective Filtration Area

10ft² (0.9m²) per 10" (254mm) length

Nominal Micron Ratings

0.2, 0.45, 1µ in Polypropylene media

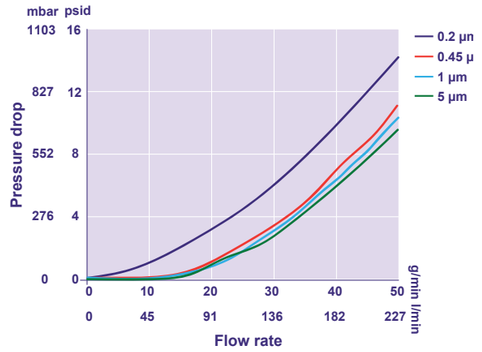
5µ in Polyester media

Cartridge Dimensions

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.*

MicroKey™

Microfiberglass Cartridge Filters

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

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

Product Code: 1 2 3 4 5 6 7

e.g. PK 045 S 3 A B
PolyKey™ , with nominal pore size 0.45µm, standard hard cage, 760mm (30") long, Code 3, silicone seals.

1: Nominal

PK	PolyKey™
MK	MicroKey™
TN	Tekfil™ N

2: Pore Rating

		PK	MK	TN
P1	0.1µm	●	●	
P2	0.2µm	●	●	
P45	0.45µm	●	●	
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

R	Rinsed
S	Standard Hard Cage
G	GIANT

4: Length* (Nominal)

1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

7: Additional

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

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

** SOE: Single Open Ended*
DOE: Double Open Ended

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

Filter mdia: Microfiberglass layered with spun-bonded polyester; 50 micron is 100% polyester

Membrane support: Polypropylene or polyester/Nylon

Nominal Micron Ratings

0.1, 0.2, 0.45, 1, 3, 10, 30, 50

Ratings derived from independent laboratory tests using latex bead suspensions and particle counter readings.

Effective Filtration Area

4ft² per layer per 10" length (0.37m² per 254mm length)

Operating Characteristics

Maximum **Δ**P:
75 psid (5.2 bar) @ 68°F (20°C)
40 psid (2.8 bar) @ 150°F (66°C)

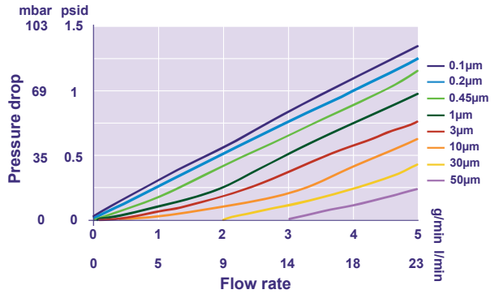
Maximum Operating Temperature:
140°F (60°C) for standard version (S)
200°F (93°C) for high temperature version (H)

Cartridge Dimensions

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

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

Flow / Pressure Drop



Microfiberglass 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)				DOP removal efficiency (%)
	90% (10)	99% (100)	99.9% (1,000)	99.99% (10,000)	
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	---

Contact Information:

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

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

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 and also available in Nylon construction for solvent filtration.

Product Code: 1 2 3 4 5 6 7

e.g. PK 045 S 3 A B
PolyKey™ , with nominal pore size 0.45µm, standard hard cage, 760mm (30") long, Code 3, silicone seals.

1: Nominal

PK	PolyKey™
MK	MicroKey™
TN	Tekfil™ N

2: Pore Rating

		PK	MK	TN
P1	0.1µm	●	●	
P2	0.2µm	●	●	
P45	0.45µm	●	●	
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

R	Rinsed
S	Standard Hard Cage
G	GIANT

4: Length* (Nominal)

1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

7: Additional

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

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

** SOE: Single Open Ended*
DOE: Double Open Ended

Typical Applications

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

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 sanitation**
  Tekfil™ N cartridges are resistant to repeat steam sterilization and hot water cycles.

Specifications

Materials of Manufacture

Filter media:	Polypropylene/nylon
End fittings:	Polypropylene

Cartridge Dimensions (Nominal)

Diameter: 63mm (2.5")
Length: 254mm (10"), 508mm (20"), 762mm (30"), 1016mm (40")

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:

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

Operating Temperature

Maximum continuous: 80°C (176°F)

Extractables

Minimum total extractables.

Clean Water Flow Rates

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

Contact Information:

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

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

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 sterilization and has excellent chemical compatibility characteristics.

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

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Typical Applications

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

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

- Aqueous
- UV
- Solvent
- Dye
- Pigment

Features and Benefits

- Graded multi-layer media
- Guaranteed removal ratings
- Suitable for steam and hot water sanitation
- 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)

Sterilization

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

Extractables

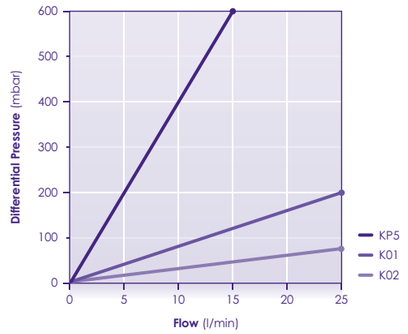
Minimum total extractables. Please refer to the Klearfil™ Validation Guide.

Integrity Testing

Klearfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. 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.



Contact Information:

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Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

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

Microfil™

Absolute Rated Pleated Glass Fiber Cartridge Filters

A range of absolute rated cartridge filters are manufactured, featuring the latest developments in borosilicate glass fiber filter media technology; Microfil™ cartridges are constructed from robust glass fiber 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. The polypropylene pre-filtration layer, combined with a high dirt capacity glass fiber media 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 sterilization 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.

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

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Removal Rating	Effective Filtration Area (each 254mm (10") module)
0.5, 0.8, 1.0, 2.0 and 5.0µm	0.4m² (4.4ft²)

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)

Sterilization

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

Extractables

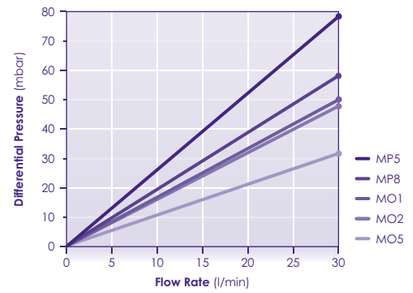
Minimum total extractables. Please refer to the Microfil™ Validation Guide.

Integrity Testing

Microfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. 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.



Contact Information:

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

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

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 maximizing dirt holding capacity and minimizing 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.

Thermal bonded construction eliminates the requirement for adhesives, maintaining product integrity in demanding applications and minimizing the level of extractables in the filtrate. All the materials conform to the relevant requirements of FDA CFR21 part 117.

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Typical Applications

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

Features and Benefits

- Absolute micron ratings to ensure consistent, repeatable performance
- Inside to out flow ensures that contamination is collected inside the filter cartridge for easy disposal
- Large surface area, typically 5 meters 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 fiber filter media, thermally bonded, means wide chemical compatibility and a minimum level of extractables
- Suitable for steam sterilization, autoclaving and hot water sanitation
- Available in 20", 40" and 60" lengths to retrofit into most existing installations

Specifications

Materials of Manufacture

Filter medium	Glass fiber
Drainage layers:	Polypropylene
Support mesh:	Polypropylene
Outer core:	Polypropylene
End caps:	Polypropylene

Cartridge Dimensions

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

Pore Sizes

0.5µm, 1.0µm, 5.0µm and 10µm

Effective Filtration Area

Absolute Rating	Effective Filtration Area (each 1016mm (40") module)
0.45, 1, 5, 10, 25, 50 0.65 and 100µm	5m² (53.8ft²)

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)

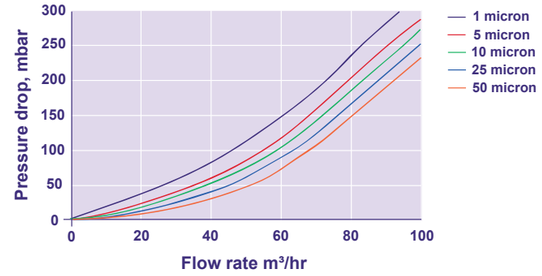
Sanitation

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 Fiber Media:



Contact Information:

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

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

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 sterilization and have excellent chemical compatibility characteristics.

Typical Applications

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

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Features and Benefits

- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitation
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

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

Cartridge Treatment

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

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0 bar (87psi)
80°C (176°F):	4.0 bar (58psi)
100°C (212°F):	3.0 bar (44psi)
120°C (248°F):	2.0 bar (29psi)
125°C (257°F):	1.5 bar (22psi)

Reverse flow direction at:

20°C (68°F):	2.1 bar (30lb/in²)
80°C (176°F):	1.0 bar (15lb/in²)
100°C (212°F):	0.5 bar (7lb/in²)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilization

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

Extractables

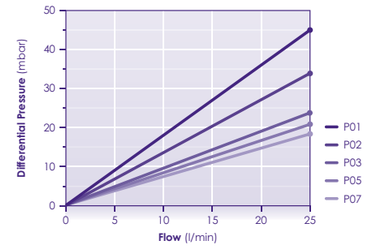
Minimum total extractables. Please refer to the Polyfil™ II Validation Guide.

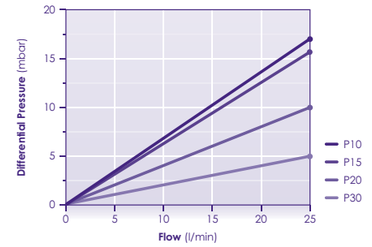
Integrity Testing

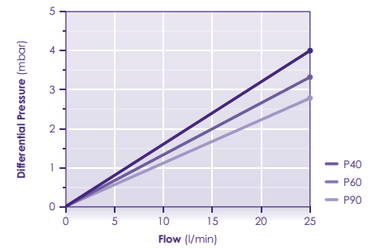
Polyfil™ II filter cartridges are batch tested for integrity using the Bubble Point Test. Please contact us for procedural details.

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.







Contact Information:

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

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

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 maximizing dirt holding capacity and minimizing 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.

Thermal bonded construction eliminates the requirement for adhesives, maintaining product integrity in demanding applications and minimizing 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.

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Typical Applications

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

Features and Benefits

- Absolute micron ratings to ensure consistent, repeatable performance
- Inside to out flow ensures that contamination is collected inside the filter cartridge, for easy disposal
- Our Polyfil™ WF filters meet the requirements for food contact as detailed in EC 1935/2004
- Large surface area, typically 5 meters 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 sterilization, autoclaving and hot water sanitation
- 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)

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 1016mm (40") module)
0.45, 1, 5, 10, 25, 50 0.65 and 100µm	5m² (53.8ft²)

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

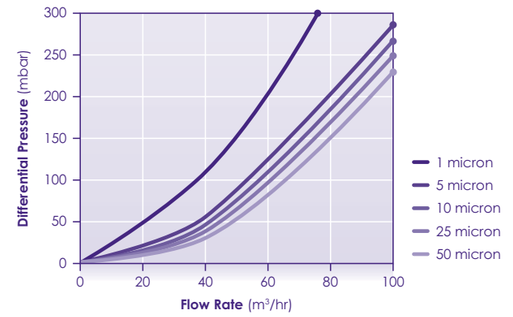
- Typical clean water flow rate:

  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:



Contact Information:

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

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

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.

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

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

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 sanitation**
  Tekfil™ A cartridges are resistant to repeat steam sterilization 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 adapters.

Maximum Differential Pressure

Normal flow direction at:

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

Operating Temperature

Maximum continuous: 80°C (176°F)

Extractables

Minimum total extractables.

Clean Water Flow Rates

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

Contact Information:

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

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

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 maximizing dirt holding capacity and minimizing 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 minimizing the level of extractables in the filtrate. All the materials conform to the relevant requirements of FDA CFR21 part 117.

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

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

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

Materials of Manufacture

Filter media: Polypropylene or nylon

Cartridge Dimensions (Nominal)

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

Micron Rating

5µm, 10µm, 25µm, 40µm, 75µm and 100µm

Effective Filtration Area

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

Recommended Operating Conditions

	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)

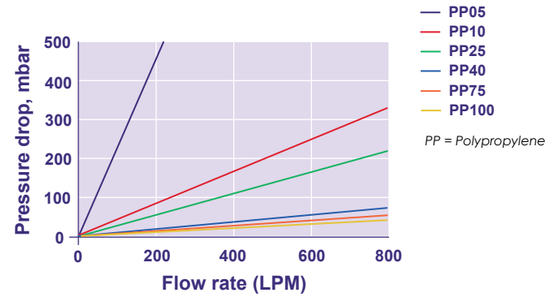
Clean Water Flow Rates

- Typical clean water flow rate:

  A 1016mm (40") MicrofilTM 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.



PP = Polypropylene

Contact Information:

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

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

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 fiber 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 fiber 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

Specifications

Materials of Manufacture

Filter media:	Polypropylene
End fittings:	Polypropylene

Cartridge Dimensions (Nominal)

Diameter: 63mm (2.5")
Length: 254mm (10"), 508mm (20"), 762mm (30"), 1016mm (40")

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:
20°C (68°F): 5 bar (73psi)

Recommended Changeout Pressure

2.5 bar (36psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Extractables

Minimum total extractables.

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Contact Information:

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

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

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 sanitizing 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.

Product Code: 1 2 3 4 5 6 7

e.g. K 01 S 2 B B P
Klearfil™, 1µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Pre-Filter	
K	Klearfil™
M	Microfil™
P	Polyfil™ II
TA	Tekfil™ A
TGV	Tekfil™ HV
R	Trapfil™

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
60	60µm
75	75µm
90	90µm
105	105µm

3: Version	
R	Rinsed
S	Standard Hard Cage
W**	Wide format

4: Length* (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

** For the Carbofil™ filter select the 05 (5µm) option only.Polyfil™ II can go up to 150µm.*

*** Only available in Microfil™, Polyfil™ II and Tekfil™ Absolute.*

**** 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).*

† 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.

Typical Applications

- Stabilization
- Clarification

Features and Benefits

- Backflushing
- Chemical regeneration
- Suitable for steam and hot water sanitation
- Guaranteed removal ratings
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Removal Rating	Effective Filtration Area (each 254mm (10") module)
5, 10 and 15µm	0.53m² (5.7ft²)

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)

Sterilization

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

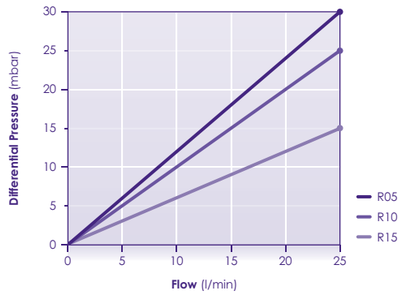
Minimum total extractables. Please refer to the Trapfil™ Validation Guide.

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.



Contact Information:

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

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

Microfil™ Junior

Absolute Rated Pleated Glass Fiber 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 fiber filter media technology, Microfil™ Junior cartridges are constructed from robust glass fiber 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 fiber 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 sterilization 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.

The Junior range is available in three formats:

- J-style, a single open-ended element with a single internal O-ring seal on the downstream end cap
- L-style with double external O-ring and four locking tabs
- S-style, a single open-ended element incorporating an integral flange on the downstream end cap.

Product Code: 1 2 3 4 — *e.g. JB 20 50 B*
Biofil™, J-Style, 0.2µm, 136mm (5") long, silicone seal.

1: J-Style

JB	Biofil™
JF	Fluorofil™
JM	Microfil™
JP	Polyfil™

S-Style

SB	Biofil™
SF	Fluorofil™
SM	Microfil™
SP	Polyfil™

L-Style

LB	Biofil™
LF	Fluorofil™
LM	Microfil™
LP	Polyfil™

2: Pore rating

20	0.2µm
45	0.45µm
P5	0.5µm
P8	0.8µm
01	1µm
02	2µm
05	5µm

3: Length

P	Pleated
C	Cylindrical

4: Options Threaded

B	1/2" BSP
X	1/4" BSP

Seals (J Style)

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

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Removal Rating	Effective Filtration Area (for 5" cartridge)
0.5, 0.8, 1.0, 2.0 and 5.0µm	0.15m² (1.6ft²)

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)

Sterilization

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

Extractables

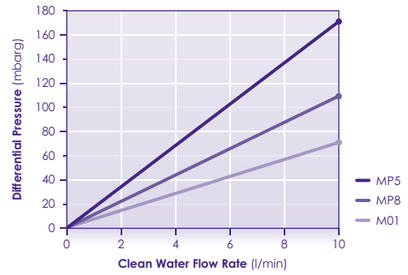
Minimum total extractables. Please refer to the Microfil™ Validation Guide.

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.



Contact Information:

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

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

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 sterilization 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.

The Junior range is available in three formats:

- J-style, a single open-ended element with a single internal O-ring seal on the downstream end cap
- L-style with double external O-ring and four locking tabs
- S-style, a single open-ended element incorporating an integral flange on the downstream end cap.

Product Code: 1 2 3 4

e.g. JB 20 50 B
Biofil™, J-Style, 0.2µm, 136mm (5") long, silicone seal.

1: J-Style

JB	Biofil™
JF	Fluorofil™
JM	Microfil™
JP	Polyfil™

S-Style

SB	Biofil™
SF	Fluorofil™
SM	Microfil™
SP	Polyfil™

L-Style

LB	Biofil™
LF	Fluorofil™
LM	Microfil™
LP	Polyfil™

2: Pore rating

20	0.2µm
45	0.45µm
P5	0.5µm
P8	0.8µm
01	1µm
02	2µm
05	5µm

3: Length

P	Pleated
C	Cylindrical

4: Options Threaded

B	1/2" BSP
X	1/4" BSP

Seals (J Style)

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

Typical Applications

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

Features and Benefits

- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitation
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

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

Cartridge Treatment

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

Gaskets and O-Rings

J-style: Silicone (other materials are available on request)

S-style: Not supplied

L-style: Silicone (other materials are available on request)

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0 bar (87psi)
80°C (176°F):	4.0 bar (58psi)
100°C (212°F):	3.0 bar (44psi)
120°C (248°F):	2.0 bar (29psi)
125°C (257°F):	1.5 bar (22psi)

Reverse flow direction at:

20°C (68°F):	2.1 bar (30psi)
80°C (176°F):	1.0 bar (15psi)
100°C (212°F):	0.5 bar (7psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilization

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

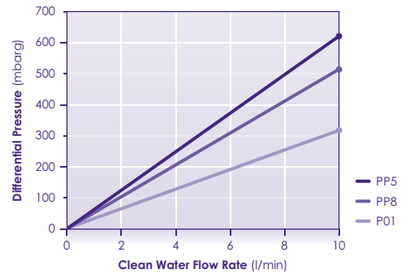
Minimum total extractables. Please refer to the Polyfil™ II Validation Guide.

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.



Contact Information:

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

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

Biofil™II

Polyethersulphone Membrane Cartridge Filters

A range of microbially rated cartridge filters are manufactured featuring the latest developments in membrane technology. Biofil™ II cartridges are based on a naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the polyethersulphone membrane provides a high strength, long life cartridge of consistently precise microbial retention.

Biofil™ II cartridges offer high flow rates and low differential pressures, a feature common to polyethersulphone membranes.

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

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.04, 0.1, 0.2, 0.45, 0.65 and 1.2µm	0.69m² (7.4ft²)

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)

Sterilization

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

Extractables

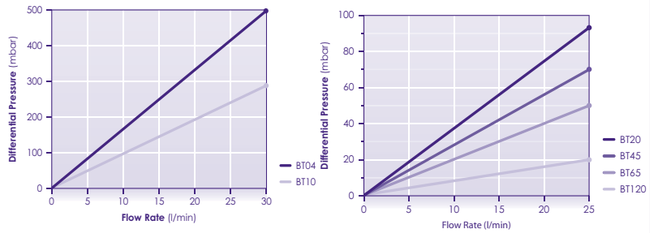
Minimum total extractables. Please refer to the Biofil™ II Validation Guide.

Integrity Testing

Each Biofil™ II module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural detail.

Clean Water Flow Rates

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



Contact Information:

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

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

Biofil™ Plus

Double Layer Polyethersulphone Membrane Cartridge Filters

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

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

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

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

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Typical Applications

- Biopharmaceuticals
- Fermentation
- Ophthalmic solutions
- APIs
- LVPs
- Beverages
- Pure water supply

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

Diameter: 70mm (2.8")

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.2 and 0.45µm	0.48m² (5.2ft²)

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)

Sterilization

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

Extractables

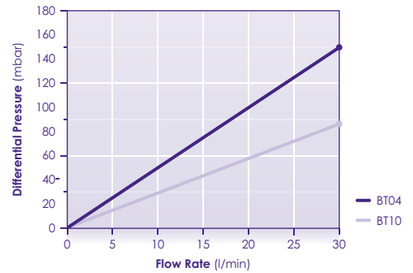
Minimum total extractables. Please refer to the Biofil™ Plus Validation Guide.

Integrity Testing

Each Biofil™ Plus module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural details.

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.



Contact Information:

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

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

Chemifil™

Polypropylene Membrane Cartridge Filters

Chemifil™ cartridges are manufactured using a polypropylene membrane of uniform thickness and high voids, with a homogeneous structure and controlled pore size.

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

For solvent and aggressive chemical filtration applications, Chemifil™ cartridges offer a wide range of chemical compatibility

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

Typical Applications

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

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Features and Benefits

- Guaranteed microbial ratings
- Steam sterilization
- Cartridge integrity and low TOC levels
- Solvents and aggressive chemicals
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.1 and 0.2µm	0.66m² (7.1ft²)

Cartridge Treatment

Standard: Cleaned and flushed with pyrogen-free water

Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0bar (87psi)
80°C (176°F):	4.0bar (58psi)
100°C (212°F):	3.0bar (44psi)
120°C (248°F):	2.0bar (29psi)
125°C (257°F):	1.5bar (22psi)

Reverse flow direction at:

20°C (68°F):	2.1bar (30psi)
80°C (176°F):	1.0bar (15psi)
100°C (212°F):	0.5bar (7psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilization

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

Extractables

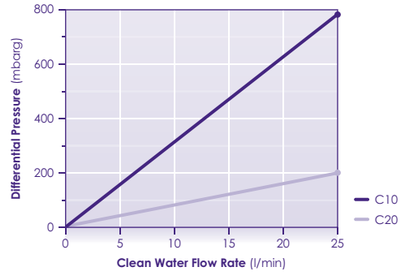
Minimum total extractables. Please refer to the Chemifil™ Validation Guide.

Integrity Testing

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

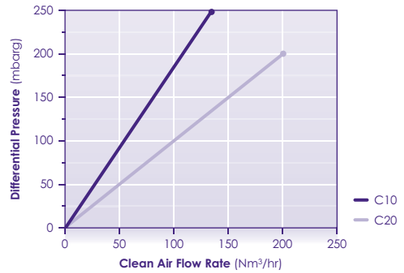
Clean Water Flow Rates

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



Gas Flow Rates

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



Contact Information:

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

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

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 sterilizing 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 and vents
- Fine chemicals and solvents
- Photoresists and developers
- Pure water supply systems
- Bacterial spores and viruses
- Steam sterilization

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Features and Benefits

- Guaranteed microbial ratings
- Cartridge integrity and low TOC levels
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Microbial Rating (in liquids)	Effective Filtration Area (each 254mm (10") module)
0.02, 0.1, 0.2 and 0.45µm	0.73m² (7.8ft²)

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)

Sterilization

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

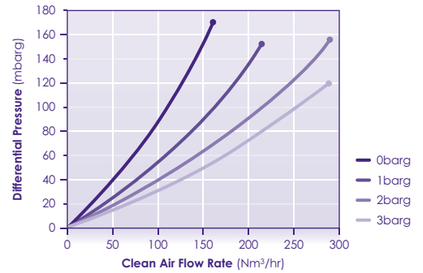
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

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.

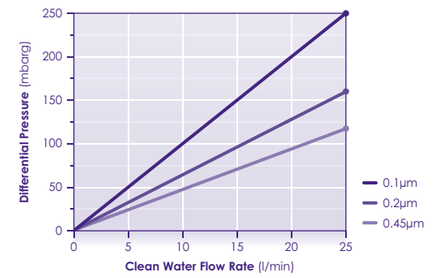
Gas Flow Rates

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



Clean Water Flow Rates

- 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.



Contact Information:

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

US, Ashland Division
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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 sterilizing 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.

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Typical Applications

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

Features and Benefits

- Guaranteed microbial ratings
- Bacterial spores and viruses
- Mechanical strength
- Steam sterilization
- Cartridge integrity and low TOC levels
- Full traceability
- Controlled manufacturing environment

Specifications

Materials of Manufacture

Filter membrane:	ePTFE
Membrane support:	Polypropylene
Irrigation mesh (support):	Polypropylene
Drainage layer:	Polypropylene
Inner core:	316L stainless steel
Outer support:	Polypropylene
End fittings:	Polypropylene
Sealing:	Fusion bonding

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.2µm	0.8m² (8.6ft²)

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)

Sterilization

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

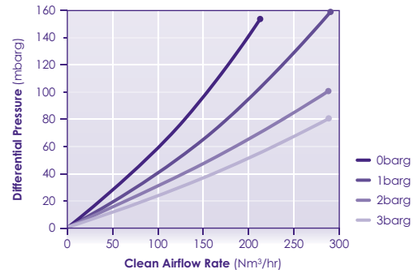
Minimum total extractables. Please refer to the Fluorofil™ Plus Validation Guide.

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.



Contact Information:

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

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

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.

Typical Applications

- Carbon fines removal
- Fine chemical and solvents
- Photoresists and developers

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

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

Cartridge Treatment

Standard: Cleaned and flushed, without further treatment

Rinsed: Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0bar (87psi)
80°C (176°F):	4.0bar (58psi)
100°C (212°F):	3.0bar (44psi)

Reverse flow direction at:

20°C (68°F):	2.1bar (30psi)
80°C (176°F):	1.0bar (15psi)
100°C (212°F):	0.5bar (7psi)

Operating Temperature (in water)

Maximum continuous: 80°C (176°F)

Extractables

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

Integrity Testing

Each Fluorofil™ F100 module of every cartridge is individually integrity tested using the Reverse Bubble Point Test, which correlates to the particle retention rating determined by the modified OSU F-2 Single Pass Challenge Test. Non-destructive integrity testing, using the Reverse Bubble Point Test, can be performed by the end user. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 254mm (10") Fluorofil™ F100 single cartridge with 1.0µm particle retention rating exhibits the flow-**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.

Contact Information:

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

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

Hydrofil™

Nylon 6.6 Membrane Cartridge Filters

Hydrofil™ microbially rated cartridge filters are based on a naturally hydrophilic nylon membrane. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the nylon membrane provides a high strength, long-life cartridge of consistently precise particle retention across a wide range of particle sizes.

Careful media selection ensures that Hydrofil™ cartridges are very suited to critical particle control down to 0.01 micron ratings. These cartridges offer high flow rates and low differential pressures, a feature common to nylon membranes.

Hydrofil™ cartridges benefit from high protein binding characteristics of nylon membranes. They are highly resistant to integrity failure caused by steam sterilization and have excellent chemical compatibility characteristics. They are ideal for use in ultra pure water supply systems (18MΩ.cm).

They provide a combination of features and benefits previously unavailable from cartridges based on PVDF, mixed esters of cellulose or polysulphone membranes.

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Typical Applications

- Biopharmaceuticals
- Electronics and semiconductors
- Fine chemicals
- Beverages
- Pure water supply
- Sterile filtration and clarification

Features and Benefits

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

Specifications

Materials of Manufacture

Filter membrane:	Nylon 6,6
Membrane support:	Polypropylene
Irrigation mesh (support):	Polypropylene
Drainage layer:	Polypropylene
Inner core:	Polypropylene
Outer support:	Polypropylene
End fittings:	Polypropylene
Support ring:	Stainless steel

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.1, 0.2 and 0.45µm	0.63m² (6.8ft²)

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)

Sterilization

In situ steam 40 x 25 min cycles at 121°C (250°F).

Extractables

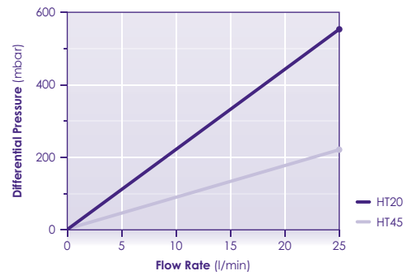
Minimum total extractables. Please refer to the Hydrofil™ Validation Guide.

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.



Contact Information:

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

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

Hydrofil™Plus

Dual Nylon 6.6 Layer Membrane Cartridge Filters

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

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

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

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane	
BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating	
02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version	
L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)	
1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

Diameter: 70mm (2.8")

Length:

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.2µm	0.63m² (6.8ft²)

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)

Sterilization

In situ steam 40 x 25 min cycles at 121°C (250°F).

Extractables

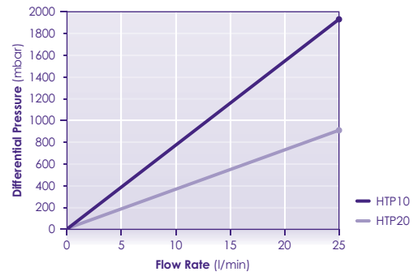
Minimum total extractables. Please refer to the Hydrofil™ Validation Guide.

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.



Contact Information:

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

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

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
- Photovoltaic
- 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

e.g. PART NUMBER: FL-P5-S-04-A-K

Series	
FL	Teffil™

Pore rating (µm)	
P5	0.05
10	0.1
20	0.2

Version	
S	Standard

Length	
04	102mm (4")
1	250mm (10")
2	510mm (20")

Adaptor	
A	Code 3

**Other options available on request.*

Seals	
A	EPDM
B	Silicone
C	Viton®
K	Kalrez/FKM

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")

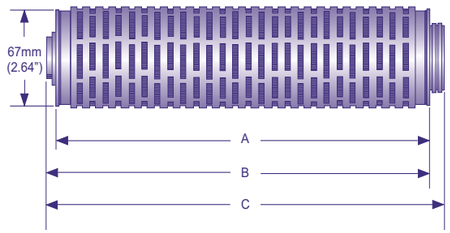
Pore Size Rating

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)

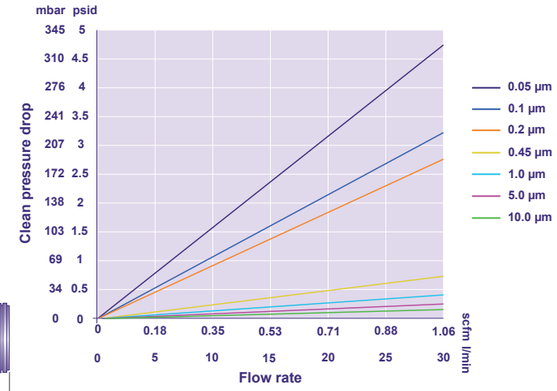
Maximum Operating Temperature

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

Contact Information:

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

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

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.

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

e.g. PART NUMBER: FL-P5-H-04-A-A

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	Kalrez/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)

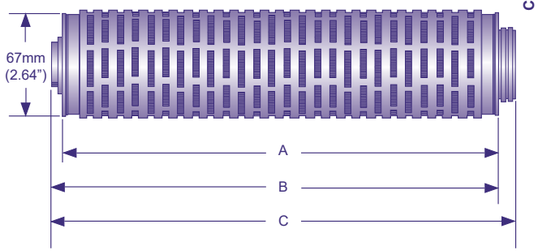
Diameter: 67mm (2.6")
Length: 254mm (10")

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)

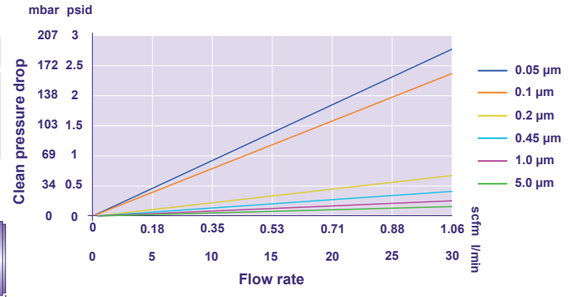
Operating Temperature

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

Contact Information:

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

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

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 stabilization. Vinofil™ cartridges utilize a double layer of naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure, providing graded filtration throughout its depth, resulting in higher throughputs and long service life.

Careful media selection ensures that Vinofil™ cartridges are suited to critical particle control down to 0.2 micron ratings.

Vinofil™ cartridges benefit from the low binding characteristics of polyethersulphone membranes. They are highly resistant to integrity failure caused by steam sterilization and have excellent compatibility with CIP sterilizing agents. As a consequence, Vinofil™ cartridges provide a combination of features and benefits previously unavailable from cartridges based on PVDF, nylon, mixed esters of cellulose or polysulphone membranes. They are suitable for a range of applications including sterile filtration, stabilization and the clarification of a wide range of beverages.

Product Code: 1 2 3 4 5 6 7

e.g. BT 20 S 2 B B P
Biofil™, 0.2µm, Standard hard cage, 510mm (20") long, Code 7, silicone seals, pharmaceutical grade.

1: Membrane

BT	Biofil™ II
BTP	Biofil™ Plus
C	Chemifil™
F*	Fluorofil™
HT	Hydrofil™
HTP	Hydrofil™ Plus
VT	Vinofil™

2: Pore rating

02	0.02µm
04	0.04µm
10	0.1µm
20	0.2µm
45	0.45µm
65	0.65µm
100	1.0µm
120	1.2µm

3: Version

L**	Economy
R	Rinsed
S	Standard
W***	Stainless Steel Core

4: Length (Nominal)

1	10" (250mm)
2	20" (510mm)
3	30" (760mm)
4	40" (1020mm)
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

* *Includes the Fluorofil™, Fluorofil™ Plus and Fluorofil™ F100.*

** *Biofil™ only.*

*** *Fluorofil™ Plus only.*

† *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).*

†† *Porvair pharmaceutical-grade filters are designed for use in cGMP manufacturing, processing or packaging facilities for injectable drug products and comply with the Federal Drug Administration's regulations CFR Title 21, parts 211.72 'Filters' and 210.3 (b) (6), and United States Pharmacopeia 788 'Particulate Matter in Injections'. These products contain a stainless steel insert.*

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

Diameter: 70mm (2.8")

Length:

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (each 254mm (10") module)
0.2, 0.45 and 0.65µm	0.48m² (5.2ft²)

Cartridge Treatment

Standard: Cleaned and flushed with pyrogen-free water

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0bar (87psi)
80°C (176°F):	4.0bar (58psi)
100°C (212°F):	3.0bar (44psi)
120°C (248°F):	2.0bar (29psi)

Reverse flow direction at:

20°C (68°F):	2.1bar (30psi)
80°C (176°F):	1.0bar (15psi)
100°C (212°F):	0.5bar (7psi)

Operating Temperature

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

Sterilization

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

Extractables

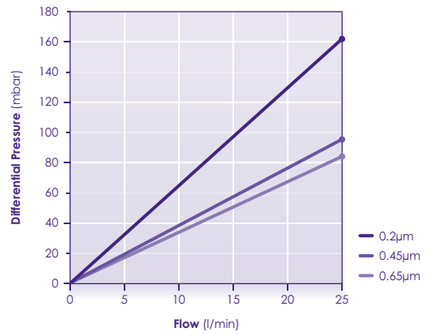
Minimum total extractables. Please refer to the Vinofil™ Validation Guide.

Integrity Testing

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



Contact Information:

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Email: info@porvairfiltration.com

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

Biofil™ Junior

Polyethersulphone Membrane Cartridge Filters for Small-Scale Applications

A range of microbially rated cartridge filters are designed for retrofitting into existing junior-style housings. Biofil™ Junior cartridges are based on a naturally hydrophilic polyethersulphone membrane with a mirrored asymmetric pore structure. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques, the polyethersulphone membrane provides a high strength, long life cartridge of consistently precise microbial retention.

Careful media selection ensures that Biofil™ Junior cartridges are 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 polyethersulphone membranes.

The Junior range is available in three formats:

- J-style, a single open-ended element with a single internal O-ring seal on the downstream end cap
- L-style with double external O-ring and four locking tabs
- S-style, a single open-ended element incorporating an integral flange on the downstream end cap.

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

Product Code: 1 2 3 4

e.g. JB 20 50 B
Biofil™, J-Style, 0.2µm, 136mm (5") long, silicone seal.

1: J-Style

JB	Biofil™
JF	Fluorofil™
JM	Microfil™
JP	Polyfil™

S-Style

SB	Biofil™
SF	Fluorofil™
SM	Microfil™
SP	Polyfil™

L-Style

LB	Biofil™
LF	Fluorofil™
LM	Microfil™
LP	Polyfil™

2: Pore rating

20	0.2µm
45	0.45µm
P5	0.5µm
P8	0.8µm
01	1µm
02	2µm
05	5µm

3: Length

P	Pleated
C	Cylindrical

4: Options Threaded

B	1/2" BSP
X	1/4" BSP

Seals (J 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

Features and Benefits

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

Specifications

Materials of Manufacture

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

Cartridge Dimensions (Nominal)

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

Effective Filtration Area

Absolute Microbial Rating	Effective Filtration Area (for each 5" cartridge)
0.1, 0.2, 0.45, 0.65 and 1.2µm	0.19m² (2.05ft²)

Cartridge Treatment

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

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)

Sterilization

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

Extractables

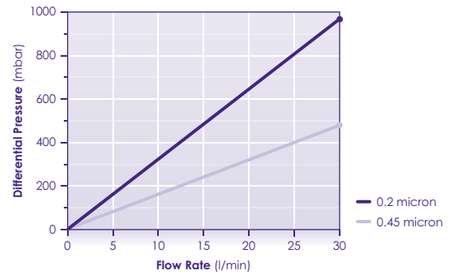
Minimum total extractables. Please refer to the Biofil™ II Validation Guide.

Integrity Testing

Each Biofil™ Junior module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests. Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Please contact us for procedural details.

Clean Water Flow Rates

- Typical clean water flow rate:
  A 136mm (5") Biofil™ 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.



Contact Information:

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

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

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.

The Junior range is available in three formats:

- J-style, a single open-ended element with a single internal O-ring seal on the downstream end cap
- L-style with double external O-ring and four locking tabs
- S-style, a single open-ended element incorporating an integral flange on the downstream end cap.

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

Features and Benefits

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

Product Code: 1 | 2 | 3 | 4

e.g. JB 20 50 B
Biofil™, J-Style, 0.2µm, 136mm (5") long, silicone seal.

1: J-Style

JB	Biofil™
JF	Fluorofil™
JM	Microfil™
JP	Polyfil™

S-Style

SB	Biofil™
SF	Fluorofil™
SM	Microfil™
SP	Polyfil™

L-Style

LB	Biofil™
LF	Fluorofil™
LM	Microfil™
LP	Polyfil™

2: Pore rating

20	0.2µm
45	0.45µm
P5	0.5µm
P8	0.8µm
01	1µm
02	2µm
05	5µm

3: Length

P	Pleated
C	Cylindrical

4: Options Threaded

B	1/2" BSP
X	1/4" BSP

Seals (J 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)

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

Effective Filtration Area

Absolute Microbial Rating (in liquids)	Effective Filtration Area (for 5" cartridge)
0.2µm	0.19m² (2.05ft²)

Cartridge Treatment

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

Gaskets and O-Rings

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

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0bar (87psi)
80°C (176°F):	4.0bar (58psi)
100°C (212°F):	3.0bar (44psi)
120°C (248°F):	2.0bar (29psi)
125°C (257°F):	1.5bar (22psi)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilization

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

Extractables

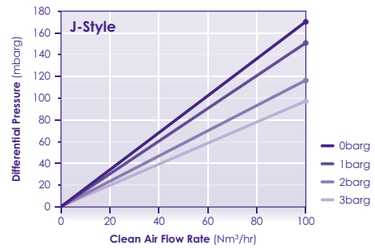
Minimum total extractables. Please refer to the Fluorofil™ Validation Guide.

Integrity Testing

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

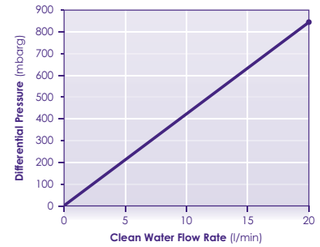
Gas Flow Rates

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



Clean Water Flow Rates

- Typical clean water flow rate:
  A 136mm (5") Fluorofil™ Junior cartridge (J-style) with 0.2µm microbial rating exhibits the flow-**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.



Contact Information:

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Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

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

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.

Compfil™DF

Compressed Air Depth Filter for Sterile Process Air and Gases

The Compfil™ DF filter is available as a wound depth or pleated depth filter, with end caps, inner and outer guards made from stainless steel. Consisting of a 3 dimensional borosilicate depth media, the DF achieves a void volume of 95%, ensuring a high containment capacity at high flow rates and low differential pressure. During operation, the filter achieves a retention rate of >99.99998% related to 0.01 µm. This is available i

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.

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction		Connection	
DF	0310	P	Pleated depth	B	Code 7
	0410	C	Cylindrical / wound	K	Code 2
	0420			M	DOE
	0520			S	3-Lug
	0525			U	Plug Connections
	0725				
	0730				
	1030				
	0530				
	2030				
	3030				
	3050				

Typical Applications

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

Features and Benefits

- 100 sterilization cycles guaranteed
- Robust construction
- Non fiber 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)

Sterilization

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

In-line sterilization 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

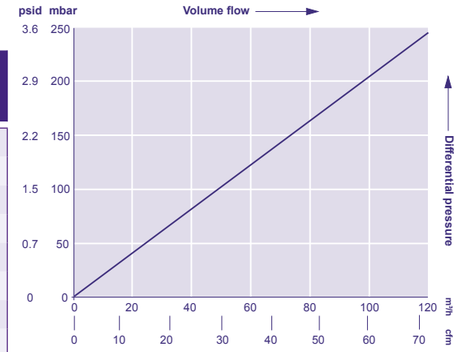
Bacterial Retention

LRV > 7/cm² (1.09in²) for T1 Coliform

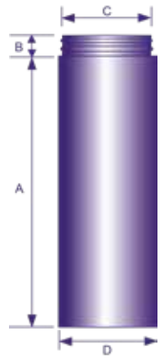
Absolute Retention Rate

99.99998 % related to 0.01µm

Flow rates



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



Contact Information:

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Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

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

Compfil™AC

Activated Carbon Filter

Compfil™ AC absolute-rated activated carbon filters are designed for the removal of oil vapor and other hydrocarbons.

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

Compfil™ AC filters are available in pleated and cylindrical formats.

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 nanofibers

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction		Connection	
AC	0310	P	Pleated	B	Code 7
	0410	C	Cylindrical	K	Code 2
	0420			M	DOE
	0520			S	3-Lug
	0525			U	Plug Connections
	0725				
	0730				
	1030				
	0530				
	2030				
	3030				
	3050				

Specifications

Materials of Manufacture

Filter membranes:	Borosilicate nanofibers
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)

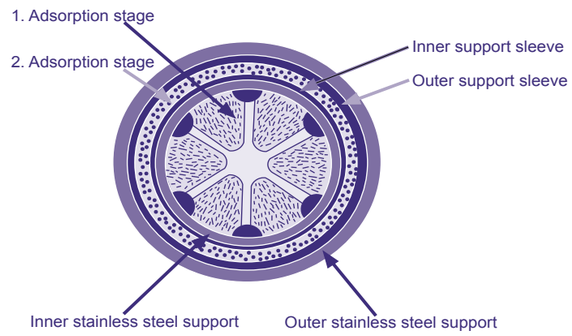
Retention Rate
Residual oil content of < 0,003 mg/m³, with pre-filtration

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)



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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 nanofiber filter and pleating technology, these high performance filters can achieve a 70% reduction in energy costs, as well as improve filtration performance.

The nanofiber 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.

Compfil™ IA filters are available in pleated and cylindrical formats.

Product Code: 1 2 3 4

Compfil™ type
IAF
IAM
IAS

Element size
0310
0410
0420
0520
0525
0725
0730
1030
0530
2030
3030
3050

Media construction	
P	Pleated
C	Cylindrical

Connection	
B	Code 7
K	Code 2
M	DOE
S	3-Lug
U	Plug Connections

Typical Applications

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

Features and Benefits

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

Specifications

Materials of Manufacture

Filter media:	Binder-free nanofibers
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		Oil retention rate acc. to ISO 12500-1
	3 mg/m³	10 mg/m³	
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%

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

Operating Temperature

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

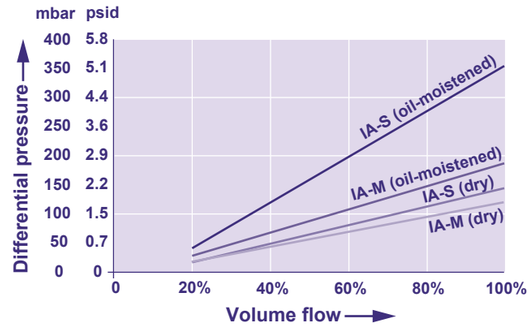
Start-up Differential Pressure

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



Contact Information:

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

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

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.

Product Code: 1 2 3 4

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

Connection	
B	Code 7
K	Code 2
M	DOE
S	3-Lug
U	Plug Connections

Micron rating
01
05
25

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

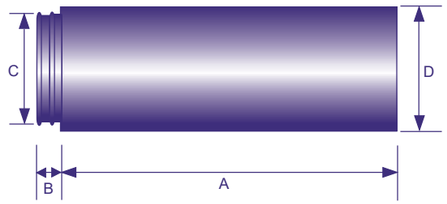
Temperature range

-20°C (-4°F) up to 200°C (392°F).

Filtration surface

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

Dimensions



Sterilization

In-line sterilization 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 sterilization cycles without loss of integrity.

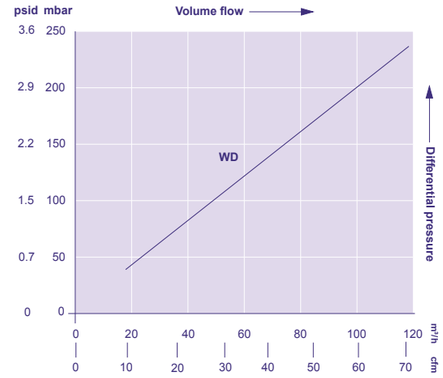
Absolute retention rate

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

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

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

Compfil™ PC

Sterile Depth Filter for Process Air and Gases

Compfil™ PC is a pleated depth filter with inner and outer guards 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.

Product Code: 1 2 3 4

Compfil™ type	Element size	Media construction	Connection
DF	0310	P Pleated depth	B Code 7
AC	0410	C Cylindrical / wound	K Code 2
IAF	0420		M DOE
IAM	0520		S 3-Lug
IAS	0525		U Plug Connection
PC	0725		
	0730		
	1030		
	0530		
	2030		
	3030		
	3050		

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 sterilization 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.

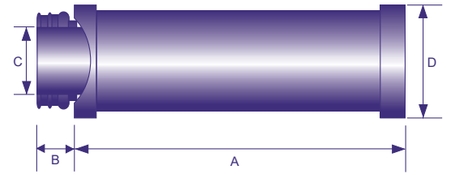
Temperature range

-20°C (-4°F) up to 200°C (392°F).

Filtration surface

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

Dimensions



Sterilization

In-line sterilization 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 sterilization cycles without loss of integrity.

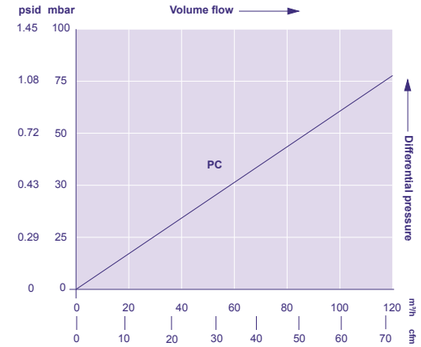
Retention rate

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



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

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

Filter Housings

We manufacture a full range of stainless steel industrial and sanitary housings, to the highest standards, in single and multi-element configurations suitable for industrial and sanitary applications.

With a catalog range from single round, 10" to 30-round 40", Porvair housings have a wide range of connections to suit customer needs, including tri-clover and weld connections.

Jacketed, heated and lined housings can be supplied on request as can be larger housings or special requirements.

Stainless Steel Filter Housings

Industrial and Sanitary Housings

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.

Typical Applications

- Metal filter elements
- Disposable filter cartridges

Features and Benefits

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

Ordering Information

For ordering information please turn to the next page.

Optional Material and Surface Treatments

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

Control Systems

Some of the control options available are:

- Solenoid operated valve
- Control timer

Coded Vessels

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

The systems are designed and built to individual customer's specifications and needs. A tailored pulsed jet supply system is vital to a good performance of the filter assembly.

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Email: info@porvairfiltration.com

US, Ashland Division
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Email: infoUS@porvairfiltration.com

Stainless Steel Filter Housings

Single and Multiple Round Housings

FIA 2110 Single Round Housing

Product Code: FIA2110 - Table 1 Table 2 - Table 3 - Table 4 Table 5 Table 6

Table 1 Bowl Length

1	310mm (12.2")	Nominal
2	580mm (22.8")	Nominal
3	800mm (31.5")	Nominal
4	187mm (7.4")	Nominal
5	1080mm (42.5")	Nominal

** Add 45mm to the bowl length for 226 style elements.*

Table 2 Connection Option

1	1" BSP female para. in/out standard
2	¾" BSP female para. in/out via adapter
3	2" ASA 150lb flanges in/out
4	1" RJT fittings in/out
5	1" Tri-clover in/out
6	¼" BSPP female in/out via adapter
7	1½" ASA 150lb flanges in/out
8	1" NPT in/out

Table 3 Element Option

1	222
2	DDE
3	226p

Table 4 Indicator/Vent Fitted

N	None fitted
G	Indicator fitted
V	Vent fitted (2 way)
S	Vent fitted (3 way)

Table 5 Drain Tap

N	None fitted (plug only)
D	Tap fitted

Table 6 Bowl Seal

V	Viton®	Standard
N	Nitrile	
S	Silicone	
E	Epom	
F	PTFE coated Viton®	Standard

Note: Other sizes and special housings can also be accommodated on request.

FIA 2600 Multiple Round Housing

Product Code: FIA2600 - Table 1 - Table 2 Table 3 Table 4 - Table 5 - Table 6 - Table 7 Table 8 Table 9 - Table 10 - Table 11 Table 11 - Table 12 - Table 13

Table 1: Type

91	T-style (zero hold up)
92	Plenum chamber
93	In-line
94	Vent
95	Off-line
96	Square body
97	Full sanitary

Table 2: No. of Cartridges

1	1 R
2	2 R
3	3 R
4	4 R
5	5 R
6	6 R
7	7 R
8	8 R
9	9 R
A	10 R
B	12 R
C	14 R
D	16 R
E	18 R
F	20 R
G	22 R
H	24 R
J	26 R
K	28 R
L	30 R

Table 3: Length

A	1.5"
B	2.5"
C	5"
1	10"
2	20"
3	30"
4	40"

Table 4: Adaptor

B	Code 7 / 226 / B
C	Code 8 / 222
D	DOE
E	Code 28
I	Internal O-Ring
M	Code M
T	BSP Thread

Table 5: Adaptor

A	EPDM
B	Silicone
C	Viton®
D	Nitrile
G	PTFE encap. silicone

Table 6: Housing Material

S1	SS 304
S2	SS 316
S3	SS 316L
S4	SS Halar coating
S5	SS PTFE lined
H1	Hastelloy

Table 7: Inlet / Outlet

B	BSP male thread
C	ASA 300# RF flange
D	Union DIN 11851
F	ASA 150# RF flange
H	Tri-clover with hose barb
P	Plain pipe
S	BSP female socket
T	Tri-clover DIN 32676
W	ASA 150# RFWN flange

Table 8: Connection size (BSP)

1	¼"
2	½"
3	¾"
4	1"
5	1 ½"
6	2"
7	3"
8	4"

Table 9: Pressure Guage

0	Not required
1	Tri-clover diaphragm
2	BSP threaded

Table 10: Jacket

0	Not required
1	Steam jacket
2	Electric heat tracing

Table 11: Drain / Vent*

A	Tri-clover DIN 32676
B	BSP male thread
C	ASA 150# RF flange
D	Tri-clover diaphragm valve
E	Staubli with tri-clover
F	Hose barb with tri-clover
G	DIN connection
H	Hosetail valve
I	BSP valve
J	TC diaphragm with staubli
K	TC diaphragm with hosetail
L	BSP plug
M	Tri-clover ball valve
S	Socket
T	BSPT plug
D	Not required

** Chose option for each drain and vent. E.g. socket with BSPT plug = ST.*

Table 12: Diaphragm valve seal

1	Viton®
2	EPDM
3	PTFE coated EPDM
4	Silicone
0	No diaphragm value

Table 13: Supports

1	Removal pipe
2	Removal rod
3	Angle type
4	Adjustable legs
5	Welded legs
0	No support

Contact Information:

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Tel: +44 (0)1425 612010
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Plastic Filter Housings

For a range of liquid applications

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.

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 sterilization 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.

Contact Information:

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

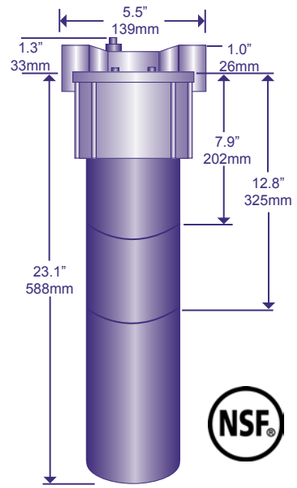
US, Ashland Division
Tel: +1 804 550 1600
Email: infoUS@porvairfiltration.com

Standard Plastic Filter Housings

For liquid applications

Standard housings offer the following:

- White talc reinforced polypropylene head with blue talc reinforced or clear styrene acrylonitrile (SAN) bowl
- Standard $^{3}/_{4}$" NPT or $^{3}/_{4}$" BSP connections
- Securely retained Buna "N" O-ring to ensure effective static sealing
- Positive head to bowl 'stop' to prevent bowl over tightening
- Available from stock with or without pressure relief vent button
- Custom colors available by special order
- Mounting bosses in head for available bracket
- Accepts industry standard cartridge size:
  - OD: 2 $^{3}/_{4}$" (70mm)
    2 $^{1}/_{2}$" (64mm)
  - ID: 1" (25mm)
  - Length: Half: 4 $^{7}/_{8}$" (124mm)
    Full: 9 $^{3}/_{4}$" (248mm)
    Double: 20" (508mm)
- Full testing to industry standards of the Water Quality Association for burst pressure, water tightness and fatigue resistance



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

Specifications

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

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

High Temperature Nylon Housings

For liquid applications

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

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

Specifications

Model number*	Max. operating temperature °F (°C)	Max. operating pressure psi (bar)*	Shipping weight lb (kg)**	Cartridge size	Housing material and style
31	165 (74)	100 (6.9)	3.2 (1.45)	10" (254mm)	Red reinforced nylon head and bowl
32	165 (74)	100 (6.9)	2.3 (1.04)	5" (127mm)	Red reinforced nylon head and bowl

Ordering Information

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

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

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

Pure Polypropylene Housings

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

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

Applications include:

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

Features include:

- 100% polypropylene construction
- Smooth contact surfaces to prevent bacteria and dirt buildup
- Includes a non-lubricated silicone O-ring as standard
- Standard $^{3}/_{4}$" NPT or $^{3}/_{4}$" BSP connections

Specifications

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

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

Porvair's GIANT HOUSING® Series

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

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

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

Ordering Information

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

Specifications - for cold liquid applications

Model number*†	Max. operating temperature °F (°C)	Max. operating pressure psi (bar)*	Shipping weight lb (kg)**	Cartridge size	Housing material and style
BG10	125 (52)	100 (6.9)	5.10 (2.31)	10" (254mm)	White polypropylene head, blue polypropylene bowl
BG20	125 (52)	100 (6.9)	7.13 (3.23)	20" (508mm)	White polypropylene head, blue polypropylene bowl
CG10	125 (52)	100 (6.9)	4.13 (1.87)	10" (254mm)	White polypropylene head, clear styrene bowl
CG20	125 (52)	100 (6.9)	7.12 (3.23)	20" (508mm)	White polypropylene head, clear styrene bowl
NPGX10	125 (52)	100 (6.9)	3.13 (1.42)	10" (254mm)	Pure polypropylene w/o pressure relief button
NPGXD10	125 (52)	100 (6.9)	3.13 (1.42)	10" (254mm)	Pure polypropylene w/ tapped drain
NPGX20	125 (52)	100 (6.9)	5.15 (2.34)	20" (508mm)	Pure polypropylene w/o pressure relief button
NPGXD20	125 (52)	100 (6.9)	5.15 (2.34)	20" (508mm)	Pure polypropylene w/ tapped drain

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

Specifications - for high temperature applications

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

** NPT fittings as standard. Add a B after the model number to order BSP fittings. ** Multiply by 12 to obtain weight per case.*

Contact Information:

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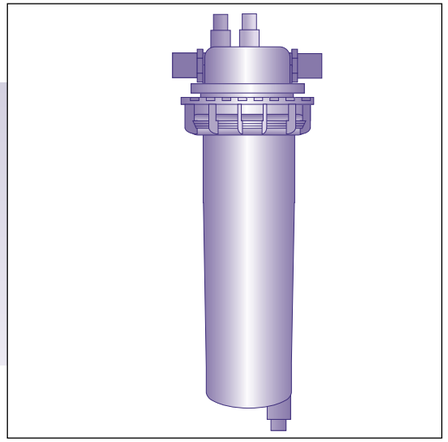
Tel: +44 (0)1425 612010
Email: info@porvairfiltration.com

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

Quicklok™ PFA Housings



A range of PFA filter cartridge housings, offering an excellent space saving solution. The Quicklok™ housing locks into the bowl, allowing the bowl and cartridge to be installed or removed as a single unit, therefore ensuring that contamination and chemical contact is minimised.

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

Applications

- **Semiconductor**
  Chemical delivery system filtration of strong acid and base solution at room temperature for semiconductor manufacturing.
- **Aggressive chemicals**
  Chemical delivery system filtration of strong acid base solution.
- **Photovoltaic**
  Aggressive chemical processes in the photovoltaic and data storage industries.
- **Microelectronics**
  Optimised for a broad range of microelectronics

Features and Benefits

- **Easy filter installation**
  The Quicklok™ cartridge housing bowl is used as a tool when installing and removing the cartridge. By turning the locking ring, the cartridge is pushed vertically into the housing head, ensuring perfect alignment and double O-ring engagement.
- **Minimal contact required**
  Operators do not have to touch the cartridge body during cartridge changeout, minimizing exposure to chemicals for maximum safety and reducing the risk of contamination.
- **Easy to retrofit**
  Compatible with industry standard 2-222/flat single-open-end filter cartridges.
- **Space-saving**
  Saves a minimum of 20-40cm of vertical space during changeout.
- **Ultra-clean manufacturing**
  Assembled, cleaned and tested in class 1000 and 100 cleanroom.

Ordering Information

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

Specifications

Materials of Manufacture

Head, moulded fittings, bowl:	PFA
O-ring:	E-FKM
Locking ring:	PVDF or PP
Mounting hardware:	PVDF or PFA Coated SS

Cartridge Connections

Code 0 (dual 2-222 O-rings) Teffil™ (70mm diameter).

Cartridge Lengths

125mm (5"), 250mm (10"), 498mm (20") and 745mm (30").

Fittings

Pillar S300 1", Super Pillar 3/4", Flare 1" and 3/4" Inlet/Outlet fittings available to meet semiconductor application requirements.

Dimensions

Inlet/Outlet	Vent/Drain	B	A (10" housing)	A (20" housing)	A (30" housing)
1" Flaretek	1/2" Flaretek	202mm (8")	481mm (18.9")	710mm (28")	957mm (37.7")
1" S300*	1/2" 300*	182mm (7.2")	459mm (18")	688mm (27")	935mm (36.8")
3/4" Super Pillar	1/2 Super Pillar	180mm (7.1")	458mm (18")	687mm (27")	934mm (36.8")
3/4" Flaretek	1/2" Flaretek	192.4mm (7.6")	481mm (18.9")	710mm (28mm)	957mm (37.7")

Operating Conditions

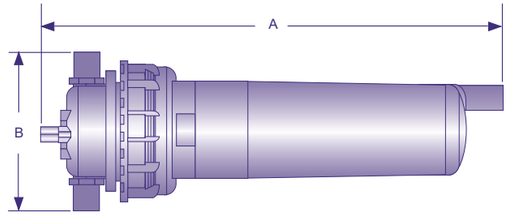
Maximum inlet pressure:
3.4bar (49psi) @100˚C (212˚F)
7.5bar (110psi) @ 25˚C (77˚F)
Maximum operating temperature:
110˚C (212˚F).

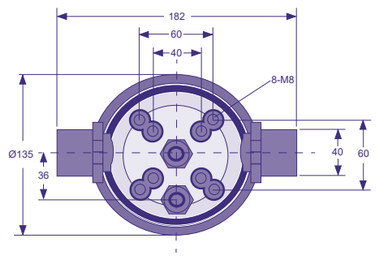
Qualification NSF/ANSI 42

Hydrostatic pressure tested 7.5bar (110psi) at room temperature.

Cyclic pressure tested from 5bar (72psi) for 1000,000 times at room temperature.

100˚C (212˚F) temperature leak test at 4.3bar (62psi).





Contact Information:

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

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

Compfil™ SH

Stainess Steel Filter Housing 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.

Product Code: 1 2 3

Compfil™ type	Connection		Element size
SH	AS	ASA	0310
	DN	ASA DIN	0410
	BS	BSP	0420
	NP	NPT	0520
	DT	DIN Flange	0525
	AF	ANSI Flange	0725
			0730
			1030
			0530
			2030
			3030
			3050

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.

Specifications

Materials of Manufacture

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

Connection Types

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

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

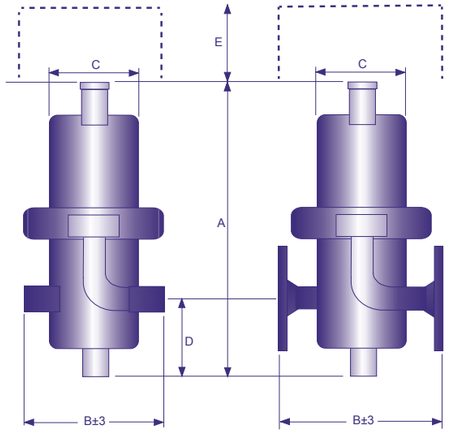
200°C (392°F)

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 DN2633

Contact Information:

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

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

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

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

Type P-EG	Dimensions in mm (in)						Weight in kg (lb)
	A	B (Threaded)	B (DIN2633)	C	D	E	
0006	215 (8.46)	105 (4.13)	180 (7.1)	70 (2.76)	55 (2.16)	90 (3.54)	1.7 (3.7)
0009	243 (9.57)	105 (4.13)	180 (7.1)	70 (2.76)	55 (2.16)	120 (4.72)	1.9 (4.2)
0012	243 (9.57)	108 (4.25)	180 (7.1)	70 (2.76)	55 (2.16)	120 (4.72)	1.9 (4.2)
0018	266 (10.5)	125 (4.92)	202 (7.95)	70 (2.76)	55 (2.16)	150 (5.90)	2.0 (4.4)
0027	293 (11.5)	125 (4.92)	212 (8.34)	85 (3.35)	74 (2.91)	150 (5.90)	2.6 (5.7)
0036	344 (13.5)	140 (5.51)	220 (8.66)	85 (3.35)	74 (2.91)	200 (7.87)	3.0 (6.6)
0048	386 (15.2)	170 (6.69)	254 (10)	104 (4.09)	94 (3.70)	200 (7.87)	4.3 (9.5)
0072	460 (18.1)	170 (6.69)	260 (10.24)	104 (4.09)	94 (3.70)	280 (11.0)	4.8 (10.6)
0108	587 (23.1)	170 (6.69)	260 (10.24)	104 (4.09)	94 (3.70)	450 (17.7)	5.3 (11.7)
0144	732 (28.8)	216 (8.50)	290 (11.42)	129 (5.08)	106 (4.17)	580 (22.8)	9 (19.8)
0192	987 (38.9)	216 (8.50)	300 (11.81)	129 (5.08)	106 (4.17)	850 (33.5)	10.8 (23.8)
0288	1,026 (40.4)	240 (9.45)	340 (13.39)	154 (6.06)	119 (4.68)	850 (33.5)	16.2 (35.7)
0432	1,090 (42.9)	410 (16.1)	410 (16.14)	219 (8.62)	200 (7.87)	580 (22.8)	43 (94.8)
0576	1,350 (53.1)	410 (16.1)	410 (16.14)	219 (8.62)	200 (7.87)	850 (33.5)	44 (97)
0768	1,410 (55.5)	480 (18.9)	480 (18.9)	273 (10.7)	240 (9.45)	850 (33.5)	70 (154.3)
1152	1,460 (57.5)	540 (21.3)	540 (21.26)	324 (12.8)	250 (9.84)	850 (33.5)	80 (176.4)
1536	1,600 (63.0)	660 (26.0)	660 (25.98)	406 (16.0)	300 (11.8)	850 (33.5)	135 (297.6)
1920	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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Tel: +44 (0)1425 612010
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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.

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 fibers on glass fiber, 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 fibers
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)

Cartridge Dimensions (Nominal)

Diameter: 180mm (7.09")
Length: 1000mm (39.37")

The retention/adsorption of the NanoKey™ products may be determined/optimised through changes in filtration conditions.

Contact Information:

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

US, Ashland Division
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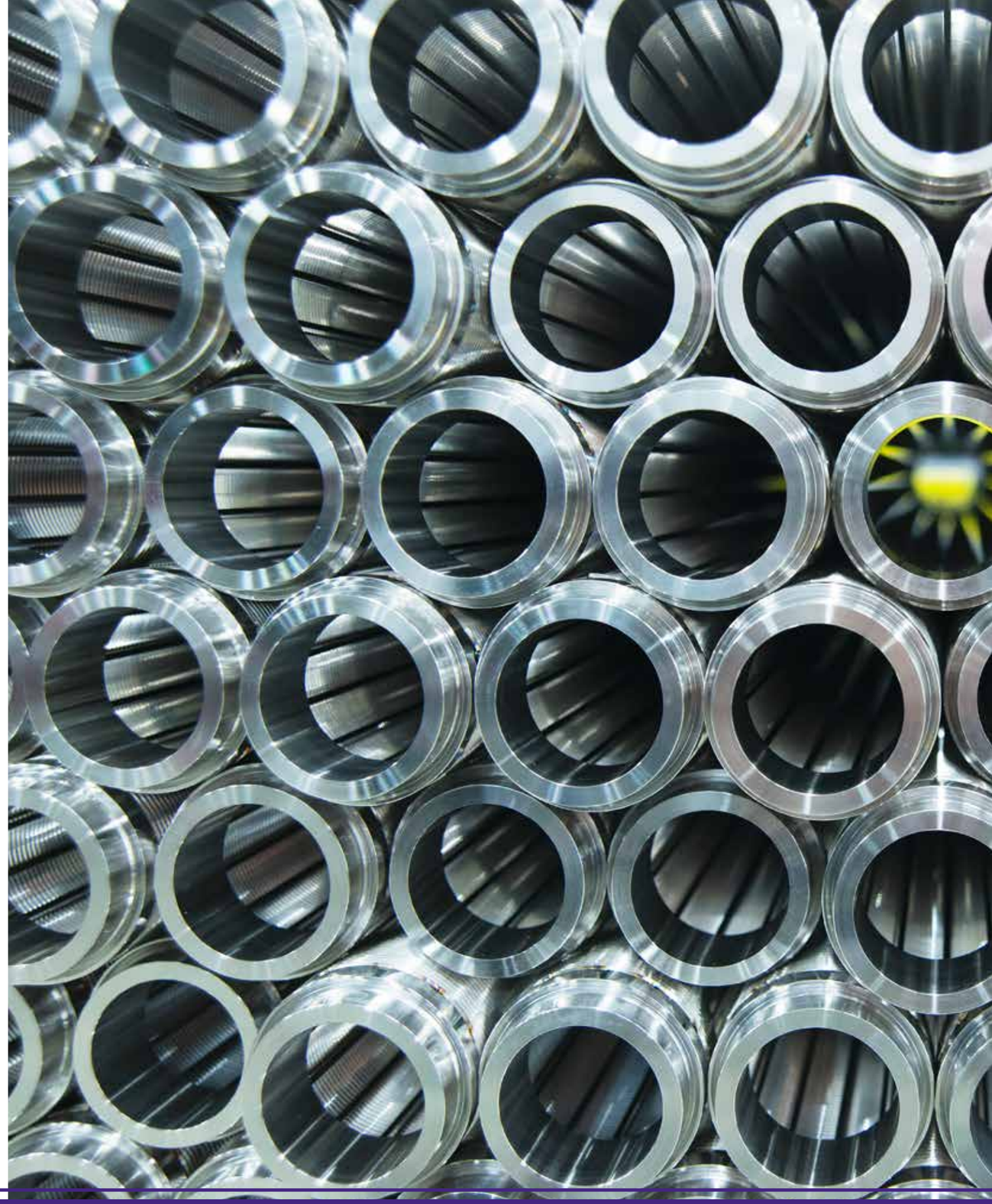
Email: infoUS@porvairfiltration.com



porvair
filtration group

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

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

www.porvairfiltration.com

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PFG011 / June 2020