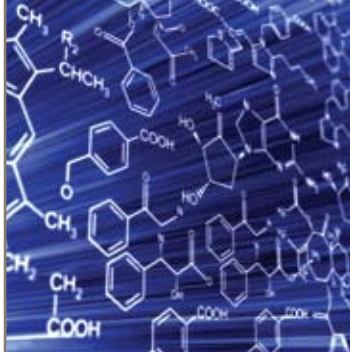




aerospace  
climate control  
electromechanical  
**filtration**  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



# Industrial Process Filtration

A guide to products and services



**LENNTECH bv**

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ENGINEERING YOUR SUCCESS.



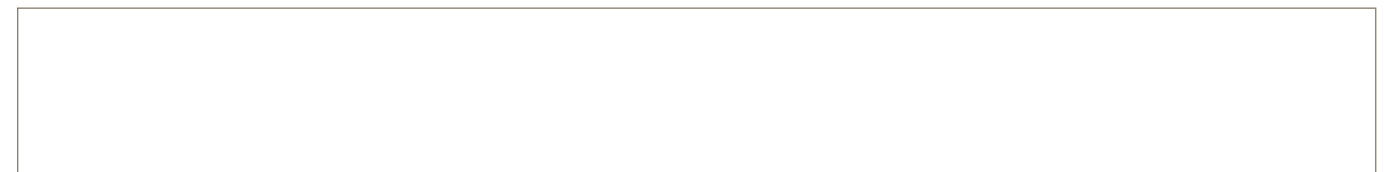
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# Process Filtration

Adding value to your business



Parker domnick hunter specialises in the manufacture and supply of high quality products for the clarification, stabilisation and sterilisation of liquids and gases, providing full scaleability from membrane flat stock to multi element filter systems. Each filter has been specifically developed to meet industry applications and requirements.

As a company it is our goal to deliver innovative quality products on time whilst responding to the needs of the end user with premier customer service. We know our success is only possible through increasing our customers productivity and profitability.

Parker domnick hunter manufacture products in the most efficient, effective and environmentally conscious way building on a culture of continuous improvement.

With over 35 years filtration experience in markets such as pharmaceutical, beverage and water treatment we have developed innovative and cost effective solutions that will add value to your manufacturing process, providing reliable products and services that meet or exceed your expectations.

Our worldwide assistance extends to on-site evaluations, design, manufacture, validation, quality control and ongoing support long after the filters are installed.

With annual sales exceeding \$10 billion, Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of commercial, mobile, industrial and aerospace markets. The company employs more than 52,000 people in 48 countries around the world, serving over 452,000 customers.

- Continued investment in research & technology
- Application driven approach to new products
- Market specific experience leading to tailored solutions
- Global network providing technical, service and sales support
- Excellent reputation gained through working with some of the world's leading companies
- Highly skilled and trained employees



# Chemical Filtration

Providing products to meet demanding applications



The Chemical industry employs processes, reactions and refining to produce a wide variety of solid, liquid and gaseous materials. Many are intermediates required for input into agricultural, rubber, plastics, textiles, petroleum and pulp & paper industries. Filtration is critical to ensure the long term life of equipment used in the manufacturing process.

The scope of filtration within the chemical sector is extremely diverse and many factors need consideration such as chemical compatibility, viscosity and operating temperatures. The varied applications can include products that are manufactured in ambient temperatures such as ethylene glycol, which makes the process ideally suited to our range of spunbonded & pleated polypropylene filters. Chemicals that are manufactured from more aggressive solvents will require a filter with componentry such as stainless steel like our Metallic & Prosteel range of filters, which can also withstand high temperature processes.

The flows of industrial process fluids such as water, solvents and chemicals can be subject to numerous filtration, separation and purification stages. Consequently each link in the filtration chain is critical to the strength of the next; the weakest link will break the chain and the process will collapse.

No matter what filtration challenges you may encounter in your chemical production process, Parker domnick hunter can supply products and expertise to help you meet the ever-increasing demand for greater purity, process efficiency and cost effective filtration.

| Applications                |
|-----------------------------|
| Chemical                    |
| Aromatic derivatives        |
| Bulk chemical filtration    |
| Dyes and pigments           |
| Hydrogen peroxide           |
| Catalyst recovery           |
| DI water filtration         |
| Final product clarification |
| Quench water                |
| Reactants                   |
| Olefins and polyolefins     |
| Ethylene glycol             |
| Ethylene oxide              |
| Polyols                     |
| Feedstock filtration        |
| Guard filtration            |
| Process water               |
| Polymer product recovery    |
| Polymer                     |
| Acrylics                    |
| Polyester                   |
| Polyethylene                |
| Melt polymer filtration     |
| Solvents                    |
| Feedstocks                  |
| Pigment slurries            |
| Intermediates               |
| Spin pack protection        |



# Coatings Filtration

Allowing true colours to shine through



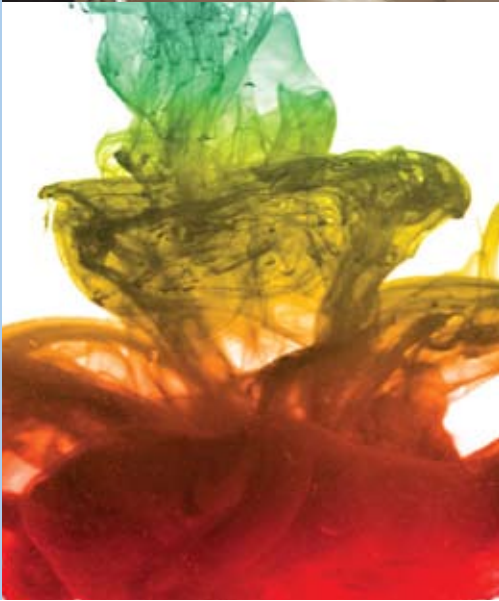
Parker can supply a wide range of filter cartridges suitable for the demands of the coatings industry. This industry produces high viscosity fluids, which are mixtures of resins, solvents, pigments and other additives that provide specific properties to the end product. The filtration of these fluids is essential to removing grit, agglomerates and other contaminants and to assure the desired properties for the coating, whilst having no affect on adhesion, colour and dispersion.

For many people, the word coatings is immediately associated with images of paint. However paint represents just one aspect of the incredibly diverse world of coatings that also includes highly viscous adhesives, high quality automotive coatings, inks, resins, photographic films, magnetic coatings etc, each application presents unique challenges when it comes to the type of filtration required.

There are several challenges to manufacturers of coatings, these include unnecessary recirculation of product, stripping of pigments & metallics, operator exposure to volatile organic compounds, contaminant fibres and the high viscosity of some of the products. High viscosities require a filter with the ability to withstand high differential pressures. Parker's resin bonded depth filters achieve this through an outer spiral wrap that increases strength and also collects larger particulate and agglomerates allowing the inner layer to control particle size at the desired micron. Additionally these elements are manufactured silicone free, an essential attribute as it avoids adhesion problems associated with these compounds.

So whether your filtration requirements are for the removal of gels in adhesive, the classification of pigments in paint or the removal of contaminant in solvents, our diverse range of filtration solutions maximize operational performance in this most challenging of applications.

| Applications                                                                                                               |
|----------------------------------------------------------------------------------------------------------------------------|
| Coatings                                                                                                                   |
| Adhesives<br>Resins<br>Electrical wire coating<br>Reflective and anti reflective optical coatings<br>Digital storage media |
| Paints                                                                                                                     |
| Primers<br>Resins<br>Base coats<br>Clear coats<br>Solvents<br>Anti-corrosion<br>Electrodeposition                          |
| Inks                                                                                                                       |
| Bulk inks<br>Tints and dye<br>Inkjet labelling<br>Newspaper inks                                                           |



# Water Filtration

Protecting a natural resource



In industrial applications water treatment is employed to optimise processes such as heating, cooling, processing, cleaning and rinsing. Typically filtration is required in areas where scaling and corrosion occur. In scaling, precipitated mineral salts build up on metal surfaces in layers, as these layers grow the efficiency of heat exchangers will reduce through the insulating effect of the scale and thus energy costs will increase. Corrosion can lead to similar problems, but can also compromise the integrity of systems.

In order to achieve the specific requirement for each application removal of material, undesirable chemicals and biological contaminants must be achieved. Parker offers the broadest range of filtration products for the water service industry. From sub micron filtration in water cutting technologies to scale and corrosion particulate removal in boiler feed and post turbine waters.

Process water is typically filtered in large volumes with filters primarily being used in desalination and municipal water plants. Due to the volume of water filtered in these applications there is a requirement for larger diameter cartridges such as the PARMAX and MAXGUARD elements which are ideal for general clarification. This is because every reverse osmosis plant and water municipality requires a good level of pre-filtration to avoid costly and time consuming replacement of fouled membrane filters. Our CARBOFLOW range of carbon filters, are highly effective in removing chlorine from process water, providing performance that exceeds industry requirements.

When it comes to industrial water filtration, Parker domnick hunter can provide cost effective filtration solutions to meet your every need.

| Applications           |
|------------------------|
| Water cutting          |
| Desalination           |
| RO membrane protection |
| Scale and rust removal |
| Boiler feed water      |
| Post Turbine Water     |



# Depth Filters



## Depth Filtration

Depth filtration is a process whereby a liquid is filtered through a depth of media. Two mechanisms are involved in the retention of particles, firstly mechanical retention, here the particle is restricted through interception with the media fibres. Secondly adsorptive forces adhere the particles to the media, characterised by hydrophobic and electrokinetic properties of the fibres.

Depth filters are manufactured using thick medias that force the liquid through a tortuous path on its journey downstream. As the liquid progresses downstream particles are progressively trapped throughout the graduated density of fibres, the smaller particles in the more densely packed fibres towards the downstream surface.

TEXFLOW precision wound depth filters from Parker domnick hunter combine considerable dirt holding capacity with high flow rates and low pressure loss. Available in a wide range of materials they are suitable for either liquid or air applications.

SPUNFLOW filters from Parker domnick hunter are manufactured from thermally bonded polypropylene microfibres. Available in three grades they provide long life, low pressure loss and high dirt holding capacity.

BONDFLOW resin bonded filters provide disposable, low cost filtration ideal for viscous chemicals & solvents, allowing controlled depth filtration with uniform particle retention.

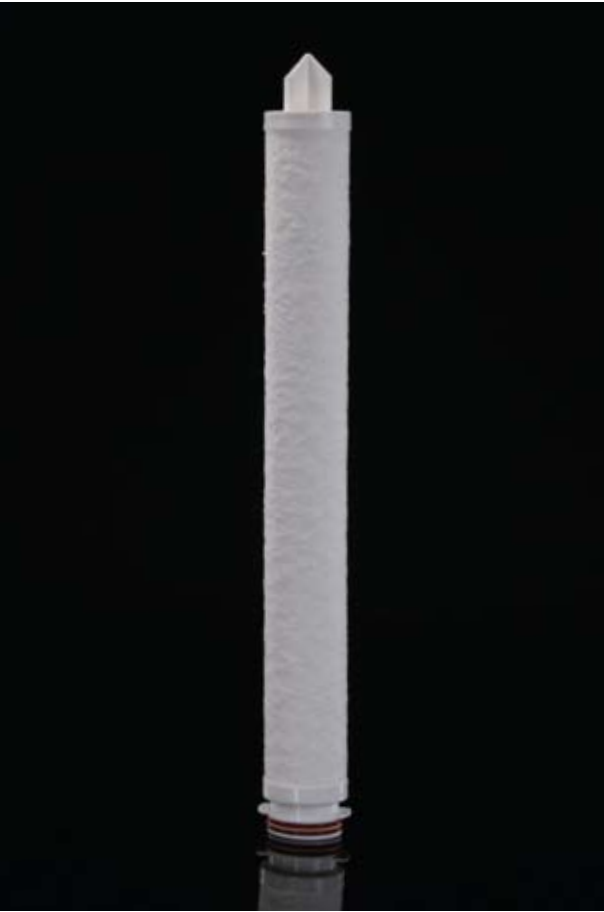


SPUNFLOW QA Filter Cartridges

- liquid filters
- polypropylene, polyester / nylon

SPUNFLOW QA cartridges are a range of absolute rated, graded density filter elements, manufactured from thermally bonded microfibrres layered onto a resilient centre core. The construction consists of numerous, distinctive filter zones with coarser outer layers acting as prefilters for the tighter, absolute rated central zone, this removal profile produces an element possessing high voids volume, which benefit the user through high flow rates, low pressure loss, high dirt holding capacity and long life.

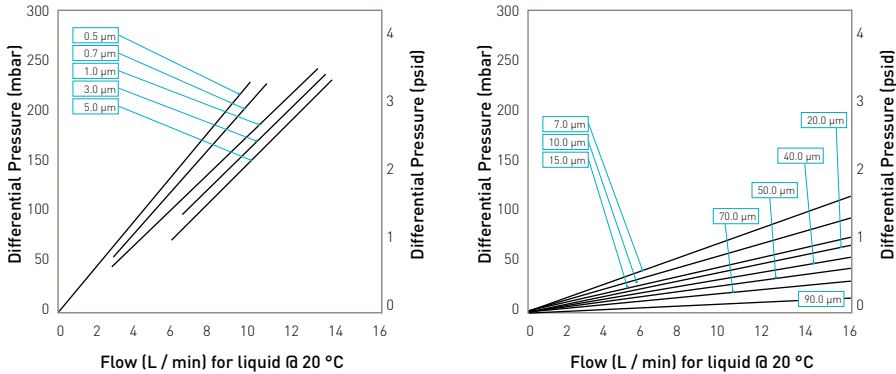
The thermally bonded media also eliminates fibre migration and resists the tendency to unload during service. Available in two grades, polypropylene and polyester / nylon, the range offers extremely wide chemical compatibility.



Features and Benefits

- Absolute ratings from 0.5 to 120 micron
  - Exhibits fast rinse up to 18 megohms in electronics duties
- Available in lengths up to 40" (1016 mm)
  - 99.98% absolute efficiency

Performance Characteristics



10" Size (250 mm) Cartridge

10" Size (250 mm) Cartridge

SPUNFLOW QA Filter Cartridges

Specifications

Materials of Construction

- Filtration Media:

Polypropylene  
Polyester / Nylon
- End Caps:

Polypropylene  
Nylon

Recommended Operating Conditions

Maximum Temperature:  
Polyester / Nylon - 135°C (275°F)  
Polypropylene - 65°C (149°F)

Maximum Differential Pressure  
4 bar at 20°C (68°F)

Maximum Recommended Differential Pressure  
2 bar (29 psid)

Cleaning and Sterilisation

SPUNFLOW QA can be repeatedly steam sterilised in situ or autoclaved up to 130°C (266°F). They can be sanitized with hot water at up to 90°C and are compatible with a wide range of chemicals.

Dimensions

Outside diameter: 64 mm (2.52")  
Inside diameter: 29 mm (1.14")  
a caged version can be supplied in polypropylene 68 mm (2.68")

Applications

- Fine chemicals
- High purity water
- Optical coatings
- Inks

Ordering Information

QA

| Code   Length (Nominal) | Code   Material     | Code   Micron | Code   End Fitting | Code   Seat Material | Code   Seat Material | Code   Option       |
|-------------------------|---------------------|---------------|--------------------|----------------------|----------------------|---------------------|
| 09 9.75" (247 mm)       | P Polypropylene     | A5 0.5 µm     | 0 DOE              | E EPDM               | S Standard           | S** Stainless Steel |
| 10 9.875" (251 mm)      | S Polyester / Nylon | A7 0.7 µm     | 2 Flat / 226       | N Nitrile            | C Light Cage         | Insert Ring         |
| 11 10" (254 mm)         |                     | 01 1 µm       | 3 Flat / 222       | S Silicone           |                      |                     |
| 19 19.50" (500 mm)      |                     | 03 3 µm       | 6 Flat / 118 / 020 | V Viton***           |                      |                     |
| 20 20" (508 mm)         |                     | 05 5 µm       | 7 Fin / 226        |                      |                      |                     |
| 29 29.50" (750 mm)      |                     | 07 7 µm       | 8 Fin / 222        |                      |                      |                     |
| 30 30" (762 mm)         |                     | 10 10 µm      | 9 213              |                      |                      |                     |
| 39 39.25" (1000 mm)     |                     | 15 15 µm      |                    |                      |                      |                     |
| 40 40" (1016 mm)        |                     | 20 20 µm      |                    |                      |                      |                     |
|                         |                     | 40 40 µm      |                    |                      |                      |                     |
|                         |                     | 50 50 µm      |                    |                      |                      |                     |
|                         |                     | 70 70 µm      |                    |                      |                      |                     |
|                         |                     | 90 90 µm      |                    |                      |                      |                     |
|                         |                     | 120 CA        |                    |                      |                      |                     |

NB: Polyester / Nylon core and end fitting 1 to 90 micron

Other lengths available upon request

Minimum Box Quantity

|     |    |
|-----|----|
| 10" | 40 |
| 20" | 20 |
| 30" | 20 |
| 40" | 20 |

\*\* S option is inclusive of light cage option

\*\*\*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc

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SPUNFLOW QN Filter Cartridges

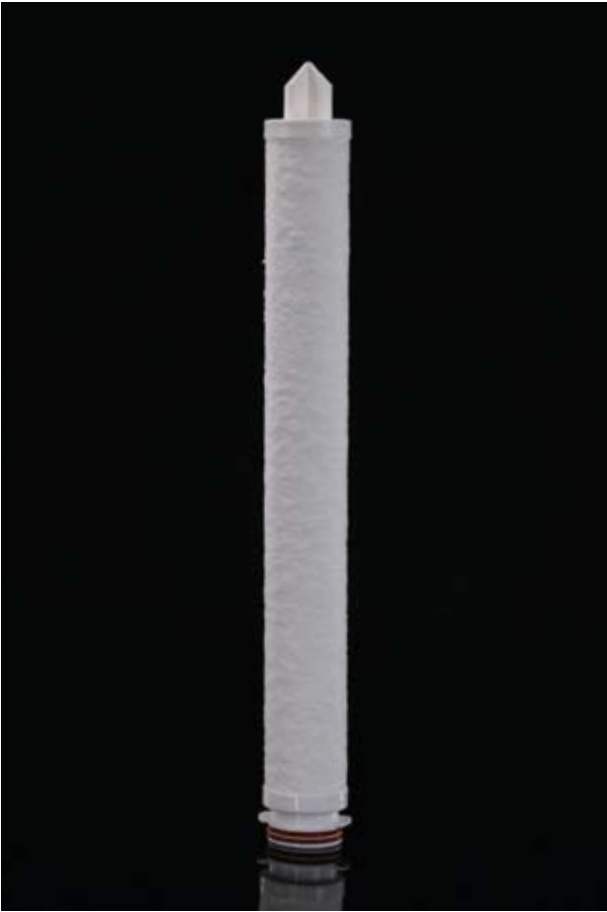
- liquid filters
- polypropylene

Graded density, high porosity, SPUNFLOW QN filter elements are manufactured from thermally bonded polypropylene microfibres. Offering high throughputs, low pressure loss, high dirt holding capacity and long onstream life, the bonded fibre construction minimises any possibility of fibre migration and is rugged enough to resist particle shedding, even under pulse conditions.

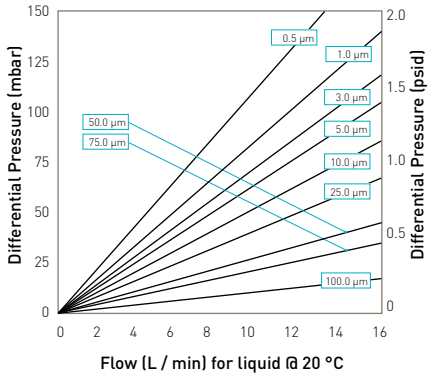
The SPUNFLOW construction process consists of controlled fibre diameter throughout the extrusion process and thermally bonds these micro-fibres into a complex filter matrix. These interlinked graded density layers offer maximum support and maximum void volume resulting in true depth filtration.

Features and Benefits

- Thermally bonded polypropylene
- Low pressure loss
- 0.5 to 250 microns
- 90% nominal rated
- High throughputs



Performance Characteristics



10" Size (250 mm) Cartridge

SPUNFLOW QN Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Polypropylene
- End Caps: Polypropylene

Dimensions

Standard Cartridge  
Outside diameter: 62mm (2.44") x  
Inside diameter: 29mm (1.14")

Recommended Operating Conditions

Maximum Temperature:  
Polypropylene - 65°C (149°F)

Endcapped Cartridge

Outside diameter: 64mm (2.51") x  
Inside diameter: 27mm (1.06")

Maximum Differential Pressure  
4 bar at 20°C (68°F)

Maximum Recommended Differential Pressure  
2 bar (29psid)

Applications

- Solvents
- Resins
- High purity chemicals
- Industrial coatings
- Solvents
- Bulk inks

Ordering Information

| QN                      |                 |               |                    |                      |                        |
|-------------------------|-----------------|---------------|--------------------|----------------------|------------------------|
| Code   Length (Nominal) | Code   Material | Code   Micron | Code   End Fitting | Code   Seal Material |                        |
| 09 9.75" (247 mm)       | P Polypropylene | A5 0.5 µm     | 0 DOE              | X None               | *Plain End or DOE only |
| 10 9.875" (251 mm)      |                 | 01 1 µm       | 2 Flat / 226       | E EPDM               |                        |
| 11 10" (254 mm)         |                 | 03 3 µm       | 3 Flat / 222       | N Nitrile            |                        |
| 19 19.50" (500 mm)      |                 | 05 5 µm       | 6 Flat / 118 / 020 | P* PE                |                        |
| 20 20" (508 mm)         |                 | 10 10 µm      | 7 Fin / 226        | S Silicone           |                        |
| 29 29.50" (750 mm)      |                 | 25 25 µm      | 8 Fin / 222        | V Viton**            |                        |
| 30 30" (762 mm)         |                 | 50 50 µm      | 9 213              |                      |                        |
| 39 39.25" (1000 mm)     |                 | 75 75 µm      | X Plain            |                      |                        |
| 40 40" (1016 mm)        |                 | 99 100 µm     | E Ext Core         |                      |                        |
|                         |                 | CL 150 µm     |                    |                      |                        |
|                         |                 | CC 200 µm     |                    |                      |                        |
|                         |                 | CD 250 µm     |                    |                      |                        |

Other lengths available upon request

| Minimum Box Quantity |    |
|----------------------|----|
| 10"                  | 40 |
| 20"                  | 20 |
| 30"                  | 20 |
| 40"                  | 20 |

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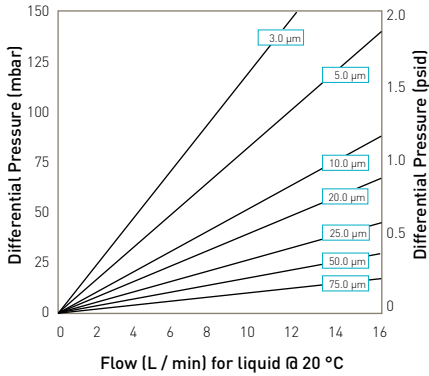
SPUNFLOW QE are the economical choice for applications where high removal efficiency and low filtration costs are important. Graded density, high porosity, SPUNFLOW QE filter elements are manufactured from thermally bonded Polypropylene microfibres. Offering high throughputs, low pressure loss, high dirt holding capacity and long onstream life, the bonded fibre construction minimises any possibility of fibre migration and is rugged enough to resist particle shedding, even under pulse conditions.

SPUNFLOW QE filters have excellent chemical resistance and contain no surfactants, resins, binders nor adhesives. The fibre matrix has been engineered to provide structural integrity throughout the long service life of the cartridge and finish free construction provides optimum fluid purity and eliminates foaming.

Features and Benefits

- Thermally bonded polypropylene
- High throughputs
- 3 to 75 microns
- Low pressure loss
- High dirt holding capacity
- 99% efficiency

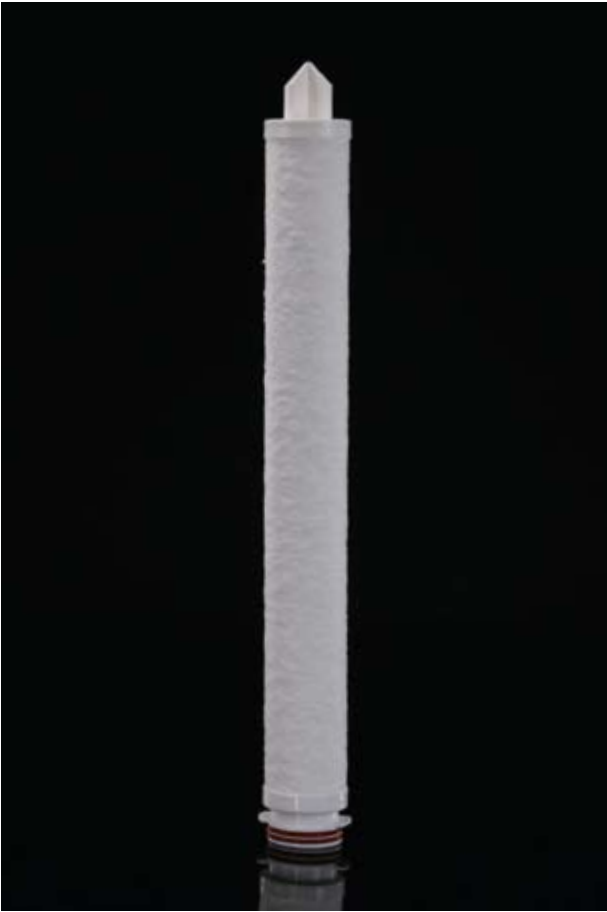
Performance Characteristics



10" Size (250 mm) Cartridge

SPUNFLOW QE Filter Cartridges

- liquid filters
- polypropylene



SPUNFLOW QE Filter Cartridges

Specifications

|                                           |               |                     |                |
|-------------------------------------------|---------------|---------------------|----------------|
| Materials of Construction                 |               | Dimensions          |                |
| Filtration Media:                         | Polypropylene | Standard Cartridge  |                |
| End Caps:                                 | Polypropylene | Outside diameter:   | 62mm [2.44"] x |
|                                           |               | Inside diameter:    | 29mm [1.14"]   |
| Recommended Operating Conditions          |               | Endcapped Cartridge |                |
| Maximum Temperature:                      |               | Outside diameter:   | 64mm [2.51"] x |
| Polypropylene - 65°C [149°F]              |               | Inside diameter:    | 27mm [1.06"]   |
| Maximum Differential Pressure             |               |                     |                |
| 4 bar [58 psid] at 20°C [68°F]            |               |                     |                |
| Maximum Recommended Differential Pressure |               |                     |                |
| 2 bar [29 psid]                           |               |                     |                |

**Cleaning and Sterilisation**  
Elements can be autoclaved at 121°C [250°F] for 30 minutes and are compatible with a wide range of chemicals.

- Applications
- Chemicals
  - Water treatment
  - Solvents
  - Emulsions
  - Plating solutions
  - Pigment slurries
  - Guard filtration

Ordering Information

| QE                      |                 |               |                    |                        |  |
|-------------------------|-----------------|---------------|--------------------|------------------------|--|
| Code   Length [Nominal] | Code   Material | Code   Micron | Code   End Fitting | Code   Seal Material   |  |
| 09 9.75" [247 mm]       | P Polypropylene | 03 3 µm       | 0 DOE              | X None                 |  |
| 10 9.875" [251 mm]      |                 | 05 5 µm       | 2 Flat / 226       | E EPDM                 |  |
| 11 10" [254 mm]         |                 | 10 10 µm      | 3 Flat / 222       | N Nitrile              |  |
| 19 19.50" [500 mm]      |                 | 25 25 µm      | 6 Flat / 118 / 020 | P* PE                  |  |
| 20 20" [508 mm]         |                 | 50 50 µm      | 7 Fin / 226        | S Silicone             |  |
| 29 29.50" [750 mm]      |                 | 75 75 µm      | 8 Fin / 222        | V Viton**              |  |
| 30 30" [762 mm]         |                 |               | 9 213              |                        |  |
| 39 39.25" [1000 mm]     |                 |               | X Plain            | *Plain End or DOE only |  |
| 40 40" [1016 mm]        |                 |               | E Ext Core         |                        |  |

Other lengths available upon request

| Minimum Box Quantity |    |
|----------------------|----|
| 10"                  | 40 |
| 20"                  | 20 |
| 30"                  | 20 |
| 40"                  | 20 |

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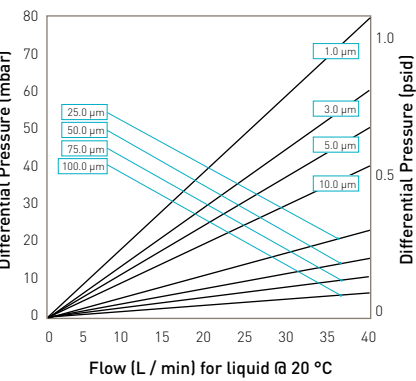
DURABOND cartridges are the most economical high strength filter cartridges available. Featuring an integral rigid thermally bonded construction, the DURABOND provides consistent filtration for a wide variety of fluids.

Its fixed pore structure acts as a sieve-like particle 'classification' filter for pigmented coatings allowing pigments to pass while stopping large agglomerates.

Features and Benefits

- Fixed pore structure provides efficiency, integrity and optimum particle retention
- Thermally bonded bicomponent fibre matrix provides rigid dimensionally stable construction without fibre migration
- Rigid construction eliminated contaminant unloading and channelling
- Corrugated porous surface maximises dirt holding capacity
- Silicone free construction will not change coating properties

Performance Characteristics



10" Size (250 mm) Cartridge

DURABOND Filter Cartridges

- thermally bonded
- polypropylene / polyethylene



DURABOND Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Thermal Bonded biocomponent matrix of polypropylene / polyethylene
- End Caps / Adapters: (optional) Polyolefin copolymer
- Seal Options: Refer to ordering information

Dimensions  
1-1/16 in (27 mm ) ID x 2-7/16 (62 mm) in OD

Recommended Operating Conditions  
Maximum Temperature  
80°C (175°F)

Maximum Differential Pressure  
6.8 bar (100 psid) at 27°C (72°F)  
3.4 bar (50 psid) at 80°C (175°F)

Maximum Flow Rate  
18.9 lpm per 10" in length

Changeout dP  
2.1 bar (30 psid)

Retention Characteristics

The retention characteristics of DURABOND filter cartridges have been determined by a single-pass technique using suspensions of ISO 12103 Pt. 1 A2 Fine and A4 Course test dust in water.

| Micron Rating at Various Efficiencies |                |            |           |           |
|---------------------------------------|----------------|------------|-----------|-----------|
|                                       | 99.90%<br>1000 | 99%<br>100 | 95%<br>20 | 90%<br>10 |
| 1                                     | 5              | 4          | 2         | 1         |
| 3                                     | 10             | 8          | 4         | 3         |
| 5                                     | 20             | 16         | 10        | 5         |
| 10                                    | 30             | 25         | 15        | 10        |
| 25                                    | 55             | 50         | 30        | 25        |
| 50                                    | 90             | 80         | 70        | 50        |
| 75                                    | >100           | >100       | 100       | 75        |
| 100                                   | >100           | >100       | >100      | 100       |

Applications

- Photographic chemicals
- Plating solutions
- Bleach
- Organic solvents
- Membrane prefiltration
- Industrial coatings
- Magnetic coatings
- Processing fluids

Ordering Information

| DBC                                                                                      |                           |                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Code   Micron                                                                            | Code   Material           | Code   Length (Nominal)                                                                                                                                                                  | Code   End Fitting                                                                                                                                                                                                                                                                                                                                                                                                                  | Code   Seal Material                                                                                                                                                                                                                             |
| 1 1 µm<br>3 3 µm<br>5 5 µm<br>10 10 µm<br>25 25 µm<br>50 50 µm<br>75 75 µm<br>100 100 µm | M FDA Grade Polypropylene | 9-4 9.75" (247 mm)<br>10 10" (254 mm)<br>19-4 19.50" (495 mm)<br>20 20" (508 mm)<br>29-4 29.25" (743 mm)<br>30 30" (762 mm)<br>39-4 39" (991 mm)<br>40 40" (1016 mm)<br>50 50" (1270 mm) | None DOE (w/o gaskets)<br>AR 020 / Flat (Gelman)<br>DO Double open end (DOE)<br>LL 120 O-Ring both ends*<br>LR 120 O-Ring / Recessed*<br>OB Standard open End / Polypro spring closed end<br>PR 213 O-Ring Recessed*<br>SC 226 O-Ring / Flat<br>SF 226 O-Ring / Fin<br>TC 222 O-Ring / Flat<br>TF 222 O-Ring / Fin<br>TX 222 O-Ring / Flex Fin<br>XA DOW w / Extended Core<br>XB Ext. Core open end Polypropylene spring closed end | None No Seal Material (Std DOE)<br>P Poly Foam Gaskets w / Collars (DO only)<br>E EPR<br>N Buna-N<br>S Silicone (O-Ring only)<br>T PFA Encapsulated Viton** (222, 226 O-Ring only)<br>V Viton**<br>W Poly Foam Gaskets without collars (DO only) |

\*Available only in 9.75" [9-4] and 19.5" [19-4]

\*\*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc

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Parker's PROBOND cartridges have a unique proprietary two-stage filtration design to maximise particle removal and service life in viscous fluid applications.

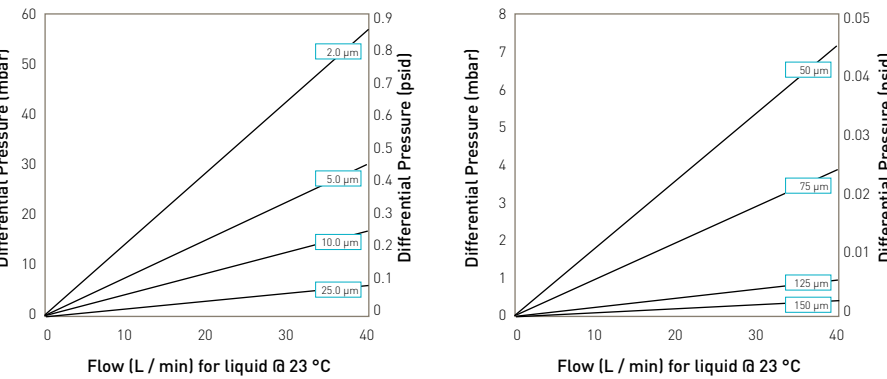
An outer spiral prefilter wrap increases cartridge strength and eliminates residual debris associated with conventional, machined, resin bonded cartridges. This outer wrap collects large particles and agglomerates whilst the inner layers control the particle removal at the rated size. Construction utilizes a phenolic resin impregnation resulting in a cartridge strong enough for use with fluid viscosities up to 3200 centipoise.

PROBOND filter cartridges are available in eight differentiated removal ratings from 2 to 150 micron pore sizes to meet a wide range of performance requirements.

Features and Benefits

- Outer, spiral wrap collects large particles and agglomerates, while inner layers control particle size
- Extra-long acrylic fibres provide added strength; resist breakage and migration common with short fibre cartridges
- Silicone-free construction ensures no contamination to adversely affect adhesion properties of coatings
- One piece construction eliminates bypass concerns with multi-length cartridges and eases change-out

Performance Characteristics



10" Size (250 mm) Cartridge

10" Size (250 mm) Cartridge

PROBOND Depth Filter Cartridges

- resin bonded
- liquid filtration



PROBOND Depth Filter Cartridges

Specifications

Materials of Construction

- 1st Stage Prefilter wrap: Polyester / Acrylic Long staple fibre
- 2nd Stage: Acrylic Long staple fibre Fibres impregnated with Phenolic bonding resin
- End Caps: ABS (Acrylonitrile Butadiene Styrene) or Nylon (NTC)

Recommended Operating Conditions

| Temperature |     | Max. Forward dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | (bar)           | (psid) |
| 21          | 70  | 1.0             | 0.15   |
| 38          | 100 | 8.6             | 0.12   |
| 65          | 149 | 6.2             | 0.08   |
| 82          | 180 | 4.5             | 0.07   |
| 121         | 250 | 1.7             | 0.02   |

Environmental / Chemical Compatibility

- Classified as Non-hazardous material Incinerable (18600 KJ / Kg)
- Crushable and shreadable
- Certified silicone free
- Suitable for weak acids and bases (pH 5-9)
- Not suitable for oxidising agents
- Not suitable for FDA applications

Nomograph for Nominal 10" PROBOND Filter Cartridge



Applications

- Adhesive coatings
- Organic chemicals
- Polymers synthetic and natural
- Industrial coatings
- Pigment slurries

The nomograph will help in sizing new systems. Once the removal rating, liquid viscosity and allowable pressure loss is know (max. 5psi) feed into the nomograph as shown. The result is the maximum recommended flow rate per 10" element. Dividing the actual flow rate by this number will indicate the minimum number of elements required.

Ordering Information

| PRO [ ] - [ ] - [ ] - [ ] |                         |                                       |                           |
|---------------------------|-------------------------|---------------------------------------|---------------------------|
| Code   Pore Size          | Code   Length (Nominal) | Code   End Fitting                    | Code   Seat Material      |
| 2 2 µm                    | 9 9.75" (247 mm)        | Blank DOE (w/o Gaskets)               | Blank No Seal             |
| 5 5 µm                    | 10 10" (254 mm)         | XA Poly Extender                      | E EPR                     |
| 10 10 µm                  | 19 19.50" (500 mm)      | XB Poly Extender / Poly spring closed | S Silicone                |
| 25 25 µm                  | 20 20" (508 mm)         | TC 2-222 / Flat (ABS)                 | N Buna-N                  |
| 50 50 µm                  | 29 29.50" (750 mm)      | NTC 2-222 / Flat (Nylon)              | T PFA Encapsulated Viton* |
| 75 75 µm                  | 30 30" (762 mm)         | C Tinned Steel Core                   | (222, 226 O-ring only)    |
| 125 125 µm                | 39 39" (1000 mm)        | CXC Extended Tinned Steel Core        | V Viton*                  |
| 150 150 µm                | 40 40" (1016 mm)        |                                       | W Poly Foam Gaskets       |

| Minimum Box Quantity |    |
|----------------------|----|
| 10"                  | 40 |
| 20"                  | 20 |
| 30"                  | 20 |
| 40"                  | 20 |

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TEXFLOW precision wound depth filter cartridges are manufactured to give a considerable dirt holding capacity coupled with high flow rates and low pressure loss. TEXFLOW elements consist of a perforated support core of plastic or metal onto which yarn is wound at a pre-set rate, providing each rating of element with its own distinctive winding pattern and performance.

During the winding process the yarn is usually brushed (or napped). This has the effect of increasing the working area of the elements thus providing a higher dirt holding capacity whilst maintaining the rigid structure. Although the cartridges are mainly for liquid filtration, they can also be employed for gases. Other fibres such as polyester, cotton, nylon can operate at higher temperatures and have differing chemical compatibility. For very high temperatures and for very strong oxidising agents, baked glass fibre elements are used. Glass fibre elements are fitted with voiles and stainless steel cores as standard, other cartridges can also be fitted with voiles where necessary.

### Features and Benefits

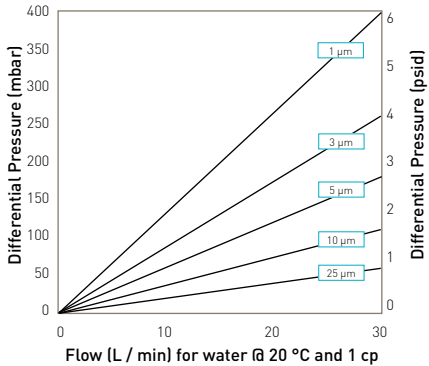
- Protection of absolute filters
  - High dirt holding capacity
- Wide chemical compatibility
  - Filter ratings from 0.5 to 100 microns

## TEXFLOW Filter Cartridges

- liquid filters
- wound depth filters



### Performance Characteristics



10" Size (250 mm) Cartridge

## TEXFLOW Filter Cartridges

### Specifications

#### Materials of Construction

- Filtration Media:

(Various yarns)
- Polyester

Polypropylene

Bleached Cotton

Glass Fibre

Washed Polypropylene

Nylon
- Inner Support Core:
- Polyester

Polypropylene

304 Stainless Steel

316 Stainless Steel

Tinned Steel

Glass / Poly

Glass / Nylon

#### Recommended Operating Conditions

- Maximum Temperature
- with stainless core:
- Cotton

: 149°C (300°F)
- Polypropylene

: 93°C (199°F)
- Polyester

: 121°C (250°F)
- Glass Fibre

: 399°C (750°F)

#### with polypropylene core:

- Cotton

: 60°C (140°F)
- Polypropylene

: 60°C (140°F)
- Polyester

: 60°C (140°F)

#### Maximum Operating Pressure

4 barg (58 psi)

#### Recommended Changeout Pressure

2 barg (29 psi)

#### Cleaning and Sterilisation

TEXFLOW filters can be back-washed for extended life, but generally are treated as "disposable filters".

#### Applications

- Process water
- Plating baths
- Phosphate baths
- Melt polymer filtration
- Spin pack protection
- Polyester

### Ordering Information

#### Cartridges

|                         |               |                         |                       |                 |                    |
|-------------------------|---------------|-------------------------|-----------------------|-----------------|--------------------|
| E                       |               |                         |                       |                 |                    |
| Code   Length (Nominal) | Code   Micron | Code   Yarn             | Code   Core Type      | Code   Diameter | Code   End Fitting |
| 04 4" (100 mm)          | A5 0.5 µm     | 01 Polyester            | 1 Polyester           | 1 62 mm         | 0 DOE              |
| 05 5" (125 mm)          | 01 1 µm       | 02 Polypropylene        | 2 Polypropylene       | 2 50 mm         | 2 Flat / 226       |
| 06 6" (160 mm)          | 03 3 µm       | 04 Bleached Cotton      | 3 304 Stainless Steel | 6 100 mm        | 3 Flat / 222       |
| 09 9.75" (248 mm)       | 05 5 µm       | 06 Glass Fibre          | 5 316 Stainless Steel | 7 66 mm         | 6 Flat / 118 / 020 |
| 10 9.875" (251 mm)      | 10 10 µm      | 07 Nylon                | 7 Tinned Steel        |                 | 7 Fin / 226        |
| 11 10" (254 mm)         | 20 20 µm      | 09 Washed Polypropylene | 8 Glass / Poly        |                 | 8 Fin / 222        |
| 19 19.75" (500 mm)      | 25 25 µm      |                         | 9 Glass / Nylon       |                 | 9 213              |
| 20 20" (508 mm)         | 50 50 µm      |                         |                       |                 |                    |
| 29 29.50" (750 mm)      | 75 75 µm      |                         |                       |                 |                    |
| 30 30" (762 mm)         | 99 100 µm     |                         |                       |                 |                    |
| 39 39.25" (1000 mm)     |               |                         |                       |                 |                    |
| 40 40" (1016 mm)        |               |                         |                       |                 |                    |

As with any addition to a process system, it is important to flush through new filter cartridges before running 'on line'. Standard polypropylene cartridges contain traces of an FDA Glycol Ester Spin Finish which can cause 'foaming' when new. Where this may be a problem e.g. electro plating applications, washed polypropylene elements are recommended.

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# Pleated Filters



## Pleated Filters

Pleated filters from Parker domnick hunter use a greater surface area over traditional wound and meltblown filters to give higher flow rates with excellent retention efficiency. Pleated chemical filters come with a wide range of micron ratings from 0.05 to 100. Specifically designed optimised pleating provides a filter that delivers excellent long term performance in the harshest of process environments.

**POLYFLOW II G** filters are thermally bonded from 100% polypropylene to ensure clean filtrates and excellent thermal and chemical compatibility in the most demanding processing conditions. The random fibre polypropylene depth media provides consistent particle retention.

**FLUOROFLOW** filters feature an all-fluoropolymer construction that provides excellent chemical resistance when used to filter acids, bases & solvents. Available in a wide range of micron ratings, FLUOROFLOW filters are also available in a variety of lengths and different end cap styles, making them easy to retrofit existing products.



## POLYFLOW II Filter Cartridges

- liquid filters
- polypropylene



POLYFLOW II's random fibre polypropylene depth media provides long on-stream life and high retention efficiencies. While many polypropylene depth media are nominally rated and cannot meet their actual claimed retention efficiency, POLYFLOW II has been engineered to meet exacting performance claims.

The all polypropylene construction ensures a broad range of chemical compatibility making POLYFLOW II cartridges particularly suitable for the filtration of aggressive and viscous chemicals and solvents. They do not suffer from hydrolysis in aggressive solutions which would result in the contamination of the process fluid.

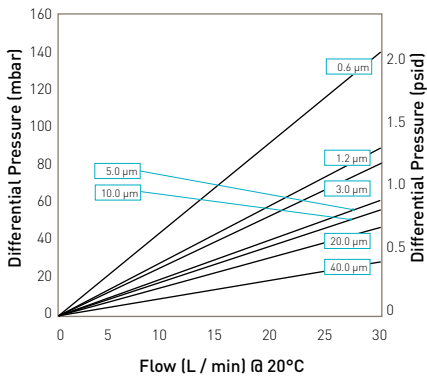
Extensive research has resulted in filter media with continuously graded fibre density giving progressively finer particulate retention through the depth of the media. This combined with optimised media pleating density gives POLYFLOW II cartridges exceptional lifetime performance.

### Features and Benefits

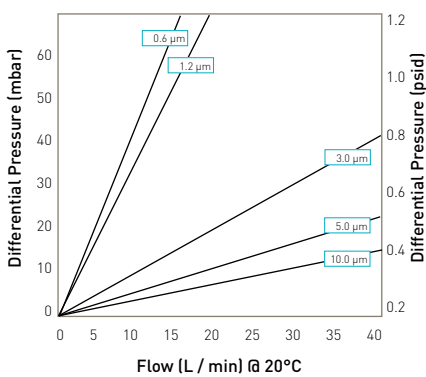
- Broad chemical compatibility allows use in most applications
- Available in 0.6 to 30 micron
- High retention efficiency provides excellent protection for downstream filters
- Available in Disposable and Demi format
- Absolute rated beta 10,000



### Performance Characteristics



10" Size (250 mm) Cartridge



Demi Cartridge

## POLYFLOW II Filter Cartridges

### Specifications

#### Materials of Construction

- Filtration Media : Polypropylene
- Upstream Support : Polypropylene
- Downstream Support : Polypropylene
- Inner Support Core : Polypropylene
- Outer Protection Cage : Polypropylene
- End Caps : Polypropylene
- End Cap Insert : Polypropylene (if applicable)
- Standard o-rings/gaskets : Nitrile

#### Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

| Temperature °C | Temperature °F | Max. Forward dP (bar) | Max. Forward dP (psid) |
|----------------|----------------|-----------------------|------------------------|
| 20             | 68             | 5.0                   | 72.5                   |
| 40             | 104            | 4.0                   | 58.0                   |
| 60             | 140            | 3.0                   | 43.5                   |
| 80             | 176            | 2.0                   | 29.0                   |
| 90             | 194            | 1.0                   | 14.5                   |
| >100 (steam)   | >212 (steam)   | 0.3                   | 4.0                    |

#### Steam Sterilisation

POLYFLOW II cartridges can be repeatedly steam sterilised in situ or autoclaved at up to 130°C (266°F). They can be sanitised with hot water at up to 80°C (176°F). Demi cartridges and capsules can be autoclaved for up to 25 cycles (30 minutes) at 135°C (275°F). They are all compatible with most sanitising agents.

#### Recommended Rinse Volume

Prior to use - 10 litres per 10" (250 mm) filter cartridge.

#### Effective Filtration Area (EFA)

10" (250 mm) 0.5 m<sup>2</sup> (5.38 ft<sup>2</sup>)

#### Retention Characteristics

The retention characteristics of POLYFLOW II have been determined by a single-pass technique using suspensions of ISO 12103 Part 1 A2 Fine and A4 Course test dust in water.

| Media Code | Micron Rating at Various Efficiencies |                |                |            |           |
|------------|---------------------------------------|----------------|----------------|------------|-----------|
|            | >99.99%<br>10000                      | 99.98%<br>5000 | 99.90%<br>1000 | 99%<br>100 | 90%<br>10 |
| 006        | 0.60                                  | 0.57           | 0.54           | 0.32       | 0.20      |
| 012        | 1.20                                  | 0.95           | 0.90           | 0.70       | 0.50      |
| 030        | 3.00                                  | 2.80           | 1.80           | 1.00       | 0.70      |
| 050        | 5.00                                  | 4.70           | 4.50           | 3.50       | 1.00      |
| 100        | 10.00                                 | 8.00           | 7.00           | 4.80       | 2.80      |
| 200        | 20.00                                 | 16.00          | 14.00          | 10.00      | 6.00      |
| 400        | 40.00                                 | 32.00          | 28.00          | 20.00      | 12.00     |

#### Applications

- Solvent filtration
- Liquid clarification
- Recirculating liquid
- General water filtration
- Reagent-grade chemicals
- Final product clarification
- Feedstock filtration

### Ordering Information

#### Cartridges

| Code   Insert style                                                                            | Code   End Fitting                                                                                                                                                                                                 | Code   Length (Nominal)                                                   | Code   Micron                                                                | Code   Seal                                                                                | Code   Gasket Thickness                                                                     |
|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1 None (std)<br>5 Encapsulated Stainless steel<br>6 Encapsulated Polysulphone<br>A* Short neck | 0 DOE (C)<br>1 DOE<br>2 Flat / 226<br>3 Flat / 222<br>6 Flat / 020 / Internal<br>7 Fin / 226<br>8 Fin / 222<br>G 213 / Internal / O-ring DOE<br>H 213 / Internal / O-ring recessed blank<br>R 222 / Recessed Blank | 10 10" (250 mm)<br>20 20" (500 mm)<br>30 30" (750 mm)<br>40 40" (1000 mm) | 006 0.6<br>012 1.2<br>030 3.0<br>050 5.0<br>100 10.0<br>200 20.0<br>400 40.0 | 0 Buna N<br>1 EPDM<br>2 Silicone<br>4 Viton**<br>5* FEP Viton<br>6* FEP Silicone<br>N None | 1 5mm [0.200"]<br>2 3mm [0.125"]<br>4 (1) 5mm [0.200"] and (1) 3mm [0.125"]<br>N No Gaskets |

\*Code 3 and 8 only

\* O-rings only

#### Capsules

| Code   Size                                     | Code   Inlet Connection                                                                                                                                               | Code   Outlet Connection                                                                                                                                              | Code   Micron                                        | Code   Vent O-ring Material                                            |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------|
| H Half Size<br>S Standard Size<br>D Double Size | B 1/4" Hose Barb<br>H 1/2" Hose Barb<br>S 1 1/2" Sanitary Flange<br>D Quick Disconnect<br>P 1/4" NPT (Male)<br>J 1/2" NPT (Male)<br>K 3/8" NPT (Female)<br>G Swagelok | B 1/4" Hose Barb<br>H 1/2" Hose Barb<br>S 1 1/2" Sanitary Flange<br>D Quick Disconnect<br>P 1/4" NPT (Male)<br>J 1/2" NPT (Male)<br>K 3/8" NPT (Female)<br>G Swagelok | 006 0.6<br>012 1.2<br>030 3.0<br>050 5.0<br>100 10.0 | 0 Nitrile<br>1 EPDM<br>2 Silicone<br>4 Viton**<br>N None<br>Z No vents |

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#### Demi Cartridges

| Code   Micron                                        | Code   o-rings                                         |
|------------------------------------------------------|--------------------------------------------------------|
| 006 0.6<br>012 1.2<br>030 3.0<br>050 5.0<br>100 10.0 | 0 Nitrile<br>1 EPDM<br>2 Silicone<br>4 Viton<br>N None |

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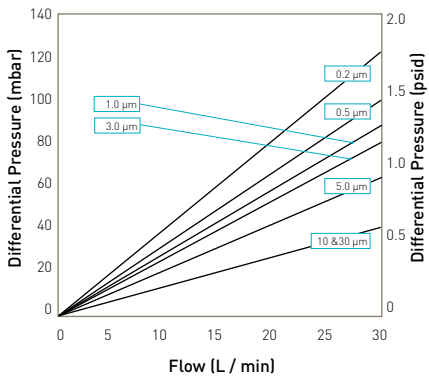
POLYFLOW II G depth media has been developed for a wide variety of general process applications from fluid clarification to general prefiltration. Its high dirt-loading, random- fibre polypropylene depth media provides consistent particle retention.

POLYFLOW II G is thermally bonded from 100% polypropylene to ensure clean filtrates and excellent chemical and thermal compatibility in the most stringent of processing conditions. POLYFLOW II G leads in overall reduction of filtration costs when compared to spunbonded, stringwound, and nominally-rated pleated prefilter cartridges. Its longer filtration life reduces downtime due to change-outs.

Features and Benefits

- High flow rate / long service life reduces processing
- Available in 0.2 to 30 micron
- Broad chemical compatibility allows use in most applications
- 80% efficiency

Performance Characteristics



10" Size (250 mm) Cartridge

POLYFLOW II G Filter Cartridges

- liquid filters
- polypropylene



POLYFLOW II G Filter Cartridges

Specifications

Materials of Construction

- Filtration Media : Polypropylene
- Upstream Support : Polypropylene
- Downstream Support : Polypropylene
- Inner Support Core : Polypropylene
- Outer Protection Cage : Polypropylene
- End Caps : Polypropylene
- End Cap Insert : Polypropylene (if applicable)
- Standard o-rings/gaskets : Nitrile

Maximum Operating Temperature  
71°C (160°F)

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

| Temperature  |              | Max. Forward dP |        |
|--------------|--------------|-----------------|--------|
| °C           | °F           | (bar)           | (psid) |
| 20           | 68           | 5.0             | 72.5   |
| 40           | 104          | 4.0             | 58.0   |
| 60           | 140          | 3.0             | 43.5   |
| 80           | 176          | 2.0             | 29.0   |
| 90           | 194          | 1.0             | 14.5   |
| >100 (steam) | >212 (steam) | 0.3             | 4.0    |

Effective Filtration Area (EFA)

10" (250 mm) 0.33 m² (3.22 ft²)

Applications

- Solvent filtration
- Liquid clarification
- Recirculating liquid
- Reagent-grade chemicals

Ordering Information

P2 G 0 - -

| Code   Insert style                | Code   End fitting                       | Code   Length (Nominal) | Code   Micron | Code   Seal     | Code   Gasket / O-rings                 |
|------------------------------------|------------------------------------------|-------------------------|---------------|-----------------|-----------------------------------------|
| 1 None (std)                       | 0 DOE (C)                                | 10 10" (250 mm)         | 002 0.2       | 0 Buna N        | 1 5mm (0.200")                          |
| 5 Encapsulated 316 Stainless Steel | 1 DOE                                    | 20 20" (500 mm)         | 005 0.5       | 1 EPDM          | 2 3mm (0.125")                          |
| 6 Encapsulated Polysulphone        | 2 Flat / 226                             | 30 30" (750 mm)         | 010 1.0       | 2 Silicone      | 4 (1) 5mm (0.200") and (1) 3mm (0.125") |
| A* Short neck                      | 3 Flat / 222                             | 40 40" (1000 mm)        | 030 3.0       | 4 Viton*        | N No Gaskets                            |
|                                    | 6 Flat / 020 / Internal                  |                         | 050 5.0       | 5* FEP Viton    |                                         |
|                                    | 7 Fin / 226                              |                         | 100 10.0      | 6* FEP Silicone |                                         |
|                                    | 8 Fin / 222                              |                         | 300 30.0      | N None          |                                         |
|                                    | G 213 / Internal / O-ring DOE            |                         |               |                 |                                         |
|                                    | H 213 / Internal / O-ring recessed blank |                         |               |                 |                                         |
|                                    | R 222 / Recessed Blank                   |                         |               |                 |                                         |

\*Code 3 and 8 only

\* O-rings only

| Minimum Box Quantity |    |
|----------------------|----|
| 5"                   | 12 |
| 10"                  | 28 |
| 20"                  | 12 |
| 30"                  | 12 |
| 40"                  | 9  |

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# GLAS-TECH II Filter Cartridges

- liquid filters
- glass microfibre

GLAS-TECH II filter cartridges offer an economical prefiltration solution for both liquids and gases. Providing excellent flow rates and long service life with an exceptional ability to retain both deformable and non-deformable particles.

GLAS-TECH II is made using components of construction that provide optimal results in a wide variety of prefiltration applications. GLAS-TECH II cartridge is a nominally-rated borosilicate microfibre depth matrix that has an exceptionally high dirt-holding capacity. The natural, positive charge of the glass fibre also aids in the retention of negatively charged particulates such as colloidal materials.

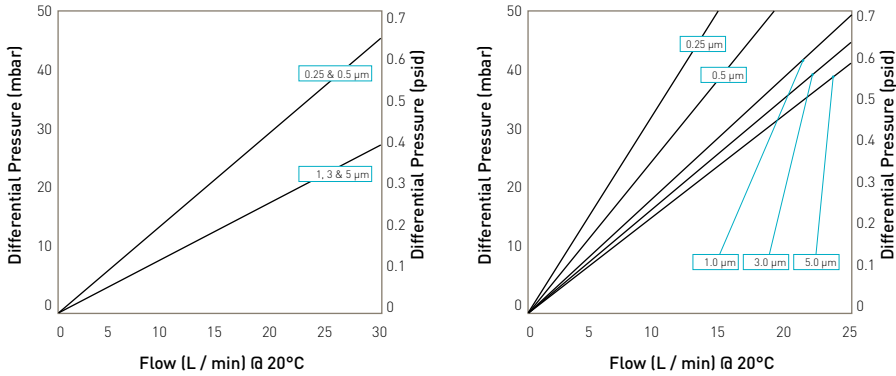
Thermal bonding helps to ensure stability through multiple steam cycles. The pleat geometry for each micron rating has been individually optimised to ensure stability through long service life and maximum dirt-loading in the most stringent of processing conditions

### Features and Benefits

- High flow rate reduces processing time
- Long service life minimises change-out frequency
- Thermally resistant for use under aggressive conditions
- Natural positive charge enhances particle retention



### Performance Characteristics



10" Size (250 mm) Cartridge

5" Size (130 mm) Cartridge

# GLAS-TECH II Filter Cartridges

### Specifications

#### Materials of Construction

|                  |                                       |
|------------------|---------------------------------------|
| Filtration Media | : Glass Microfibre                    |
| Media Binder     | : Acrylic                             |
| Support Layers   | : Polyester                           |
| Structure        | : Polypropylene                       |
| Standard O-rings | : Buna N<br>EPDM<br>Silicone<br>Viton |

#### Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

| Temperature |     | Max. Forward dP |       |
|-------------|-----|-----------------|-------|
| °C          | °F  | (bar)           | (psi) |
| 24          | 75  | 5.5             | 80    |
| 80          | 176 | 2.1             | 30    |

Maximum Operating Conditions  
71°C (160°F)

#### Cleaning and Sterilisation

Cartridges with encapsulated inserts may be steam sterilised for multiple cycles at 130°C (266°F) or sanitised for a least ten 30 minute cycles using 80°C (176°F) water. They are also compatible with most other sanitising agents.

For detailed operations procedures and advice on cleaning and sterilisation, please contact the Technical Support Group through your usual domnick hunter contact.

### Applications

- Cutting oils
- Cosmetics
- High viscosity solutions
- General filtration

### Ordering Information

#### Cartridges

| Code   Insert Style                                                                                 | Code   End Fitting                                                                                                                                                                               | Code   Length (Nominal)                                                                     | Code   Micron                                        | Code   Seal                                                                                | Code   Gasket Thickness                                                                     |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1 None (std)<br>5 Encapsulated 316L Stainless Steel<br>6 Encapsulated Polysulphone<br>A* Short Neck | 0 DOE<br>1 DOE<br>2 Flat / 226<br>3 Flat / 222<br>6 Flat / 020 / Internal<br>7 Fin / 226<br>8 Fin / 222<br>G 120 / Internal / Recessed Endcap<br>H 213 Recessed Endcap<br>R 222 / Recessed Blank | 05 5" (130 mm)<br>10 10" (250 mm)<br>20 20" (500 mm)<br>30 30" (750 mm)<br>40 40" (1000 mm) | 002 0.25<br>050 0.5<br>010 1.0<br>030 3.0<br>050 5.0 | 0 Buna N<br>1 EPDM<br>2 Silicone<br>4 Viton**<br>5* FEP Viton<br>6* FEP Silicone<br>N None | 1 5mm (0.200")<br>2 3mm (0.125")<br>4 (1) 5mm (0.200") and (1) 3mm (0.125")<br>N No Gaskets |

\*code 3 and 8 only

\* o-rings only

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The PLEATFLOW range of filter cartridges offer the ideal solution for pre and final filtration of a wide variety of process liquids and gases, giving long service life at minimal cost. PLEATFLOW filter's offer an absolute rated, cost effective, high surface area pleated process filters.

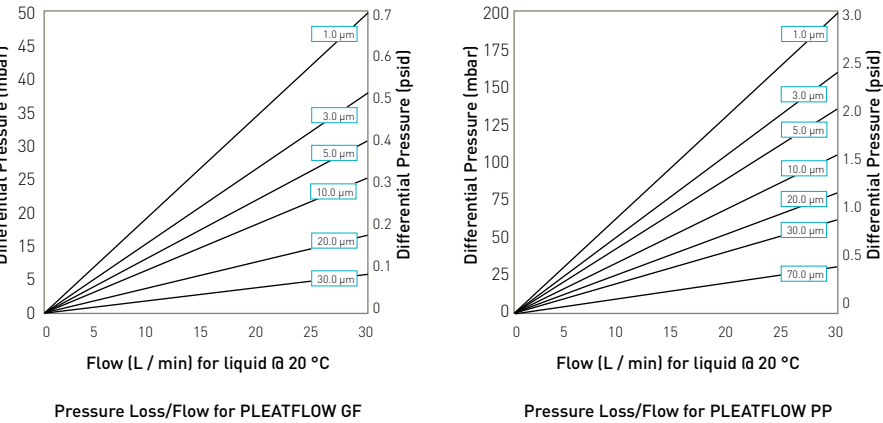
PLEATFLOW is manufactured utilising graded density media, and is available in a variety of materials, making the filter suitable for use in a wide range of process applications.

The 100% polypropylene hardware construction of the filter cartridges ensures minimum extractable levels with a range of Industrial solvents and gases, and guaranteed integrity when used in physically demanding applications.

Features and Benefits

- Absolute rating from 1.0 to 75 microns
- Available in 4" to 40" formats
- Endcaps available to retrofit all standard industry housings
- Minimum extractables with Industrial solvents and gases

Performance Characteristics



10" Size (250 mm) Cartridge

PLEATFLOW Filter Cartridges

- liquid filters
- polyester, glass fibre, polypropylene, cellulose



PLEATFLOW Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Polyester, Glass Fibre / Polyester, Cellulose, Polypropylene / Polyester, Polypropylene
- Inner Support Core: Polypropylene / Stainless Steel
- Outer Protection Cage: Rigid outer (Polypropylene), Net (Polyethelene)
- Endcaps: Polypropylene / Nylon
- Standard o-rings / Gaskets: Nitrile, EPDM, Silicone, Viton, Polyethylene

Recommended Operating Conditions

Maximum Temperature: 65°C (149°F)  
Maximum Differential Pressure: 4 barg (58 psid)  
Recommended Changeout Pressure: 2.5 barg (36 psid)

| Micron Rating | Liquid Service          |                              |
|---------------|-------------------------|------------------------------|
|               | 90% Efficiency (micron) | Absolute Efficiency (micron) |
| 1             | 0.25                    | 1.0                          |
| 2             | 0.5                     | 2.0                          |
| 3             | 0.75                    | 3.0                          |
| 5             | 1.0                     | 5.0                          |
| 10            | 3.0                     | 10.0                         |
| 20            | 10.0                    | 20.0                         |
| 35            | 15.0                    | 35.0                         |
| 50            | 25.0                    | 50.0                         |

Effective Filtration Area

Polypropylene up to 0.55 m² (5.9 ft²) per 250 mm (10" module)

Glass Fibre up to 0.48 m² (5.2 ft²) per 250 mm (10" module)

NOTE: PLEATFLOW GF and PP cartridges can be manufactured to meet the requirements of the food processing industry and are designed to operate at a maximum working temperature of 65°C (149°F) and maximum differential pressure of 4 barg. If applications require temperatures and pressures beyond these limits Parker domnick hunter can fit elements with stainless steel cores and end caps.

Applications

- Re-circulating liquids
- Reagent grade chemicals
- Make-up and wash waters
- Membrane prefiltration
- Oils and acids
- Alkalies
- Solvents
- Catalyst recovery

Ordering Information

| Code   Length (Nominal)                                                                                                                                                                                                                       | Code   Micron                                                                                                                                     | Code   Media                                                                                                   | Code   Core / Endcap                                                                                                                 | Code   Outer Cage                                                                                                                                                                                                 | Code   End Fitting                                                                                                                                    | Code   Seal Material                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| 04 4" (100 mm)<br>05 5" (125 mm)<br>06 6" (160 mm)<br>09 9.75" (247 mm)<br>10 9.875" (251 mm)<br>11 10" (254 mm)<br>19 19.75" (500 mm)<br>20 20" (508 mm)<br>29 29.50" (750 mm)<br>30 30" (762 mm)<br>39 39.25" (1000 mm)<br>40 40" (1016 mm) | 01 1* µm<br>02 2* µm<br>03 3* µm<br>05 5 µm<br>10 10 µm<br>20 20 µm<br>25 25 µm<br>30 30 µm<br>35 35 µm<br>50 50 µm<br>75 75** µm<br>99 100*** µm | 01 Polyester<br>02 Glass Fibre / Polyester<br>03 Cellulose<br>04 Polypropylene / Polyester<br>T5 Polypropylene | 1 Zintec<br>2 Polypropylene<br>3 S.S. / Nylon<br>4* All Stainless Steel<br>5 Stainless Steel<br>8 Polypropylene<br>Glass Poly / Poly | 1 Black net<br>2 Blue net<br>3 Green net<br>4 Natural net<br>5 Red net<br>6 Orange net<br>7 Rigid net (standard)<br>8 Heavy duty<br>9 Rigid outer (d60) RN221<br>0 No outer cage<br>Z Zintec<br>S Stainless Steel | 0 Double open end<br>2 Flat / 226<br>3 Flat / 222<br>6 Flat / 118 / 020<br>7 Fin / 226<br>8 Fin / 222<br>S Single open end<br>T Flat (no recess) +222 | E EPDM<br>N Nitrile<br>S Silicone<br>V Viton****<br>O No gasket |

\* DOE only

\* Not cellulose  
\*\* Polypropylene only  
\*\*\* Polyester only

Cartridge lengths are measured over end cap shoulders. For DOE type cartridge lengths are measured over gaskets. Standard elements have diameter 2.7" (68mm) In nominal lengths of 10, 20, 30, 40 inches (250, 500, 750, 1000mm) Other dimensions available on request.

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PLEATFLOW II Filter Cartridges

- liquid filters
- glass fibre, polypropylene



PLEATFLOW II is an absolute rated filter cartridge employing either glass fibre or polypropylene filter media, thermally bonded into rugged polypropylene hardware and offers unsurpassed chemical compatibility and performance.

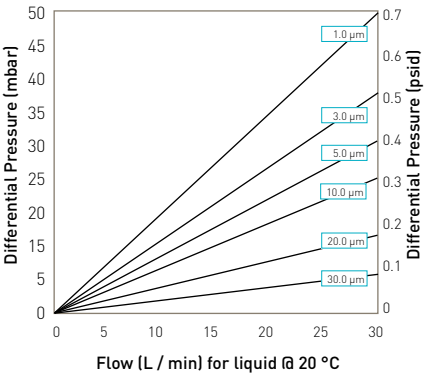
Pleatpack optimisation ensures higher throughputs, low pressure loss, high dirt capacity, long on stream life and lower filtration costs. Thermal bonding of the assembly not only guarantees the cartridge integrity but also benefits users by eliminating the need for glues or adhesives, thus minimizing levels of extractables. PLEATFLOW II can be employed in applications such as pharmaceutical preparations and concentrated acids. They are generally employed in the clarification and prefiltration of liquids but can also be used in gasses. PLEATFLOW II are manufactured to exacting quality standards in absolute ratings from 1 to 70 microns, lengths up to 40" and with a variety of end fittings to suit most industrial housings.



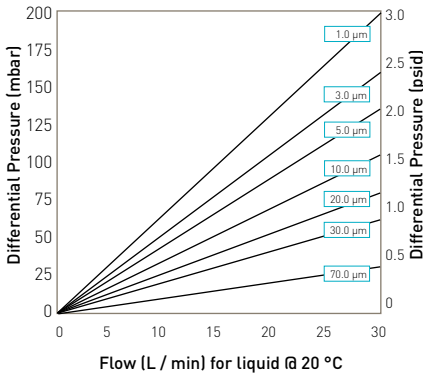
Features and Benefits

- Absolute rating from 1 to 70 microns
- Wide chemical compatibility
- Available in 10" to 40" formats
- Glass fibre or polypropylene media
- 99.9% efficiency

Performance Characteristics



Pressure Loss/Flow for PLEATFLOW II GF



Pressure Loss/Flow for PLEATFLOW II PP

10" Size (250 mm) Cartridge

10" Size (250 mm) Cartridge

PLEATFLOW II Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Polypropylene, Glass Fibre
- Glass Support: Polypropylene
- Polypropylene Support: Polypropylene
- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene
- Endcaps: Stainless Steel or Polyethersulphone
- Standard o-rings / Gaskets: Nitrile, EPDM, Silicone, Viton

Technical Specification

- Materials of Construction
- Filter Media: FDA approved Glass Fibre or Polypropylene
- Drain Layers: FDA approved Polyester or Polypropylene
- Hardware: FDA approved Polypropylene

Filter efficiency 99.98% in liquids as established by standard OSU-F2 particle test using AC Fine/coarse test dust.

Recommended Operating Conditions

- Maximum Temperature: 85°C (60°F continuous)
- Maximum Differential Pressure: 5.5 barg (80 psid)
- Recommended Changeout Pressure: 2.5 barg (36 psid)

Effective Filtration Area

Polypropylene up to 0.55 m² (5.2 ft²) per 250 mm (10" module)

Glass Fibre up to 0.48 m² (4.5 ft²) per 250 mm (10" module)

Applications

- Membrane pre-filtration
- Solvents
- Chemical filtration
- Resins and emulsions
- Inks and paints

Ordering Information

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| Code   Material                    | Code   Insert Style                                                          | Code   End Fitting                                                                                 | Code   Length (Nominal)                                                                                             | Code   Micron                                                                         | Code   Seat Material                            | Code   Gasket Thickness                              |
|------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------|
| 2G Glass Fibre<br>2P Polypropylene | 1 Standard<br>5 Encapsulated Stainless Steel<br>6 Endcapsulated Polysulphone | 1 DOE<br>2 Flat / 226<br>3 Flat / 222<br>6 Flat / 118 / 020<br>7 Fin / 226<br>8 Fin / 222<br>H 213 | 10 9.95" (251 mm)<br>20 20" (508 mm)<br>30 30" (762 mm)<br>40 40" (1016 mm)<br><i>Standard diameter 2.7" (68mm)</i> | 010 1 μm<br>030 3 μm<br>050 5 μm<br>100 10 μm<br>200 20 μm<br>300 30 μm<br>700**70 μm | 0 EPDM<br>1 Nitrile<br>2 Silicone<br>4 Viton*** | DOE only<br>1 5.08" (0.200 mm)<br>2 3.18" (0.125 mm) |

\*\* PP only

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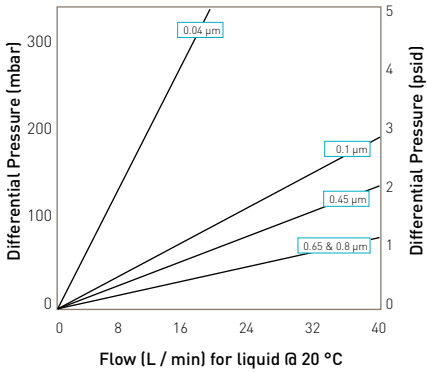
CLARIFLOW General Grade cartridges are designed for general purpose use in the filtration of high-purity liquids. The mirrored anisotropic Polyethersulfone (PES) membrane is inherently hydrophilic and has a pore morphology that delivers exceptionally high flow rates.

Because there are no added surfactants or wetting agents, and the support layers and structure are all Polypropylene, the filter exhibits low extractables, broad chemical compatibility and good resistance to hydrolysis.

Features and Benefits

- Broad chemical compatibility allows use in most applications
- Low differential pressure reduces system wear and tear
- Thermally bonded construction minimises extractables for cleaner filtrates

Performance Characteristics



10" Size (250 mm) Cartridge

CLARIFLOW G Filter Cartridges

- liquid filters
- polyethersulphone



CLARIFLOW G Filter Cartridges

Specifications

- Materials of Construction
- Filtration Membrane: Polyethersulfone (PES)
  - Support Layers: Polypropylene
  - Inner Support Core: Polypropylene
  - Outer Protection Cage: Polypropylene
  - Standard o-rings: EPDM / gaskets

Recommended Operating Conditions

| Temperature |     | Max. Forward dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | (barg)          | (psid) |
| 24          | 75  | 5.5             | 80     |
| 82          | 180 | 2.8             | 40     |

| Temperature |    | Max. Reverse dP |        |
|-------------|----|-----------------|--------|
| °C          | °F | (barg)          | (psid) |
| 24          | 75 | 3.4             | 50     |

Effective Filtration Area  
0.63 m² (6.8 ft²) per 10 inch (250 mm) cartridge

- Applications
- Water filtration
  - High purity liquids
  - Aqueous chemicals
  - Deionized water systems

Ordering Information

25 - 10 - - - G

| Code   End Fitting    | Code   Length (Nominal) | Code   Filter Rating | Code   Gasket o-rings        | Code   Gasket Thickness |
|-----------------------|-------------------------|----------------------|------------------------------|-------------------------|
| 0 DOE (Cuno®)         | 10 10" (250 mm)         | 924 0.04             | 0 Buna N                     | DOE only                |
| 1 DOE                 | 20 20" (500 mm)         | 001 0.1              | 1 EPDM (standard)            | 1 0.20" (5 mm)          |
| 2 Flat /226           | 30 30" (750 mm)         | 002 0.2              | 2 Silicone                   | 2 1.25" (3 mm)          |
| 3 Flat / 222          | 40 40" (1000 mm)        | 004 0.45             | 4 Viton                      | 4 0.2" (5 mm) (1) &     |
| 6 Flat / 020 Internal |                         | 006 0.65             | 5* FEP-Encapsulated Viton    | 0.125" (3 mm) (1)       |
| 7 Fin / 226           |                         | 008 0.8              | 6* FEP-Encapsulated Silicone | N No gasket             |
| 8 Fin / 222           |                         |                      | N None                       |                         |

\* o-rings only

| Minimum Box Quantity |    |
|----------------------|----|
| 10"                  | 28 |
| 20"                  | 12 |
| 30"                  | 12 |
| 40"                  | 9  |

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Hydrophilic Polyethersulphone membrane for aqueous liquid filtration applications. CLARIFLOW WG are a cost effective alternative to the CLARIFLOW Electronics and General Grade cartridges.

CLARIFLOW WG water grade cartridges are designed for general purpose use in the filtration of high purity liquids and aqueous chemicals.

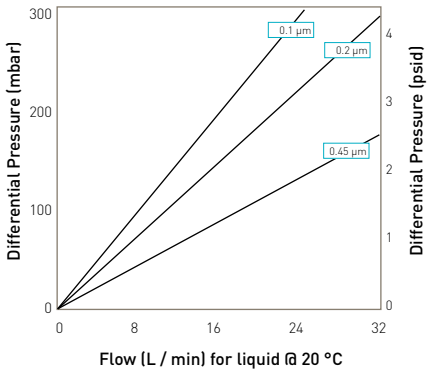
The mirrored ansiotropic polyethersulphone membrane is inherently hydrophilic and has a pore morphology that delivers exceptionally high flow rates.

Because there are no added surfactants or wetting agents and the support layers and hardware are all polypropylene, the filter exhibits low extractables, broad chemical compatibility and good resistance to hydrolysis.

Features and Benefits

- Absolute rated membrane
- Resistance to hydrolysis allows extended use in UPW systems
- Reliable and cost-effective
- High flow rate / low differential pressure reduces system wear and tear
- Broad chemical compatibility allows use in aqueous applications

Performance Characteristics



10" Size (250 mm) Cartridge

CLARIFLOW WG Filter Cartridges

- liquid filters
- polyethersulphone



CLARIFLOW WG Filter Cartridges

Specifications

Materials of Construction

- Filtration Membrane: Polyethersulfone (PES)
- Support Layers: Polypropylene
- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene

All components meet USP-XXIV Class VI-121°C criteria and are thermally bonded to assure integrity and purity.

Recommended Operating Conditions

| Temperature |     | Max. Forward dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | (barg)          | (psid) |
| 24          | 75  | 5.5             | 80     |
| 82          | 180 | 2.8             | 40     |

| Temperature |    | Max. Reverse dP |        |
|-------------|----|-----------------|--------|
| °C          | °F | (barg)          | (psid) |
| 24          | 75 | 3.4             | 50     |

Effective Filtration Area

0.50 m² (5.4 ft²) per 10 inch (250 mm)

Applications

- Water filtration
- High purity liquids
- Aqueous chemicals
- Deionized water systems

Ordering Information

25 -  0  -  -  -  - WG

| Code   Insert Style                | Code   End Fitting                         | Code   Length (Nominal) | Code   Filter Rating | Code   Gasket o-rings        | Code   Gasket Thickness |
|------------------------------------|--------------------------------------------|-------------------------|----------------------|------------------------------|-------------------------|
| 1 No insert (standard)             | 0 DOE (Cuno®)                              | 10 10" (250 mm)         | 001 0.1              | 0 Buna N                     | DOE only                |
| 5 Encapsulated 316 SS Insert       | 1 DOE                                      | 20 20" (500 mm)         | 002 0.2              | 1 EPDM (standard)            | 1 0.200" (5 mm)         |
| 6 Encapsulated Polysulphone Insert | 2 Flat /226                                | 30 30" (750 mm)         | 004 0.45             | 2 Silicone                   | 2 1.25" (3 mm)          |
| A 1/2" Shortened Filter Only       | 3 Flat / 222                               | 40 40" (1000 mm)        |                      | 4 Viton®                     | 4 0.20" (5 mm) (1) &    |
|                                    | 6 Flat / 020 Internal                      |                         |                      | 5* FEP-Encapsulated Viton®   | 0.125" (3 mm) (1)       |
|                                    | 7 Fin / 226                                |                         |                      | 6* FEP-Encapsulated Silicone | N No gasket             |
|                                    | 8 Fin / 222                                |                         |                      | N None                       |                         |
|                                    | G 120 / Internal / Recessed Endcap         |                         |                      |                              |                         |
|                                    | H 213 Internal / Recessed Endcap           |                         |                      |                              |                         |
|                                    | R 213 Internal / Recessed Endcap (Ametek®) |                         |                      |                              |                         |
|                                    | 222 / Recessed Endcap                      |                         |                      |                              |                         |

All cartridges are 2.75" (69 mm) in diameter

\* o-rings only

| Minimum Box Quantity |    |
|----------------------|----|
| 10"                  | 28 |
| 20"                  | 12 |
| 30"                  | 12 |
| 40"                  | 9  |

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FLUOROFLOW Filter Cartridges

- liquid filters
- polytetrafluoroethylene (PTFE)

FLUOROFLOW pleated filter cartridges feature an all-Fluoropolymer construction that provides excellent chemical resistance in filtration of acids, bases and solvents.

FLUOROFLOW filters fit in standard filter housings and are available in a variety of filter ratings, lengths and end fittings for maximum versatility. The all flouropolymer construction provides excellent chemical resistance for the most aggressive applications up to 150°C (302°F).

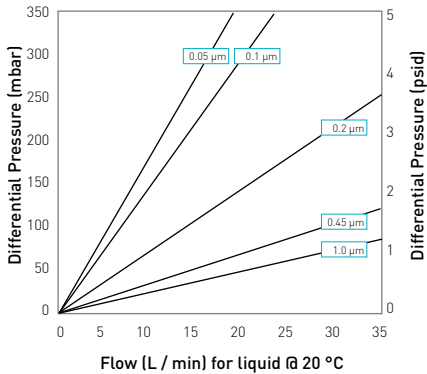
FLUOROFLOW filters are available flushed with ozonated UPW to further minimise extractables or wet-packed to eliminate on-site wetting for use in aqueous applications.



Features and Benefits

- Chemical resistance process capability and compatibility
- All filters are 100% integrity tested to assure reliable product performance
- Wet-packed option eliminates lengthy wetting procedure and minimises equipment downtime
- Available in 0.05 to 100 microns

Performance Characteristics



10" Size (250 mm) Cartridge

FLUOROFLOW Filter Cartridges

Specifications

Materials of Construction

- Filtration Membrane: Polytetrafluoroethylene (PTFE)
- Upstream Support: Polytetrafluoroethylene (PTFE)
- Downstream Support: Polytetrafluoroethylene (PTFE)
- Inner Support Core: PFA
- Outer Protection Cage: PFA
- End Caps: PFA
- Standard o-rings: FEP Encapsulated Silicone

Particle Shedding

Wet-packed <2 particles / ml >0.2µm after 26.5L @ 3.8L / min

Dry-packed <2 particles / ml >0.2µm after 26.5L @ 3.8L / min

Metals Extractables

<20ppb (total) in a 10% HN03 extraction of 1.5 litres for 24 hours at ambient temperatures.

Effective Filtration Area (EFA)  
10" (250 mm) 0.63 m² {6.8 ft²}

Recommended Operating Conditions

| Temperature |     | Max. Forward dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | (bar)           | (psid) |
| 24          | 75  | 5.5             | 80.0   |
| 75          | 167 | 3.8             | 55.0   |
| 125         | 257 | 2.0             | 30.0   |
| 150         | 302 | 1.0             | 15.0   |

| Micron Rating                            |        | 0.05 | 0.10 | 0.20 | 0.45 | 1.00 |
|------------------------------------------|--------|------|------|------|------|------|
| Bubble Point (60 / 40 IPA/Water at 25°C) |        |      |      |      |      |      |
| Min. Bubble Point                        | (barg) | 2.8  | 1.5  | 0.9  | 0.5  | 0.2  |
|                                          | (psig) | 40.6 | 21.7 | 13.0 | 7.2  | 2.9  |

Applications

- Aggressive acids, bases and solvents
- Photolithography chemicals
- Ozonated and / or hot UPW

Ordering Information

33 - 14 - - E

| Code   End Fitting | Code   Length (Nominal) | Code   Micron        | Code   Gasket / O-rings | Code   Options Treatment |
|--------------------|-------------------------|----------------------|-------------------------|--------------------------|
| 2 226 / Flat       | 04 4" (125 mm)          | 925 0.05 µm          | 2 Silicone              | Blank UPW Flush          |
| 3 222 / Flat       | 10 10" (250 mm)         | 001 0.1 µm           | 4 Viton                 | F Ozone UPW Flush        |
| 7 226 / Fin        | 20 20" (500 mm)         | 002 0.2 µm           | 5 FEP-Endcapsulated     | W Wet Packed             |
| 8 222 / Fin        | 30 30" (750 mm)         | 004 0.45 µm          | Viton*                  |                          |
|                    | 40 40" (1000 mm)        | 010 1.0 µm           | FEP-Encapsulated        |                          |
|                    |                         | 503 100 µm (nominal) | Silicone                |                          |
|                    |                         |                      | 7 Chemraz               |                          |
|                    |                         |                      | N None                  |                          |

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## FLUOROFLOW-SELECT Filter Cartridges

- liquid filters
- polytetrafluoroethylene (PTFE)

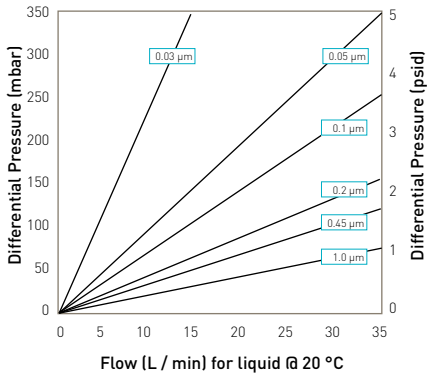
With FLUOROFLOW-SELECT filter cartridges, exceptional flow rates and on-stream life can be obtained in high temperature processes. The Select membrane pleat design results in higher flow rates and greater filter life and less down-time than a standard pleated configuration. The cartridge's all-fluoropolymer construction offers excellent chemical resistance.



### Features and Benefits

- All fluoropolymer construction
- All filters are 100% integrity tested
- High flow rate increases throughput
- Select pleating provides high flow rates
- Compatible with most standard filter housings
- High temperature available

### Performance Characteristics



Typically more than 44 scfm / psid for 0.05µm, more than 61 scfm / psid for 0.1µm and more than 82 for 0.2µm

10" Size (250 mm) Cartridge

## FLUOROFLOW-SELECT Filter Cartridges

### Specifications

#### Materials of Construction

- Filtration Membrane: Polytetrafluoroethylene (PTFE)
- Upstream Support: Polytetrafluoroethylene (PTFE)
- Downstream Support: Polytetrafluoroethylene (PTFE)
- Inner Support Core: PFA
- Outer Protection Cage: PFA
- End Caps: PFA
- Standard o-rings: FEP Encapsulated Silicone

#### Select Pleating



#### Effective Filtration Area (EFA)

4" (100 mm) 0.56 m<sup>2</sup> (6.0 ft<sup>2</sup>)  
10" (250 mm) 1.1 m<sup>2</sup> (12.2 ft<sup>2</sup>)

#### Recommended Operating Conditions

| Temperature |     | Max. Forward dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | [bar]           | [psid] |
| 24          | 75  | 5.5             | 80.0   |
| 75          | 167 | 3.8             | 55.0   |
| 125         | 257 | 2.0             | 30.0   |
| 150         | 302 | 1.0             | 15.0   |

| Temperature |     | Max. Reverse dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | [bar]           | [psid] |
| 24          | 75  | 3.4             | 50.0   |
| 121         | 250 | 1.0             | 15.0   |

#### Integrity Test Values

| Micron Rating    |        | 0.05 | 0.1 | 0.2 | 0.45 | 1.0 |
|------------------|--------|------|-----|-----|------|-----|
| Diffusional Flow | [bar]  | 2.8  | 1.5 | 0.9 | 0.5  | 0.2 |
| Test Pressure    | [psig] | ≥40  | ≥21 | ≥13 | ≥7   | ≥3  |

Tested in 60/40 IPA/DI water @ 25°C (77°F)

#### Particle Shedding

Wet-packed <2 particles / ml >0.2 µm after 26.5L @ 3.8L / min

Dry-packed <2 particles / ml >0.2 µm after 26.5L @ 3.8L / min

#### Metals Extractables

<20ppb (total) in a 10% HN03 extraction of 1.5 litres for 24 hours at ambient temperatures.

#### Applications

- Aggressive acids, bases and solvents
- Photolithography chemicals
- Ozonated and / or hot UPW

### Ordering Information

FS - 18



| Code | End Fitting |
|------|-------------|
| 2    | 226 / Flat  |
| 3    | 222 / Flat  |
| 7    | 226 / Fin   |
| 8    | 222 / Fin   |

| Code | Length (Nominal) |
|------|------------------|
| 04   | 4" (125 mm)      |
| 10   | 10" (250 mm)     |
| 20   | 20" (500 mm)     |
| 30   | 30" (750 mm)     |
| 40   | 40" (1000 mm)    |

| Code | Micron  |
|------|---------|
| 423  | 0.03 µm |
| 925  | 0.05 µm |
| 001  | 0.1 µm  |
| 002  | 0.2 µm  |
| 004  | 0.45 µm |
| 010  | 1.0 µm  |

| Code | Gasket / O-rings          |
|------|---------------------------|
| 2    | Silicone                  |
| 4    | Viton*                    |
| 5    | FEP-Endcapsulated Viton   |
| 6    | FEP-Encapsulated Silicone |
| 7    | Chemraz                   |
| D    | Kalrez                    |
| N    | None                      |

| Code  | Options Treatment |
|-------|-------------------|
| Blank | UPW Flush         |
| F     | Ozone UPW Flush   |
| W     | Wet Packed        |

\*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc

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FLUOROCAP encapsulated filters feature an all-fluoropolymer pleated filter cartridge for excellent chemical resistance in aggressive chemical applications.

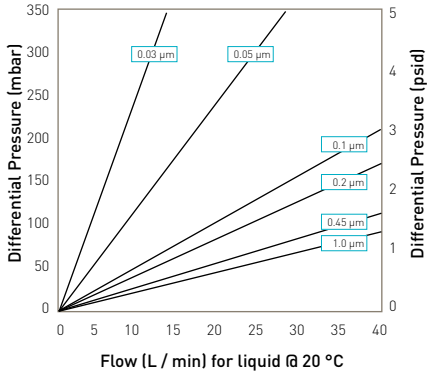
The integral filter design maximises up-time by providing faster and easier change-out without laborious cleaning protocols. Because the replacement of filter elements is eliminated, the chance of introducing contamination into the process is minimised. FLUOROCAP increases the level of safety, and reduces the risk of exposure to hazardous materials.

The FLUOROCAP family of filters offers excellent resistance in aggressive chemical applications. FLUOROCAP filters are available in increasing flow rate and higher temperature capabilities. FLUOROCAP family are available flushed with ozonated UPW to further minimise extractables or wet-packed to eliminate on-site wetting for use in aqueous applications.

### Features and Benefits

- Chemical resistance process capability and compatibility
  - Wet-packed option eliminates lengthy wetting procedure and minimises equipment downtime
  - Available in 0.03 to 1.0 microns
- All filters are 100% integrity tested to assure reliable product performance
  - Capsules reduce downtime, chance of contamination and risk of exposure to hazardous materials during filter change

### Performance Characteristics



10" Size (250 mm) Cartridge

## FLUOROCAP Filter Cartridges

- liquid filters
- polytetrafluoroethylene (PTFE) capsule



## FLUOROCAP Filter Cartridges

### Specifications

#### Materials of Construction

100% Fluoropolymer construction

All components are thermally bonded to ensure integrity and reduce extractables

- O-rings:
- Silicone

Viton

FEP-Encapsulated Viton

FEP-Encapsulated Silicone

Chemraz

Kalrez

#### Effective Filtration Area (EFA)

10" (250 mm) 0.9 m<sup>2</sup> (9.8 ft<sup>2</sup>)

#### Recommended Operating Conditions

| Temperature |     | Max. Forward dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | (bar)           | (psid) |
| 24          | 75  | 5.5             | 80.0   |
| 75          | 167 | 3.8             | 55.0   |
| 125         | 257 | 2.0             | 30.0   |
| 150         | 300 | 1.0             | 15.0   |

| Temperature |     | Max. Reverse dP |        |
|-------------|-----|-----------------|--------|
| °C          | °F  | (bar)           | (psid) |
| 24          | 75  | 34              | 50.0   |
| 121         | 250 | 1.0             | 15.0   |

#### Integrity Test Values

| Micron Rating    |        | 0.05 | 0.1 | 0.2 | 0.45 | 1.0 |
|------------------|--------|------|-----|-----|------|-----|
| Diffusional Flow | (bar)  | 2.8  | 1.5 | 0.9 | 0.5  | 0.2 |
| Test Pressure    | (psig) | ≥40  | ≥21 | ≥13 | ≥7   | ≥3  |

\*Tested in 60/40 IPA/DI water @ 25°C (77°F)

#### Particle Shedding

Wet packed <2 particles / ml >0.2µm after 26.5L @ 3.8L / min

Dry packed <2 particles / ml >0.2µm after 26.5L @ 3.8L / min

#### Metals Extractables

<20ppb (total) in a 10% HN03 extraction of 1.5 litres for 24 hours at ambient temperatures.

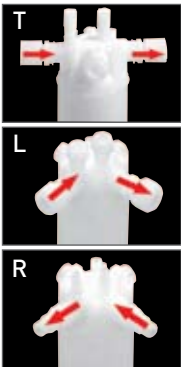
### Applications

- Aggressive acids, bases and solvents
- Photolithography chemicals
- Ozonated and / or hot UPW

### Ordering Information

| Code   Style                                                                 | Code   Style                                                   | Code   Length (Nominal)                                                                                     | Code   Connections                                                                                                                                                                                                                                    | Code   Vent Alignment                                         | Code   Micron                                                     |
|------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------------------------------------------------|
| F <sup>1</sup> In-line<br>T T-Style<br>L L-Style (Left)<br>R R-Style (Right) | C Dry Packed (STD)<br>W Ozonated UPW<br>Flushed and Wet Packed | 0 4" (100 mm)<br>1 10" (250 mm) (short)<br>2 20" (500 mm)<br>3 30" (750 mm)<br>4 <sup>2</sup> 40" (1000 mm) | B 3/4" Butt weld<br>C 3/8" Flaretek 90°<br>D 1/2" Flaretek 90°<br>E 3/4" Flaretek 90°<br>F <sup>3</sup> 3/4" Flaretek 90°<br>G 3/8" Flaretek<br>H 1/2" Flaretek<br>J 3/4" Flarelock<br>K 3/4" Pillar 90°<br>P 3/4" MNPT<br>W <sup>4</sup> 3/4" Pillar | S Same Side<br>D 180° Opposite Side<br>C <sup>4</sup> Centred | 923 0.03<br>925 0.05<br>001 0.1<br>002 0.2<br>004 0.45<br>101 1.0 |

- 1 F cannot be ordered with W connections
- 2 Inline only
- 3 T, L, R can only be ordered with F and W connections
- 4 T, L and R only



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Parker domnick hunter Flo-Pac filters are the perfect choice for many industrial filtration requirements. Flo-Pac pleated filters contain premium grade, phenolic impregnated cellulosic filter media.

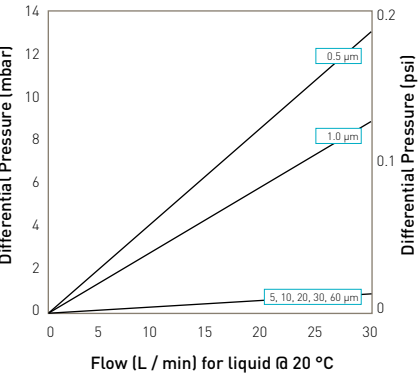
Parker domnick hunter’s line of pleated filters are designed for critical filtration applications, providing long service life, high flow rate and low pressure drop.

Flo-Pac Pleated filters are available in 0.5µm, 1µm, 5µm, 10µm, 20µm, 30µm, and 60µm pore sizes (95% removal; β = 20).

Features and Benefits

- Pleated cellulosic media allow high flow capacity at low pressure drop
- Phenolic resin impregnated to provide strength, integrity and high contaminant capacity
- Suitable for operating temperatures to 121°C (250°F)
- Outer sleeve protects the media from damage
- ET P (Electro-tin-plated) steel metal components for both aqueous and oil-based applications
- Buna-N gaskets are standard, other materials are available

Performance Characteristics



10" Size (250 mm) Cartridge

FLO-PAC Filter Cartridges

- liquid filters
- phenolic impregnated cellulose



FLO-PAC Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Phenolic impregnated cellulose
- Inner Support Core: ETP steel
- Outer Protection Cage:
  - 300 Series: Polypropylene
  - 600 & 700 Series: ETP steel
- Adhesive: Thermosetting PVC
- End Seals:
  - 300 and 700 Series: Buna-N gaskets
  - 600 Series: Buna-N gaskets / grommets
  - 500 Series: Fibre gaskets

Dimensions

300 Series  
Outside diameter: 64 mm (2 1/2") x  
Inside diameter: 25 mm (1")  
Length: 245 mm (9 5/8")  
502 mm (19 3/4")  
743 mm (29 1/4")  
753 mm (29 5/8")  
1016 mm (40")

500 Series  
Outside diameter: 115 mm (4 1/2") x  
Inside diameter: 44 mm (1 3/4")  
Length: 457 mm (18")

Recommended Operating Conditions

Maximum Temperature: 121°C (250°F)  
Maximum Differential Pressure: 4.8 barg (70 psid)  
Recommended Changeout Pressure: 2.4 barg (35 psid)

600 Series  
Outside diameter: 159 mm (6 1/2") x  
Inside diameter: 78 mm (3 1/8"),  
39 mm (1 5/16"),  
32 mm (1 1/4")  
Length: 365 mm (14 3/8")  
737 mm (29")  
1102 mm (43 3/8")

Recommended Flow Rates

Per single length cartridge  
300 series: 27 L/min  
500 series: 194 L/min  
600 series (3-1/2 in ID): 194 L/min  
600 series (1-9/16 in ID): 135 L/min  
700 series: 194 L/min

700 Series  
Outside diameter: 159 mm (6 1/4") x  
Inside diameter: 54 mm (2 1/8"),  
67 mm (2 5/8")  
Length: 457 mm (18")  
914 mm (36")  
1372 mm (54")

Retention Characteristics

| Micron Rating | Micron Rating at Various Efficiencies |            |         |        |        |
|---------------|---------------------------------------|------------|---------|--------|--------|
|               | Absolute 5000                         | 99.9% 1000 | 99% 100 | 95% 20 | 90% 10 |
| 0.5           | 12                                    | 10         | 3       | 0.5    | <0.5   |
| 1             | 15                                    | 12         | 6       | 1      | <1.0   |
| 5             | 30                                    | 20         | 9       | 5      | 3.5    |
| 10            | 50                                    | 35         | 18      | 10     | 7      |
| 20            | 90                                    | 70         | 40      | 20     | 12     |
| 30            | 100                                   | 85         | 50      | 30     | 21     |
| 60            | 200                                   | 150        | 90      | 60     | 45     |

Applications

- Water Soluble
- Coolants
- Quench Oils
- Fuels
- Lubricating Oils
- Hydraulic Oils
- EDM Dielectrics
- Rolling Mill Oils
- Processing Liquids
- Gasoline

Ordering Information

|                                  |       |          |     |                                  |         |           |          |               |     |    |      |                                 |         |     |      |                           |      |                       |  |             |  |  |  |
|----------------------------------|-------|----------|-----|----------------------------------|---------|-----------|----------|---------------|-----|----|------|---------------------------------|---------|-----|------|---------------------------|------|-----------------------|--|-------------|--|--|--|
| FP                               |       |          |     |                                  |         |           |          |               |     |    |      |                                 |         |     |      |                           |      |                       |  |             |  |  |  |
| Code   Outside Diameter   Series |       |          |     | Code   Length (Nominal)   Series |         |           |          | Code   Micron |     |    |      | Code   Inside Diameter   Series |         |     |      | Code   Seal Material      |      |                       |  | Code   Body |  |  |  |
| 3                                | 2.5"  | [64 mm]  | 300 | 10                               | 9 7/8"  | [245 mm]  | 300      | 0.5           | 0.5 | µm | None | 1"                              | [25 mm] | 300 | None | Buna-N Gaskets            | None | Metal                 |  |             |  |  |  |
| 5                                | 4.5"  | [114 mm] | 500 | 14                               | 14 3/8" | [365 mm]  | 600      | 1             | 1   | µm | None | 1.75"                           | [44 mm] | 500 | A    | Vellumoid                 |      | (500, 600 700 series) |  |             |  |  |  |
| 6                                | 6.25" | [159 mm] | 600 | 18                               | 18"     | [457 mm]  | 500, 700 | 5             | 5   | µm | None | 3.5"                            | [89 mm] | 600 | B    | Fiber                     | 1    | Polypro               |  |             |  |  |  |
| 7                                | 6.25" | [159 mm] | 700 | 20                               | 19 3/4" | [502 mm]  | 300      | 10            | 10  | µm | None | 2.62"                           | [67 mm] | 700 |      | (500 Series Only)         |      | (300 series)          |  |             |  |  |  |
|                                  |       |          |     | 29                               | 29"     | [736 mm]  | 600      | 20            | 20  | µm | 1    | 1.6"                            | [41 mm] | 600 | C    | Cork                      | M    | Metal                 |  |             |  |  |  |
|                                  |       |          |     | 29                               | 9 1/4"  | [743 mm]  | 300      | 30            | 30  | µm | 8    | 2.13"                           | [54 mm] | 700 |      | (700 Series Only)         |      | (300 series)          |  |             |  |  |  |
|                                  |       |          |     | 30                               | 29 7/8" | [753 mm]  | 300      |               |     |    |      |                                 |         |     | G    | Buna-N Grommets           | N    | No Body               |  |             |  |  |  |
|                                  |       |          |     | 36                               | 36"     | [915 mm]  | 700      |               |     |    |      |                                 |         |     |      | (600 Series 1-9/16 in ID) |      |                       |  |             |  |  |  |
|                                  |       |          |     | 40                               | 40"     | [1016 mm] | 300      |               |     |    |      |                                 |         |     | V    | Viton*                    |      |                       |  |             |  |  |  |
|                                  |       |          |     | 44                               | 43 3/8" | [1102 mm] | 600      |               |     |    |      |                                 |         |     |      |                           |      |                       |  |             |  |  |  |
|                                  |       |          |     | 54                               | 54"     | [1372 mm] | 700      |               |     |    |      |                                 |         |     |      |                           |      |                       |  |             |  |  |  |

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Parker domnick hunter Flo-Pac Plus filters cartridges are the filters of choice for many industrial filtration requirements. Flo-Pac Plus Pleated filters are manufactured with premium grade, phenolic impregnated cellulosic filter media for long service life, high flow rate and low pressure drop.

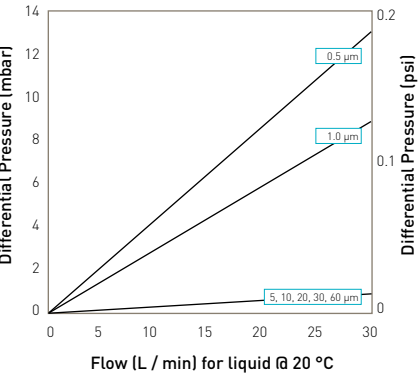
Unique epoxy resin bonding of end caps, pleat side seal and gaskets provides excellent resistance to most organic solvents.

Flo-Pac Plus Pleated filter cartridges are available in 0.5µm, 1µm, 5µm, 10µm, 20µm, 30µm, and 60µm pore sizes (95% removal; β = 20).

Features and Benefits

- Epoxy bonding of end caps, pleat side seal and gaskets provides resistance to most organic solvents
- Premium pleated cellulosic media allow high flow capacity at low pressure drop
- Impregnated phenolic resin provides strength, integrity and high contaminant capacity
- Suitable for operating temperatures to 121°C (250°F)
- ETP (Electro-tin-plated) steel metal components for aqueous and oil-based applications

Performance Characteristics



10" Size (250 mm) Cartridge

FLO-PAC Plus Filter Cartridges

- liquid filters
- phenolic impregnated cellulose



FLO-PAC Plus Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Phenolic impregnated cellulose
- Inner Support Core: ETP steel
- Outer Protection Cage: ETP steel
- Adhesive: Epoxy
- End Seals: Vellumoid (standard) Viton\*, cork

Recommended Operating Conditions

Maximum Temperature: 121°C (250°F)

Maximum Differential Pressure 4.8 barg (70 psid)

Recommended Changeout Pressure 2.4 barg (35 psid)

Recommended Flow Rates

Per single length cartridge

300 series: 27L/min

600 series (3-1/2 in ID): 194L/min

600 series (1-9/16 in ID): 135L/min

700 series: 194L/min

Dimensions

300 Series

Outside diameter: 64 mm (2 1/2") x 25 mm (1")

Inside diameter: 245 mm (9 5/8")

Length: 502 mm (19 3/4") 743 mm (29 1/4") 752 mm (29 5/8") 1016 mm (40")

600 Series

Outside diameter: 159 mm (6 1/4") x 89 mm (3 1/2"), 40 mm (1 5/16")

Length: 365 mm (14 3/8"), 737 mm (29")

700 Series

Outside diameter: 159 mm (6 1/4") x 67 mm (2 5/8"), 54 mm (2 1/8")

Length: 457 mm (18"), 914 mm (36")

Retention Characteristics

| Micron Rating | Micron Rating at Various Efficiencies |            |         |        |  |
|---------------|---------------------------------------|------------|---------|--------|--|
|               | Absolute 5000                         | 99.9% 1000 | 99% 100 | 95% 20 |  |
| 0.5           | 12                                    | 10         | 3       | 0.5    |  |
| 1             | 15                                    | 12         | 6       | 1      |  |
| 5             | 30                                    | 20         | 9       | 51     |  |
| 0             | 50                                    | 35         | 18      | 10     |  |
| 20            | 90                                    | 70         | 40      | 20     |  |
| 30            | 100                                   | 85         | 50      | 30     |  |
| 60            | 200                                   | 150        | 90      | 60     |  |

Applications

- Aromatic Hydrocarbons (toluene, xylene, benzene)
- Ketones (acetone, isophorone, methylethyl ketone)
- Ethers (THF, dioxane)
- Amines (DEA, TEA, DMEA)
- Glycols (ethyl acetate, cellosolve acetate)
- Aliphatic Hydrocarbons (hexane, pentane, naphtha)
- Halogenated Hydrocarbons (methylene chloride, perchloroethylene)
- Esters (EG, PEG, DEG)

Ordering Information

| FPE                              |       |          |     |                                  |                                  |           |     |               |        |                                 |       |         |     |                      |           |
|----------------------------------|-------|----------|-----|----------------------------------|----------------------------------|-----------|-----|---------------|--------|---------------------------------|-------|---------|-----|----------------------|-----------|
| Code   Outside Diameter   Series |       |          |     | Code   Length (Nominal)   Series |                                  |           |     | Code   Micron |        | Code   Inside Diameter   Series |       |         |     | Code   Seal Material |           |
| 3                                | 2.5"  | (64 mm)  | 300 | 10                               | 9 <sup>5</sup> / <sub>8</sub> "  | (245 mm)  | 300 | 0.5           | 0.5 μm | None                            | 1"    | (25 mm) | 300 | A                    | Vellumoid |
| 6                                | 6.25" | (159 mm) | 600 | 14                               | 14 <sup>3</sup> / <sub>8</sub> " | (365 mm)  | 600 | 1             | 1 μm   | None                            | 3.5"  | (89 mm) | 600 | C                    | Cork      |
| 7                                | 6.25" | (159 mm) | 700 | 18                               | 18                               | (457 mm)  | 700 | 5             | 5 μm   | None                            | 2.62" | (67 mm) | 700 | (700 Series Only)    |           |
|                                  |       |          |     | 20                               | 19 <sup>3</sup> / <sub>4</sub> " | (502 mm)  | 300 | 10            | 10 μm  | 1                               | 1.6"  | (41 mm) | 600 | V                    | Viton*    |
|                                  |       |          |     | 29                               | 29"                              | (736 mm)  | 600 | 20            | 20 μm  | 8                               | 2.13" | (54 mm) | 700 | N                    | Buna-N    |
|                                  |       |          |     | 29                               | 24 <sup>1</sup> / <sub>4</sub> " | (743 mm)  | 300 | 30            | 30 μm  |                                 |       |         |     |                      |           |
|                                  |       |          |     | 30                               | 29 <sup>5</sup> / <sub>8</sub> " | (753 mm)  | 300 | 60            | 60 μm  |                                 |       |         |     |                      |           |
|                                  |       |          |     | 36                               | 36"                              | (915 mm)  | 700 |               |        |                                 |       |         |     |                      |           |
|                                  |       |          |     | 40                               | 40"                              | (1016 mm) | 300 |               |        |                                 |       |         |     |                      |           |

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## PB Series Pleated Bag Filter Cartridges

- liquid filters

Parker domnick hutner's new PB Series Pleated Bag is a high-capacity product line that provides a cost-effective alternative with higher removal efficiencies over standard bag media configurations.

Utilising Parker domnick hunter's unique 'Select' pleat design along with our proprietary media configurations, we are able to optimise the pleat pack surface area to maximise the service life within each configuration. The PB series filters are available in several polypropylene formats: Poly-Mate Plus, Poly-Mate and Claripor. In addition, it is available with our Glass-Mate media.

This product is designed to fit within existing bag filter vessels, including our SB, FB, CB series without any hardware changes and incorporates an easy-to-grasp intergrated handle for quick removal.

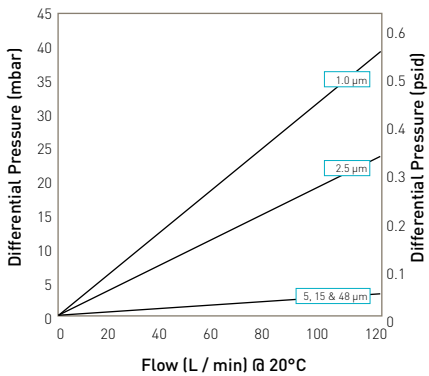
### Features and Benefits

- High capacity reduces the number of filters required resulting in fewer chanegouts and lower filtration costs.
- High capacity allows for smaller housings and less capital expenditure
- Inside / outside flow captures and retains contaminants to eliminate potential fouling downstream
- Range of sealing configurations meets the majority of housing requirements
- Several media types are available for a wide variety of applications
- Polypropylene cartridges listed as acceptable for portable and editable contact according to CFR Title 21



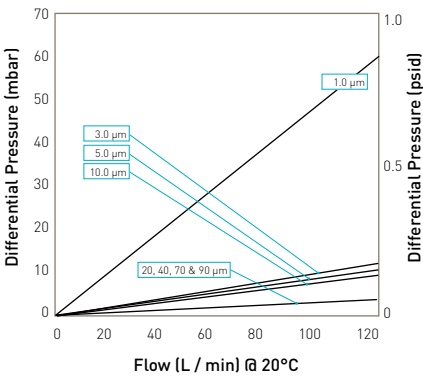
### Performance Characteristics

PMPB Pleated bag flow rate



Size 1 Bags

PPPB Pleated bag flow rate

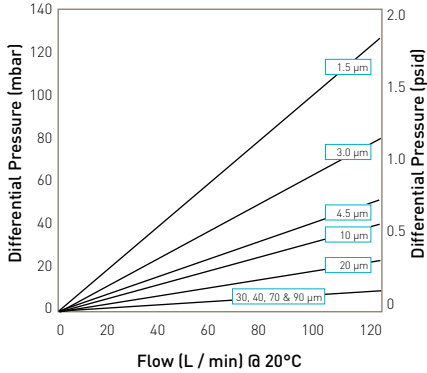


Size 1 Bags

## PB Series Pleated Bag Series Filter Cartridges

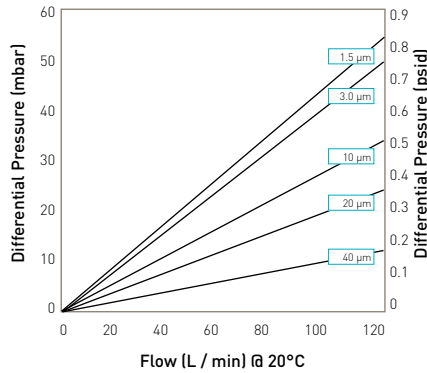
### Performance Characteristics

CPPB Pleated bag flow rate



Size 1 Bags

GMPB Pleated bag flow rate



Size 1 Bags

### Specifications

#### Materials of Construction

- Structural components: Polypropylene
- Support / Drainage: Polypropylene
- Filtration Media: Polypropylene, Poly-Mate Plus, Claripor, Poly-Mate, Borosilicate Microfiber, Glass-mate
- Seal Material: EPDM, Buna-N, Viton

#### Select Pleating:



#### Recommended Operating Conditions

Poly-Mate Plus, Poly-Mate, Claripor:  
4.8 barg (70 psid) @ 25°C (77°F)  
2.4 barg (35 psid) @ 54°C (130°F)

Glass-Mate  
2.8 barg (40 psid) @ 25°C (77°F)  
1.0 barg (15 psid) @ 79°C (175°F)

#### Recommended Flow Rate

For optimum performance  
P1 - 95 L/min (25 gpm)  
P2 - 189 L / min (50 gpm)

#### Maximum Flow Rate

P1 - 189 L / min (50 gpm)  
P2 - 379 L / min (100 gpm)

#### Recommended Change-out Differential Pressure

2.41 barg (35 psid)

#### Dimensions (Nominal)

Outside Flange Diameter: 184 mm (7.25")  
Outside Filter Diameter: 152 mm (6")

#### Length

Size 1 Bag: 292 mm (11.5")  
Size 2 Bag: 622 mm (24.5")

#### Size (Nominal)

C: 190 mm (7.50")  
G: 181 mm (7.12")

### PB Efficiencies (based on 95 lpm for Size 1 Bags)

| Poly-Mate (PMPB) |              |              | Poly-Mate Plus (PPPB) |              |                 | Claripor (CPPB) |              |                 | Glass-Mate (GMPB) |              |                 |
|------------------|--------------|--------------|-----------------------|--------------|-----------------|-----------------|--------------|-----------------|-------------------|--------------|-----------------|
| PN Micron        | Effic. @ 95% | Effic. @ 99% | PN Micron             | Effic. @ 90% | Effic. @ ≥99.9% | PN Micron       | Effic. @ 90% | Effic. @ ≥99.9% | PN Micron         | Effic. @ 90% | Effic. @ ≥99.9% |
| 1                | 0.2          | 1            | 1                     | 0.45         | 1.4             | 1.5             | 0.7          | 1.5             | 1.5               | 1            | 1.5             |
| 2.5              | 1            | 2.5          | 3                     | 1            | 2.5             | 3               | 1            | 3               | 3                 | 1.6          | 3               |
| 5                | 3            | 5            | 5                     | 2            | 5               | 4.5             | 3.5          | 4.5             | 10                | 5            | 10              |
| 15               | 8            | 15           | 10                    | 4            | 10              | 10              | 4            | 10              | 20                | 12           | 20              |
| 48               | 32           | 48           | 20                    | 12           | 20              | 20              | 12           | 20              | 40                | 20           | 40              |
|                  |              |              | 40                    | 20           | 40              | 30              | 16           | 30              |                   |              |                 |
|                  |              |              | 70                    | 35           | 70              | 40              | 18           | 40              |                   |              |                 |
|                  |              |              | 90                    | 60           | 90              | 70              | 25           | 70              |                   |              |                 |
|                  |              |              |                       |              |                 | 90              | 40           | 90              |                   |              |                 |

Pleated Bag Configuration Options

**Claripor CPPB**  
The PB Clairpor offers the best of pleated and depth style technologies. The unique depth layer construction provides higher retention, longer service life, and excellent gel removal. These features, in addition to the PB Claripor’s high contaminant holding capacity and exceptional clarifying ability make it an ideal choice for a wide array of critical process applications.

**Poly-Mate PMPB**  
The PB Poly-Mate incorporates a unique combination of polypropylene meltblown and spun-bonded media to provide a high surface area, finish-free and non-fibre releasing filtration.

**Poly-Mate Plus PPPB**  
The PB Poly-Mate Plus filters are made with a pleated polypropylene microfibre which provides high efficiency and high purity filtration. The PB Poly-Mate Plus media configuration makes it an ideal membrane pre-filter or cost effective alternative to membrane filters in a variety of applications.

**Glass-Mate GMPB**  
The PB Glass-Mate offers an economical choice for applications requiring high quality filtration, and long service life. The laminated media / suport layer maximises flow capacity and eliminates media migration.

- Applications
- Intermediates and fine chemicals
  - Commercial water
  - Catalyst recovery
  - Paints and inks

Ordering Information

Poly-Mate PMPB

-

-

| Code   Micron                                 | Bag Length | Code   Description | Code   Ring Style                                                                                                                                                                                                                        | Code   Seal A, B, C and D only |
|-----------------------------------------------|------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 010 1<br>025 2.5<br>050 5<br>150 15<br>480 48 | 1<br>2     | P Polypropylene    | CQ Plastic: 'Q' Parker Top Sealing<br>CA Elastometric: Parker<br>GQ Plastic: 'Q' Competitive Top Sealing<br>GB Elastometric: GAF /FSI Side Entry Seal<br>GC Elastometric: Pall / FTC<br>GD Elastometric: FSI / Hayward Over the Top Seal | N Buna N<br>E EPDM<br>V Viton* |

Poly-Mate Plus PPPB

-

-

| Code   Micron                                                             | Bag Length | Code   Description | Code   Ring Style                                                                                                                                                                                                                        | Code   Seal A, B, C and D only |
|---------------------------------------------------------------------------|------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 010 1<br>030 3<br>050 5<br>100 10<br>200 20<br>400 40<br>700 70<br>900 90 | 1<br>2     | P Polypropylene    | CQ Plastic: 'Q' Parker Top Sealing<br>CA Elastometric: Parker<br>GQ Plastic: 'Q' Competitive Top Sealing<br>GB Elastometric: GAF /FSI Side Entry Seal<br>GC Elastometric: Pall / FTC<br>GD Elastometric: FSI / Hayward Over the Top Seal | N Buna N<br>E EPDM<br>V Viton* |

Claripor CPPB

-

-

| Code   Micron                                                                           | Bag Length | Code   Description | Code   Ring Style                                                                                                                                                                                                                        | Code   Seal A, B, C and D only |
|-----------------------------------------------------------------------------------------|------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 015 1.5<br>030 3<br>045 4.5<br>100 10<br>200 20<br>300 30<br>400 40<br>700 70<br>900 90 | 1<br>2     | P Polypropylene    | CQ Plastic: 'Q' Parker Top Sealing<br>CA Elastometric: Parker<br>GQ Plastic: 'Q' Competitive Top Sealing<br>GB Elastometric: GAF /FSI Side Entry Seal<br>GC Elastometric: Pall / FTC<br>GD Elastometric: FSI / Hayward Over the Top Seal | N Buna N<br>E EPDM<br>V Viton* |

Glass-Mate GMPB

-

-

| Code   Micron                                  | Bag Length | Code   Description | Code   Ring Style                                                                                                                                                                                                                        | Code   Seal A, B, C and D only |
|------------------------------------------------|------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 015 1.5<br>030 3<br>100 10<br>200 20<br>400 40 | 1<br>2     | P Polypropylene    | CQ Plastic: 'Q' Parker Top Sealing<br>CA Elastometric: Parker<br>GQ Plastic: 'Q' Competitive Top Sealing<br>GB Elastometric: GAF /FSI Side Entry Seal<br>GC Elastometric: Pall / FTC<br>GD Elastometric: FSI / Hayward Over the Top Seal | N Buna N<br>E EPDM<br>V Viton* |

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PARMAX Filter Cartridges

- liquid filters
- large diameter high flow polypropylene / glass fibre

The best of pleated and large diameter technologies are combined in Parker domnick hunter's PARMAX high flow filter cartridges.

The unique layered construction provides excellent retention across a wide range of flux rates. One six inch diameter cartridge can handle up to 120 m³ / hr flow (60" length). The inside to outside flow allows for a high contaminant holding capacity and a long filter life which makes the PARMAX an ideal choice for a wide variety of critical process applications.

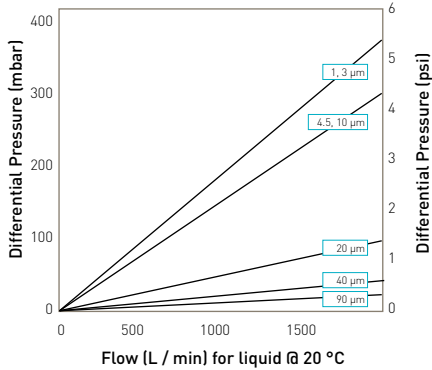
PARMAX cartridges are available with polypropylene and glass microfibre in absolute (99.98%) micro ratings from 1 to 90 microns. The best of pleated and large diameter technologies are combined in Parker domnick hunter's PARMAX high flow filter cartridge.



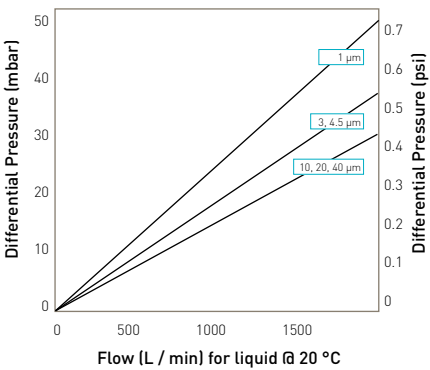
Features and Benefits

- Large diameter yields much higher flow rates compared to traditional filters
- High flow capacity allows for fewer elements and less capital expenditure
- Inside-out flow pattern ensures positive capture of contaminants
- Absolute retention ratings for critical filtration

Performance Characteristics



Water flow rate based on a 60" size cartridge (polypropylene)



Water flow rate based on a 60" size cartridge (glass fibre)

PARMAX Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Polypropylene, Glass fibre
- Support / Drainage: Polypropylene
- Hardware: Polypropylene
- Standard o-rings (SOE): EPDM, Buna-N, Viton, Silicone

Recommended Flow Rate Conditions

- 20" : Up to 40 m³ / hr
- 40" : Up to 80 m³ / hr
- 60" : Up to 120 m³ / hr

Recommended Change Out Pressure

2.41 bar (32 psi)

Retention Ratings (99.98%)

1, 3, 4.5, 10, 20, 40 and 90\*\* µm

\*\*Only available in the RCP version

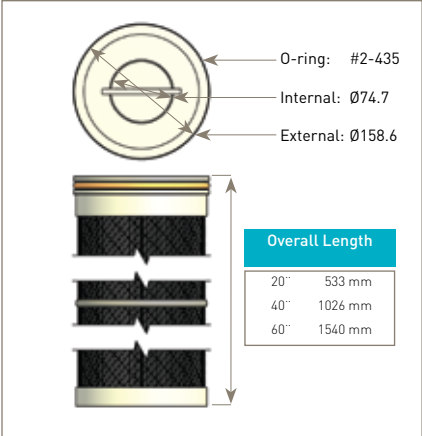
Maximum Operating Temperature

80 °C (176 °F) @ 2.1 bar (30 psi)

Maximum Differential Pressure

4.8 bar (70 psi) @ 25 °C ( 77 °F)  
2.1 bar (30 psi) @ 80 °C (176 °F)

Dimensions (Nominal)



Applications

- Process Water
- Power Generation
- Speciality Chemicals
- Water Treatment
- Photochemistry

Ordering Information

| Code   Material   | Code   Micron | Code   Length (Nominal) | Code   Seal Material | Code   Endcap Configuration |
|-------------------|---------------|-------------------------|----------------------|-----------------------------|
| RCP Polypropylene | 010 1.0 µm    | 2 20" (508 mm)          | E EPDM               | PP 435 o-ring / closed      |
| RMG Glass fibre   | 030 3.0 µm    | 4 40" (1016 mm)         | N Buna N             |                             |
|                   | 045 4.5 µm    | 20 60" (1524 mm)        | S Silicone           |                             |
|                   | 100 10.0 µm   |                         | V** Viton            |                             |
|                   | 200 20.0 µm   |                         |                      |                             |
|                   | 400 40.0 µm   |                         |                      |                             |
|                   | 900* 90.0 µm  |                         |                      |                             |

\* Only in polypropylene media (RCP)

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Parker’s MAXGUARD high capacity cartridge product line provides a cost effective alternative to bag media or standard 2-1/2 inch cartridges for high flow applications. Each MAXGUARD cartridge has a 6” (152 mm) nominal outside diameter and can handle flows up to 20cu m/hr, significantly reducing the number of cartridges required for large flow applications.

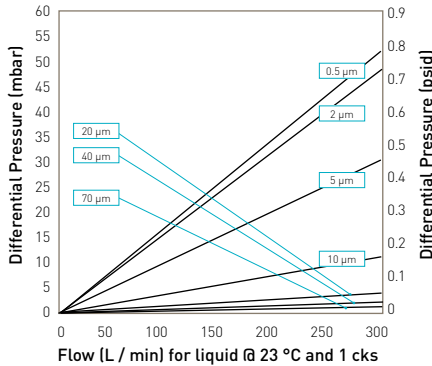
MAXGUARD cartridges are available in polypropylene, cellulose and Nomex media. All cartridges feature an industry standard 226 positive o-ring seal and easy-to-grasp integrated handle.

All cartridges have absolute retention ratings (beta = 5000) ideal for critical applications.

Features and Benefits

- High flow capacity means fewer cartridges and reduced labour costs associated with change-out
- Heavy wall core ensures superior strength
- Integrated handle makes change-outs, fast easy and safe
- Positive 226 O-ring seal assures filtration integrity

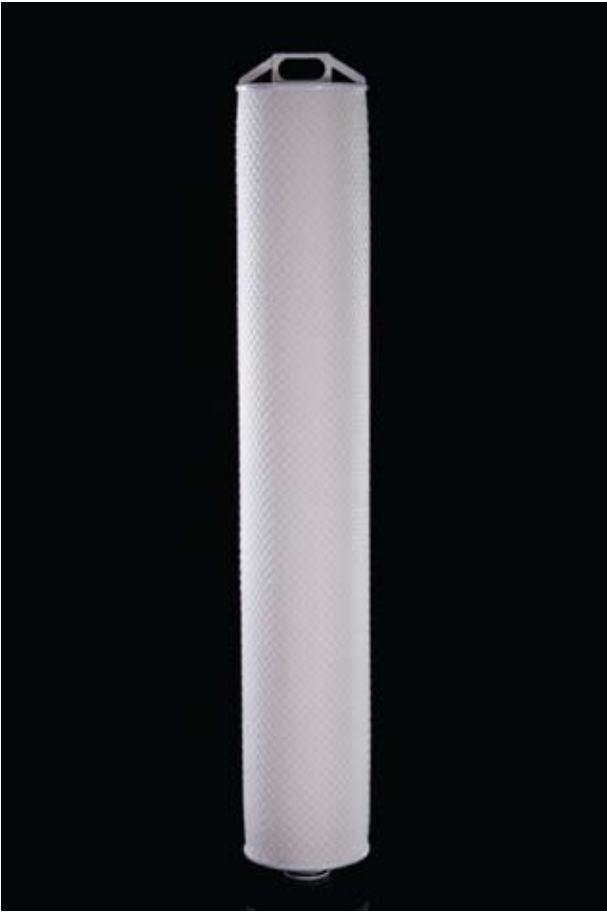
Performance Characteristics



40" Size (1016 mm) Cartridge

MAXGUARD Large Diameter Filter Cartridges

- liquid filters
- polypropylene and cellulose



MAXGUARD Large Diameter Filters

Specifications

Materials of Construction

- Filtration Media: Polypropylene  
Cellulose  
Nomex
- Support Layers: Polypropylene  
[MXGP and MXGC]
- Support Core: Polypropylene  
[MXGP and MXGC]  
Stainless Steel [MXGN]

Filtration Rating

99.98% at specified micron rating

Maximum Operating Conditions  
MXGP and MXGC

Max Temperature: 80°C at 2.1 bar  
Max Pressure: 4.8 bar at 25°C  
2.1 bar at 80°C

MXGN

Max Temperature: 220°C at 2.1 bar  
Max Pressure: 4.8 bar at 25°C (Forward)  
2.1 bar at 80°C (Forward)  
3.4 bar at 25°C (Reverse)  
Max Flow Rate: 350 L / min per 40"

Flow Characteristics

MAXGUARD filters are capable of filtering 340 L/min.

Recommended Operating Conditions

Change-out Pressure: 2.4 bar

Retention Characteristics

| Cartridge Code | Micron Rating at Various Efficiencies |       |     |      |      |
|----------------|---------------------------------------|-------|-----|------|------|
|                | 99.8%                                 | 99.9% | 99% | 98%  | 95%  |
| CELLULOSE      |                                       |       |     |      |      |
| MXGC020        | 2                                     | 1.6   | 0.4 | 0.2  | >0.1 |
| MXGC100        | 10                                    | 6     | 1.4 | 0.5  | >0.2 |
| MXGC150        | 15                                    | 11    | 3   | 1.5  | >0.6 |
| MXGC700        | 70                                    | 53    | 8.5 | 3    | >0.5 |
| POLYPROPYLENE  |                                       |       |     |      |      |
| MXGP005        | 0.5                                   | 0.4   | 0.2 | >0.2 | >0.1 |
| MXGP020        | 2                                     | 1.4   | 0.4 | 0.2  | >0.1 |
| MXGP050        | 5                                     | 3.8   | 1.2 | 0.3  | >0.1 |
| MXGP100        | 10                                    | 7     | 3   | 0.9  | >0.2 |
| MXGP200        | 20                                    | 18    | 5   | 2    | >0.2 |
| MXGP400        | 40                                    | 23    | 18  | 8    | >0.7 |
| NOMEX          |                                       |       |     |      |      |
| MXGN1000       | 100                                   | 91    | 83  | 64   | 35   |

Applications

- Amines
- Commercial water
- Industrial wash waters

Ordering Information

MXGP

| Filter Media  | Code   Micron                                                                       | Code   Length                       | Code   Seal Material                                         | Endcap Configuration             |
|---------------|-------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------|----------------------------------|
| Polypropylene | 005 0.5 µm<br>020 2.0 µm<br>050 5.0 µm<br>100 10.0 µm<br>200 20.0 µm<br>400 40.0 µm | 30 30" (750 mm)<br>40 40" (1016 mm) | E EPR<br>N Buna-N<br>V Viton*<br>S Silicone<br>T PFA / Viton | 226 O-Ring / Flat Cap w / handle |

MXCG

| Filter Media | Code   Micron                                           | Code   Length                       | Code   Seal Material                                         | Endcap Configuration             |
|--------------|---------------------------------------------------------|-------------------------------------|--------------------------------------------------------------|----------------------------------|
| Cellulose    | 020 2.0 µm<br>100 10.0 µm<br>150 15.0 µm<br>700 70.0 µm | 30 30" (750 mm)<br>40 40" (1016 mm) | E EPR<br>N Buna-N<br>V Viton*<br>S Silicone<br>T PFA / Viton | 226 O-Ring / Flat Cap w / handle |

MXGN

1000

| Filter Media | Code   Micron | Code   Length                       | Code   Seal Material                                         | Endcap Configuration             |
|--------------|---------------|-------------------------------------|--------------------------------------------------------------|----------------------------------|
| Nomex        | 1000 100.0 µm | 30 30" (750 mm)<br>40 40" (1016 mm) | E EPR<br>N Buna-N<br>V Viton*<br>S Silicone<br>T PFA / Viton | 226 O-Ring / Flat Cap w / handle |

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## MAXGUARD Select Large Diameter Filters

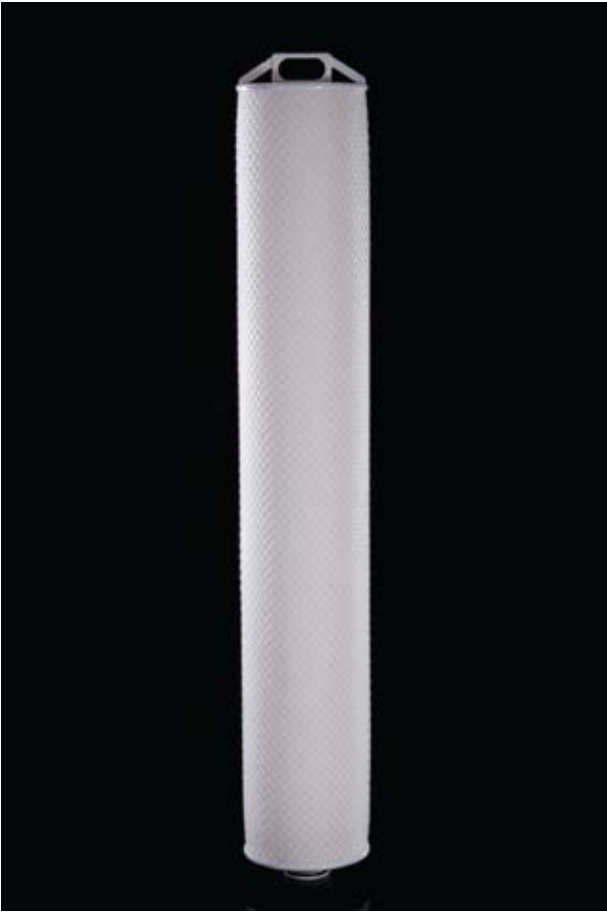
- liquid filters
- polypropylene and cellulose

Parker's MAXGUARD Select high capacity cartridge provides a cost-effective alternative to bag media or standard 2-1/2-inch cartridges for high flow applications.

Each MAXGUARD cartridge can handle flows up to 379 lpm, significantly reducing the number of cartridges required for large-flow applications.

The MAXGUARD Select contains up to 40% more dirt-holding capacity than the standard MAXGUARD. The MAXGUARD Select cartridge is available with polypropylene media.

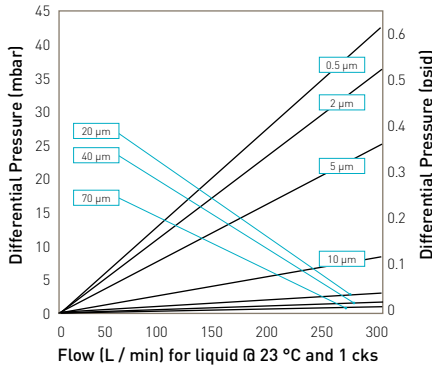
All cartridges feature an industry standard 226 positive o-ring seal and easy-to-grasp integrated handle.



### Features and Benefits

- High flow capacity means fewer cartridges and reduced labor costs associated with change-out
- Cartridge is 100% thermally welded
- Positive 226 o-ring seal assures filtration integrity
- Absolute retention ratings from 0.5 to 70 micron for critical filtration

### Performance Characteristics



40" Size (1016 mm) Cartridge

## MAXGUARD Select Large Diameter Filters

### Specifications

#### Materials of Construction

- Filtration Media: Polypropylene
- Support / Drainage: Polypropylene
- Structural Components: Polypropylene
- Seal Material: Various
- Select Pleating:

#### Retention Characteristics

|          | Micron Rating at Various Efficiencies |       |     |      |      |
|----------|---------------------------------------|-------|-----|------|------|
|          | Absolute                              | 99.9% | 99% | 98%  | 95%  |
|          | 5000                                  | 1000  | 100 | 50   | 20   |
| MGSP005  | 0.5                                   | 0.4   | 0.2 | >0.2 | <0.1 |
| MGSP020  | 2                                     | 1.4   | 0.4 | 0.2  | <0.1 |
| MGSP050  | 5                                     | 3.8   | 1.2 | 0.3  | <0.1 |
| MGSP100  | 10                                    | 7     | 3   | 0.9  | <0.2 |
| MGSP200  | 20                                    | 18    | 5   | 2    | <0.2 |
| MGSP400  | 40                                    | 23    | 18  | 8    | <0.7 |
| MGSP1000 | 100                                   | 91    | 83  | 64   | 35   |

#### Filtration Rating

99.98% at specified micron rating

#### Recommended Operating Conditions

Max Temperature: 80°C (176°F)  
at 2.1 bar (30 psid)

Max Differential Pressure Forward: 4.8 bar (70 psid)  
at 25°C (77°F)  
2.1 bar (30 psid)  
at 80°C (176°F)

#### Dimensions

Outside diameter: 154 mm (6.06")  
Inside diameter: 49 mm (1.92")

#### Flow Characteristics

MAXGUARD Select filters are capable of filtering 378 L/min.

#### Applications

- Amines
- Commercial water
- Industrial wash waters

### Ordering Information

| MGSP             |                                                                                                    |                                     |                                                              |                                  | SM |
|------------------|----------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------|----------------------------------|----|
| Cartridge Series | Code   Micron                                                                                      | Code   Length                       | Code   Seal Material                                         | Endcap Configuration             |    |
| MAXGUARD Select  | 005 0.5 µm<br>020 2.0 µm<br>050 5.0 µm<br>100 10.0 µm<br>200 20.0 µm<br>400 40.0 µm<br>700 70.0 µm | 30 30" (750 mm)<br>40 40" (1016 mm) | E EPR<br>N Buna-N<br>V Viton*<br>S Silicone<br>T PFA / Viton | 226 O-Ring / Flat Cap w / handle |    |

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# Carbon Filters



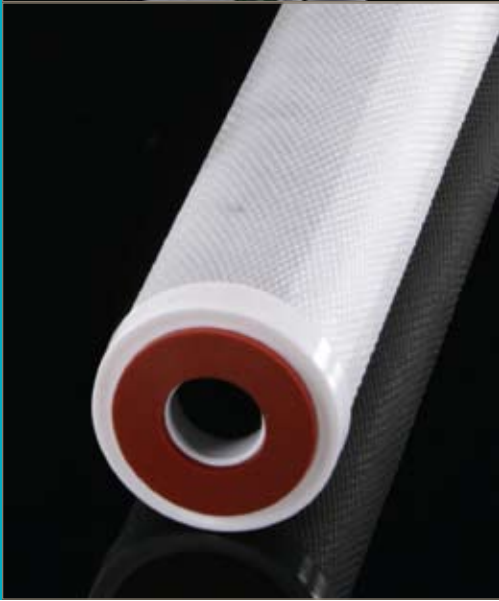
## Carbon Filters

Activated carbon is a porous form of carbon which can be manufactured from a variety of carbonaceous raw materials.

The activation process involves treating the raw material with steam or chemicals, thereby developing a pore structure. Activated carbon is characterised by a vast system of pores of molecular size within the carbon particles resulting in the formation of a material with extensive internal surface area.

Activated carbon cartridges act in two ways, firstly the removal of chlorine, volatile organic compounds, chlorinated hydrocarbons and organic impurities and secondly the reduction of particulate using the cartridge structure. Applications are numerous and include the purification of plating solutions for the metal finishing industry.

**CARBOFLOW**  
CARBOFLOW MX cartridges are offered in both high efficiency and general grades. They consist of bituminous coal sourced carbon, extruded together with an FDA listed thermoplastic binder, to produce an extremely porous yet rigid structure.





CARBOFLOW MX cartridges are offered in both high efficiency and general grades. They consist of bituminous coal sourced carbon, extruded together with an FDA listed thermoplastic binder, to produce an extremely porous yet rigid structure.

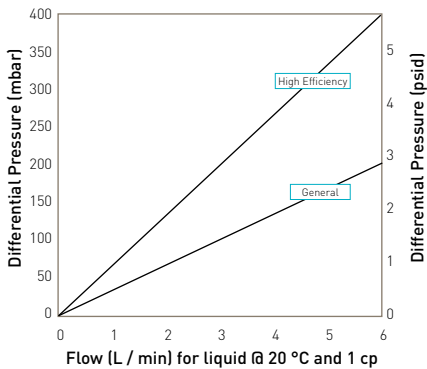
The result is a filter offering unsurpassed adsorptive capacity, up to 20 times that of traditional granular carbon or carbon impregnated filters, and high particle removal efficiency.

The rigid structure of CARBOFLOW MX not only minimises any possibility of channelling, bypass or fluidising, but also the release of carbon fines during start up and operation. Such problems are common with more traditional carbon filters. CARBOFLOW MX is available in lengths up to 40" (1016 mm) together with end fittings to suit most industry standard housings.

Features and Benefits

- Available in lengths 5" to 40"
- Available in 2 grades
- Ideal for chlorine and chloroform reduction
- FDA approved materials

Performance Characteristics



10" Size (250 mm) Cartridge

CARBOFLOW MX Filter Cartridges

- activated carbon filters



CARBOFLOW MX Filter Cartridges

Specifications

Materials of Construction

- Carbon: Bituminous Coal
- Carbon Type: Steam Activated, Acid Wash
- Carbon Weight (per 10"): 350 g
- End Caps: Polypropylene
- Standard o-rings/gaskets: EPDM, Nitrile, PE, Silicone, Viton

Retention Characteristics

|                       | 1<br>High Efficiency | 2<br>General          |
|-----------------------|----------------------|-----------------------|
| Particle Removal      | 99.9% @ 2 mic        | 98% @ 10 mic          |
| Chlorine Reduction**  | 76 cu.m @ 4 l / min  | 22.7 cu.m @ 4 l / min |
| Chloroform Reduction* | 3 cu.m @ 2 l / min   | n / a                 |

\* Per 10" element, for longer lengths multiply pro-rata for details of test conditions contact Parker domnick hunter for details.  
\*\*Based on an inlet concentration of 2 ppm chlorine.

Maximum Operating Temperature  
60 °C (158 °F)

Maximum Differential Pressure  
7 bar (101.52 psid)

Recommended Changeout Differential Pressure  
2 bar (29.00 psid)

Applications

- Product rinse waters
- Plating solutions
- De-colourisation
- De-chlorination

Ordering Information

| Code   Flow Path | Code   Length (Nominal)                                                                                                                                                                                      | Code   Type | Code   Grade                   | Code   End Fitting                                                                    | Code   Seal Material                                  |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------|
| C Carbon         | 05 4.75" (124 mm)<br>09 9.75" (247 mm)<br>10 9.875" (251 mm)<br>11 10" (254 mm)<br>19 19.50" (500 mm)<br>20 20" (508 mm)<br>29 29.50" (750 mm)<br>30 30" (762 mm)<br>39 39.25" (1000 mm)<br>40 40" (1016 mm) | M Extruded  | 1 High Efficiency<br>2 General | 0 DOE<br>2 Flat / 226<br>3 Flat / 222<br>7 Fin / 226<br>8 Fin / 222<br>9 213<br>S SOE | E EPDM<br>N Nitrile<br>P PE<br>S Silicone<br>V Viton* |

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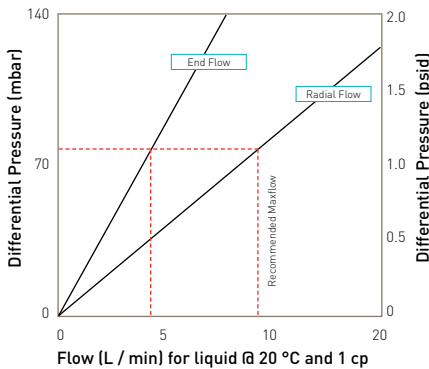
CARBOFLOW granular activated carbon cartridges contain a broad band adsorbent (typically 250g/10" length). When required the carbon can be impregnated with silver to reduce bacterial build up.

Radial flow elements consist of a bed of high grade activated carbon sandwiched between porous inner and outer sleeves which help prevent carbon migration. In the end flow version, the outer sleeve is porous only at the bottom, which forces the liquid to flow through the entire carbon bed (typically 350g/10" length) to exit at the top and results in the maximum contact time between liquid and carbon. CARBOFLOW shells can also be filled with ion exchange resins for use in ultra pure water systems and for precious metals recovery from plating solutions.

Features and Benefits

- Activated carbon filters
- Removal of taste and odour from process water
- Both radial and end flow variants available
- Filtration down to 5 micron

Performance Characteristics



For optimum life and performance we would recommend a maximum flow rate of 7 L / min for the radial flow cartridge and 5 L /mins for the end flow.

10" Size (250 mm) Cartridge

CARBOFLOW Filter Cartridges

- activated carbon filters



CARBOFLOW Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Natural Carbon, Silvered Carbon, Anion Resin, Cation Resin, Mixed Bed Resin, Polypropylene
- End Caps: Porous Polyethylene
- Outer Shell: Polypropylene
- Standard o-rings/gaskets: EPDM, Nitrile, PE, Silicone, Viton

Maximum Operating Temperature

60 °C (158 °F)

Recommended Changeout Differential Pressure

2 bar (29 psid)

Dimensions

Outside diameter: 68 mm (2.7")

Inside diameter: 27 mm (1.1")

Note

These cartridges contain a small amount of carbon fines (very fine black powder). After installation, flush the system for a minimum of 5 minutes to remove all traces of the fines before using the water. In domestic situations the water should be run for 20 seconds prior to use in cooking or drinking.

Applications

- Chlorine reduction
- Plating solutions
- Waste water treatment
- Decolourisation

Ordering Information

| Code   Flow Path | Code   Length (Nominal) | Code   Type | Code   Media      | Code   Seal Material |
|------------------|-------------------------|-------------|-------------------|----------------------|
| C Carbon         | 09 9.75" (247 mm)       | S Standard  | N Natural Carbon  | E EPDM               |
| B End Flow       | 10 9.875" (251 mm)      | F Fine      | S Silvered Carbon | N Nitrile            |
|                  | 11 10" (254 mm)         | H High Temp | A Anion Resin     | P PE                 |
|                  | 19 19.50" (500 mm)      | E End Flow  | C Cation Resin    | S Silicone           |
|                  | 20 20" (508 mm)         |             | M Mixed Bed Resin | V Viton*             |
|                  | 29 29.50" (750 mm)      |             |                   |                      |
|                  | 30 30" (762 mm)         |             |                   |                      |
|                  | 39 39.25" (1000 mm)     |             |                   |                      |
|                  | 40 40" (1016 mm)        |             |                   |                      |

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# Stainless Steel Filters



## Stainless Steel Filters

Traditional polymer constructed filters can sometimes have limitations, when filtering certain chemicals there can be issues with compatibility, exposure time of the chemical or a combination of high temperature and viscosity. Stainless steel chemical filters from Parker domnick hunter, allow you to achieve absolute retention ratings whilst overcoming these compatibility issues making them suitable for a wide range of demanding applications.

The stainless steel construction provides excellent regeneration opportunities for extended service life, making stainless steel filters a cost-effective filtration solution to chemical filtration.

**PROSTEEL** filters are manufactured from 316L stainless steel. The filters are available in two formats either pleated or wrapped depending on flow rates and dirt holding requirements. Offering a range of micron rating between 3 and 100 microns absolute and nominally rated depending on your requirements.





PROSTEEL A Filter Cartridges

- liquid filters
- 316L stainless steel

PROSTEEL A filters provide the ideal solution in applications where traditional polymer based filters are limited by compatibility, exposure time or a combination of high temperature and viscosity.

They are ideally suited to filtration of the solvents. The Parker domnick hunter range of stainless steel filters provide a solution to compatibility issues while maintaining absolute retention ratings down to 3.0 micron. 316L stainless steel fibres are sintered together into a graded pore structure.

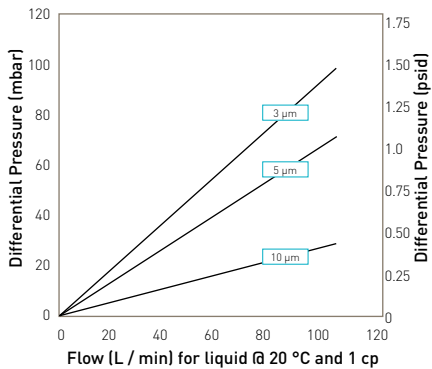
The efficiency of the media increases through the filtration bed resulting in excellent dirt holding capacity while maintaining high relative flow rates compared to alternative technology such as sintered powder tubes and metal membranes. The filters are available in two formats both using the same filtration media but one manufactured in a pleated construction and one in a cylindrical wrap. This allows a cost-effective selection depending on flow rate and dirt holding requirements.

Features and Benefits

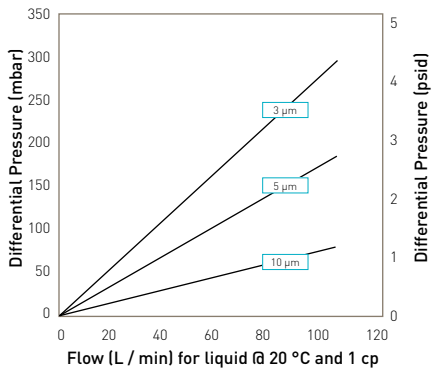
- Absolute rated stainless steel liquid filters
- Ideal for aggressive solvents, viscous and hot solutions
- Removal rating 3, 5 and 10 microns
- Compatible with most solvents
- Graded density metal fibre technology provides exceptional dirt holding capacity while retaining excellent flow rates
- Available in two formats; pleated and wrapped, for complete system optimisation



Performance Characteristics



Pleated cartridge flow rates  
10" Size (250 mm) Cartridge



Cylindrically wrapped cartridge flow rates  
10" Size (250 mm) Cartridge

PROSTEEL A Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: 316L Stainless Steel
- Inner Support Core: 316L Stainless Steel
- Outer Protection Cage: 316L Stainless Steel
- End Caps: 316L Stainless Steel
- Standard o-rings/gaskets\*: EPDM
- Assembly Method: TIG Welded

\*All o-rings are manufactured for FDA approved compounds.

Recommended Operating Conditions

| Operating Temperature | °C | °F  | Maximum Forward DP |        | Maximum Reverse DP |        |
|-----------------------|----|-----|--------------------|--------|--------------------|--------|
|                       |    |     | (bar)              | (psid) | (bar)              | (psid) |
| 200                   |    | 392 | 25                 | 364    | 3                  | 44     |

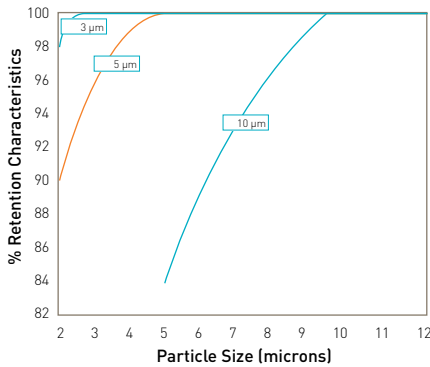
Note: The maximum operating temperature is dependant on o-ring selection and properties of the liquid being filtered.

Effective Filtration Area (EFA)

- ZCFF Cylindrical Wrap  
10" (250 mm) 0.05 m² (0.53 ft²)
- ZCMF Pleated  
10" (250 mm) 0.13 m² (1.39 ft²)

Retention Characteristics

The retention characteristics of the stainless steel filters are determined using ACFTD in accordance with the single pass test ASTM 795-88.



Dirt Holding Capacity

The table below gives an indication of dirt holding capacity in grams when tested in accordance with the Multipass method ISO 168892.

| Type | Micron Rating |     |      |
|------|---------------|-----|------|
|      | 3.0           | 5.0 | 10.0 |
| ZCCF | 3.0           | 3.5 | 4.0  |
| ZCMF | 7.0           | 7.6 | 8.4  |

Change Differential Pressure (dP) = 8 x initial dP.

Integrity Test Data

The general condition of the cartridge can be tested via the bubble point method. Typical values are detailed in the table below.

| Micron Rating |         | 3.0   | 5.0  | 10.0 |
|---------------|---------|-------|------|------|
| Bubble Point  | (mbarg) | 125.0 | 76.0 | 37.0 |
| in Water      | (psig)  | 1.78  | 1.1  | 0.54 |

Applications

- High viscous liquids
- Corrosive liquids
- High temperature processing
- Recovery of valuable particulate

Ordering Information

| ZC   |         |                         | -            |               | -                   |                              |
|------|---------|-------------------------|--------------|---------------|---------------------|------------------------------|
| Code | Type    | Code   Length (Nominal) |              | Code   Micron | Code   Endcap (10") | Code   O-rings               |
| CF   | Wrapped | B                       | 2.5" (65 mm) | 003 3.0 µm    | B dh DOE            | E EPDM                       |
| MF   | Pleated | A                       | 5" (125 mm)  | 005 5.0 µm    | C BF / 226 Bayonet  | P PTFE Encapsulated Silicone |
|      |         | 1                       | 10" (250 mm) | 010 10.0 µm   | T TRUESEAL          | S Silicone                   |
|      |         | 2                       | 20" (500 mm) |               |                     | V Viton*                     |
|      |         | 3                       | 30" (750 mm) |               |                     | Z Demi A & B Std             |

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PROSTEEL N Filter Cartridges

- liquid filters
- 316L stainless steel

PROSTEEL N filters provide the ideal solution in applications where traditional polymer based filters are limited by compatibility, exposure time or a combination of high temperature and viscosity.

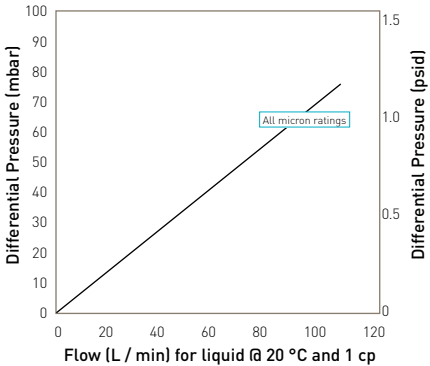
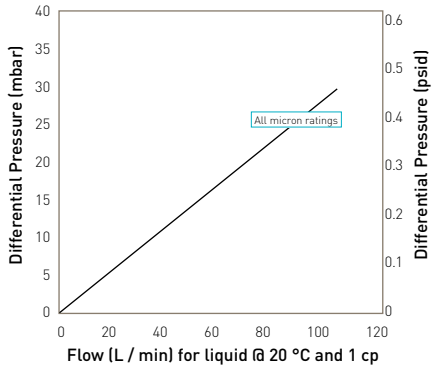
The Parker domnick hunter range of stainless steel filters provides the solution to compatibility issues while maintaining excellent flow rates for clarifying duties. The filters are available in two formats both using the same filtration media but one manufactured in a pleated construction and one in a cylindrical wrap. This allows a cost-effective selection depending on flow rate and dirt holding requirements.

Features and Benefits

- Nominally rated stainless steel liquid filters
- Ideal for aggressive solvents, viscous and hot solutions
- Removal rating from 5 to 100 microns
- Compatible with most solvents
- Stainless steel mesh ensures excellent regeneration characteristics for extended service life
- Available in two formats; pleated and wrapped, for complete system optimisation



Performance Characteristics



Pleated cartridge flow rates  
10" Size (250 mm) Cartridge

Cylindrically wrapped cartridge flow rates  
10" Size (250 mm) Cartridge

PROSTEEL N Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: 316L Stainless Steel
- Inner Support Core: 316L Stainless Steel
- Outer Protection Cage: 316L Stainless Steel
- End Caps: 316L Stainless Steel
- Standard o-rings/gaskets\*: EPDM
- Assembly Method: TIG Welded

\*All o-rings are manufactured for FDA approved compounds.

Recommended Operating Conditions

| Operating Temperature |     | Maximum Forward DP |        | Maximum Reverse DP |        |
|-----------------------|-----|--------------------|--------|--------------------|--------|
| °C                    | °F  | (bar)              | (psid) | (bar)              | (psid) |
| 200                   | 392 | 25                 | 364    | 3                  | 44     |

Note: The maximum operating temperature is dependant on o-ring selection and properties of the liquid being filtered.

Effective Filtration Area (EFA)

- ZCCM Cylindrical Wrap  
10" (250 mm) 0.05 m² (0.53 ft²)
- ZCPM Pleated  
10" (250 mm) 0.13 m² (1.39 ft²)

Applications

- High viscous liquids
- Corrosive liquids
- High temperature processing
- Recovery of valuable particulate

Ordering Information

ZC

-

-

| Code   Type |         | Code   Length [Nominal] |      |          | Code   Micron |          | Code   Endcap [10"] |                  | Code   O-rings |                |
|-------------|---------|-------------------------|------|----------|---------------|----------|---------------------|------------------|----------------|----------------|
| CM          | Wrapped | B                       | 2.5" | (65 mm)  | 005           | 5.0 μm   | B                   | dh DOE           | E              | EPDM           |
| PM          | Pleated | A                       | 5"   | (125 mm) | 010           | 10.0 μm  | C                   | BF / 226 Bayonet | P              | PTFE           |
|             |         | 1                       | 10"  | (250 mm) | 020           | 20.0 μm  | T                   | TRUESEAL         | S              | Silicone       |
|             |         | 2                       | 20"  | (500 mm) | 040           | 40.0 μm  | Z                   | Demi A & B Std   | V              | Viton*         |
|             |         | 3                       | 30"  | (750 mm) | 100           | 100.0 μm |                     |                  | Z              | Demi A & B Std |

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Parker's Fulflo® stainless steel cartridges provide the optimum filtration solution for fluids and gases in high temperature and high flow rate applications.

Available in a cylindrical or pleated design, cleanable stainless steel cartridges are the logical choice when natural and synthetic media cartridges cannot meet aggressive process conditions.

Fulflo® reusable 304 and 316 grade stainless steel cartridges offer versatility of choice with fourteen nominal particle removal ratings, six standard lengths and a variety of end configurations and seal materials.

Features and Benefits

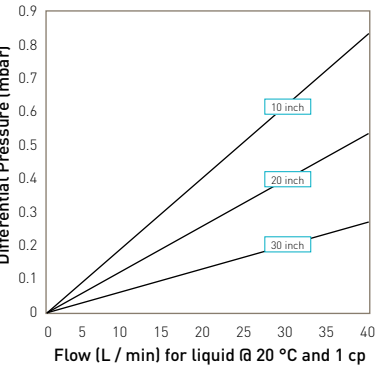
- Temperature capability up to 260°C (500°F) with synthetic seals; up to 816°C (1500°F) with NPT connections
- Available in 304 and 316 stainless steel for compatibility choice with aggressive chemicals
- Available in fourteen nominal ratings from 2 to 840 microns for a wide range of particle size removal
- Variety of seal configurations allow retrofit in many filter vessel designs
- Welded and crimped construction eliminates the need for adhesive which can be a contaminant source and limit temperature range
- Optional perforated stainless steel pleat protectors minimize handling damage

Metallic Filter Cartridges

- liquid filters
- stainless steel



Performance Characteristics



Flow rates are the same for all ratings  
Centre core id and length are primary flow restrictions

10" Size (250 mm) Cartridge

Metallic Filter Cartridges

Specifications

Materials of Construction

- Filtration Media: Stainless Steel Wire Cloth
- Structural Components: 100% Stainless Steel
- Seal Materials: Grommets: Buna N, Viton, PTFE, EPDM
- O-rings: Buna N, EPDM, Viton, PFA encapsulated viton
- Construction Method: Welded

Meets FDA guidelines with optional seal materials ("F" Code)

Maximum Recommended Operating Conditions

- Temperature 816°C (1500°F): NPTF and NPTM styles only
- 260°C (500°F): Any cartridge style with PTFE grommet
- 204°C (400°F): Any cartridge style with Viton or PFA encapsulated Viton seal material
- 149°C (300°F): Any cartridge style with EPDM seal material
- 121°C (250°F): Any cartridge style with Buna N Seal material

Maximum Differential Pressure

- Standard core: 4.1 bar (60 psi)
- High pressure core: 20.7 bar (300 psi)

Recommended Changeout Differential Pressure

- 2.4 bar (35 psid)

Effective Filtration Area

- Cylindrical: 0.5ft² / 10" length (465 cm² / 254 mm)
- Pleated: 1.7ft² / 10" length (1580 cm² / 254 mm)

Dimensions

- Outside Diameter Cylindrical: 64 mm (2 1/2")
- Pleated: 67 mm (2 5/8")

Inside Diameter

- 27 mm (1 1/16")

Lengths (nominal)

- 10", 20" and 30"

Grommet

- 27 mm (1 1/16") ID x 48 mm (1 7/8") OD

Removal Rating / Mesh Count / Open Area

| Micron Rating        |      | Mesh Count | Percent Open Area |
|----------------------|------|------------|-------------------|
| Nominal / (Absolute) |      | (per inch) |                   |
| 2                    | (9)  | 325 x 2300 | NA                |
| 5                    | (14) | 200 x 1400 | NA                |
| 10                   | (18) | 165 x 1400 | NA                |
| 20                   | (32) | 200 x 600  | NA                |
| 40                   | (55) | 120 x 400  | NA                |
| 75                   |      | 190 x 200  | 35                |
| 100                  |      | 30 x 150   | 31                |
| 150                  |      | 90 x 100   | 33                |
| 190                  |      | 70 x 80    | 35                |
| 230                  |      | 50 x 60    | 41                |
| 280                  |      | 40 x 50    | 35                |
| 370                  |      | 40 x 40    | 36                |
| 540                  |      | 30 x 30    | 45                |
| 840                  |      | 20 x 20    | 52                |

Ratings from 2 - 40 micrometers are twill dutch weave pattern  
Ratings from 75 - 840 micrometers are open square weave pattern

Applications

- Viscous fluids
- Hot wax
- Aggressive gases
- Polymer filtration
- Corrosive fluid
- Catalyst recovery
- Caustic cleaning solutions

Ordering Information

-

-

| Code   Cartridge                | Nominal Micron Rating | Code   Length (Nominal) | Code   Media Support Construction | Code   Seal Material              | Code   Endcap Configuration                       | Code   Special Options            |
|---------------------------------|-----------------------|-------------------------|-----------------------------------|-----------------------------------|---------------------------------------------------|-----------------------------------|
| CSS Cylindrical Stainless Steel |                       | 4 4" (102 mm)           | G 304 Stainless Steel             | E EPDM                            | DO Double open end (DOE)                          | F FDA Grade Seal Material         |
| PSS Pleated Stainless Steel     | 2                     | 9 9" (248 mm)           | S 316 Stainless Steel             | F PTFE (grommet only)             | DX Double open end with extended core             | H High Pressure Core (316 SS)     |
|                                 | 5                     | 10 10" (254 mm)         |                                   | N Buna N                          | FC Single open end with 1" NPTF female connection | P Pleat Protector Sleeve (316 SS) |
|                                 | 10                    | 19 19.5" (495 mm)       |                                   | T PFA / Viton* (O-ring only)      | MC Single open end with 1" NPTM male              |                                   |
|                                 | 20                    | 20 20" (508 mm)         |                                   | V Viton*                          | SC 226 O-ring / Flat                              |                                   |
|                                 | 29                    | 29 29" (743 mm)         |                                   | X No Seal Material (FC, MC style) | TC 222 O-ring / Flat                              |                                   |
|                                 | 40                    | 30 30" (762 mm)         |                                   |                                   |                                                   |                                   |
|                                 | 75                    | 40 40" (1016 mm)        |                                   |                                   |                                                   |                                   |
|                                 | 100                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 150                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 190                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 230                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 280                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 370                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 540                   |                         |                                   |                                   |                                                   |                                   |
|                                 | 840                   |                         |                                   |                                   |                                                   |                                   |

\*Viton is a registered trademark of E.I. DuPont de Nemours & Co., Inc

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# Bag Filters



## Bag Filters

Filtration systems using bags are one of the most popular filtration methods for liquid process applications. They provide a versatile cost effective and consistent filtration system suitable for a broad range of applications from small batch operations to bulk processing. The filter media selection is determined by the size of particles to be removed, the type of particles to be removed (deformable and non-deformable), the required efficiency and the temperature and chemical compatibility of the media and the process fluid.

Particulate is captured inside the filter bag thus allowing clean, easy disposal. This can be of particular advantage for applications that involve aggressive chemicals.

Parker domnick hunter's range of bag filters are manufactured from a variety of filter media each specifically chosen for its compatibility with a wide range of process liquids. Parker domnick hunter bag filters are of a fully welded design rather than sewn. No process liquid can bypass through needle holes caused by the sewing process or around a sewn ring.





Parker domnick hunter’s range of bag filters are manufactured from a variety of filter media each specifically chosen for its compatibility with a wide range of process liquids. Parker bag filters are of a fully welded design rather than sewn. No process liquid can bypass through needle holes caused by the sewing process or around a sewn ring. Parker domnick hunter’s range of filter bags include:

**Standard filter bags**  
Available in polypropylene, polyester and nylon from 1 to 1000µm.

**Extended life bags**  
Increased thickness of the filter media can increase lifetime by up to 5 times that of a standard bag.

The filtration mechanism employed within filter bags allows high flow rates and high dirt holding capacity, this combined with low maintenance cost and quick change-out makes bag filtration an extremely cost effective means of liquid filtration. Bags are available to suit most common filter housings.

Features and Benefits

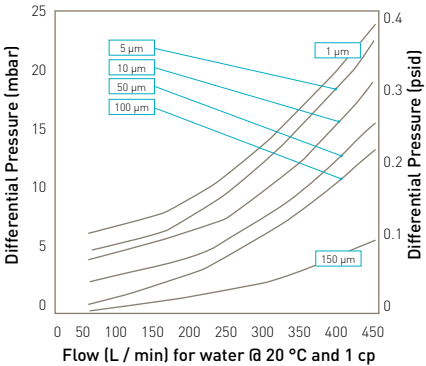
- From 1 to 11000 microns
- Low maintenance costs and quick change-out

Bag Filters

- mixed media, mesh and felt



Performance Characteristics



For double length bags multiply flow rate by 2.1  
For triple length by 3.2

Felt Media

| Bag size | Diameter    | Length        | Surface Area | Volume   | Max Flow Rate |
|----------|-------------|---------------|--------------|----------|---------------|
| 1        | 7" (180 mm) | 17" (435 mm ) | 0.25 m²      | 11.0 ltr | 20 m³/hr      |
| 2        | 7" (180 mm) | 32" (810 mm ) | 0.5 m²       | 20.5 ltr | 40 m³/hr      |
| 1 (mini) | 4" (104 mm) | 9" (230 mm )  | 0.07 m²      | 1.9 ltr  | 6 m³/hr       |
| 2 (mini) | 4" (180 mm) | 15" (380 mm ) | 0.12 m²      | 3.2 ltr  | 10 m³/hr      |

Flow rate is dependant upon media type, micron rating and the fluid being filtered

Bag Filters

Specifications

Materials of Construction

- Filtration Media: Polypropylene Felt  
Viscose Felt  
Nylon Felt  
Polyester Felt  
Nomex\* Felt  
Nylon Mesh
- Ring: Electro Plated Steel  
Stainless Steel  
Moulded Polypropylene  
Polypropylene  
Moulded Santoprene

\*Nomex is a registered trademark of E.I. du Pont de Numours and Co Inc.

Viscous Flow Correction Factors

| Viscous Correction Factors |       |      |      |      |      |      |      |     |     |     |     |     |
|----------------------------|-------|------|------|------|------|------|------|-----|-----|-----|-----|-----|
| Fluid Viscosity (cps)      | 10000 | 8000 | 6000 | 4000 | 2000 | 1500 | 1000 | 800 | 600 | 400 | 200 | 1   |
| Flow rate (% water)        | 2.1   | 2.6  | 3.5  | 5    | 8    | 11   | 16   | 17  | 25  | 35  | 58  | 100 |

Compatibility

| Material      | Max Temperature | Organic Solvents | Oils and Fats | Alkalies | Organic Acids | Mineral Acids | Oxidising Agents | Resistance micro-organisms |
|---------------|-----------------|------------------|---------------|----------|---------------|---------------|------------------|----------------------------|
| Polypropylene | 95°C [203°F]    | Good             | V. Good       | Good     | V. Good       | Good          | Fair             | Fair                       |
| Viscose       | 121°C [250°F]   | V. Good          | V. Good       | Good     | Good          | Poor          | Fair             | Fair                       |
| Polyester     | 150°C [302°F]   | V. Good          | V. Good       | Good     | Good          | Good          | Good             | Good                       |
| Nylon         | 135°C [275°F]   | V. Good          | V. Good       | Good     | Fair          | Poor          | Poor             | Poor                       |
| Nomex         | 220°C [428°F]   | V. Good          | V. Good       | Good     | Fair          | Fair          | Poor             | Poor                       |

Applications

- Paints
- Pigments
- Lacquers
- Varnishes
- Inks
- Waxes
- Coolants
- Cutting oils
- Process waters
- Acrylics

Ordering Information

Bag Filters Standard

| Code   Style       | Code   Diameter      | Code   Yarn                      | Code   Media                                                                                               | Code   Felt Rating                                                  | Code   Mesh Rating                                                        | Code   Ring                                                                    | Code   Ring          |
|--------------------|----------------------|----------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------------|
| SG Ring<br>SC Band | 7 Standard<br>4 Mini | 1 Single<br>2 Double<br>3 Triple | P Polypropylene Felt<br>V Viscose Felt<br>N Nylon Felt<br>S Polyester Felt<br>T Nomex Felt<br>M Nylon Mesh | 001 1*<br>005 5<br>010 10<br>025 25<br>050 50<br>100 100<br>150 150 | 045 45<br>100 100<br>150 150<br>250 250<br>500 500<br>800 800<br>999 1000 | E Electro Plated Steel<br>S Stainless Steel<br>M Moulded PP<br>P Polypropylene | H Handles<br>L Loops |

\*Not viscose

Extended Life Bag Filters

| Code   Style | Code   Diameter      | Code   Yarn                      | Code   Media                       | Code   Felt Rating                                       | Code   Ring                                                                                            | Code   Ring        |
|--------------|----------------------|----------------------------------|------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------|
| SG Standard  | 7 Standard<br>4 Mini | 1 Single<br>2 Double<br>3 Triple | G PP Extra Life<br>F PE Extra Life | 001 1*<br>005 5<br>010 10<br>025 25<br>050 50<br>100 100 | E Electro Plated Steel<br>S Stainless Steel<br>M Moulded PP<br>G Moulded P/Est<br>Q Moulded Santoprene | X Plain<br>L Loops |

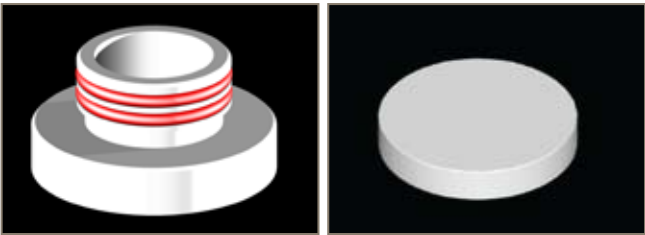
\*Not viscose

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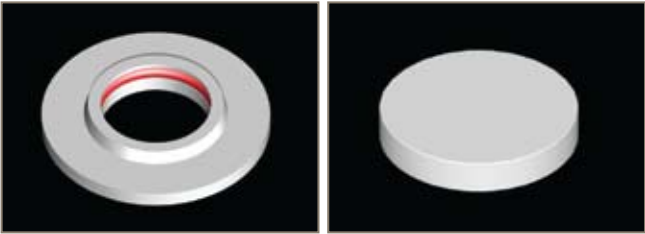
# Endcap Styles



(2) BS226 and Flat



(3) BS222 and Flat

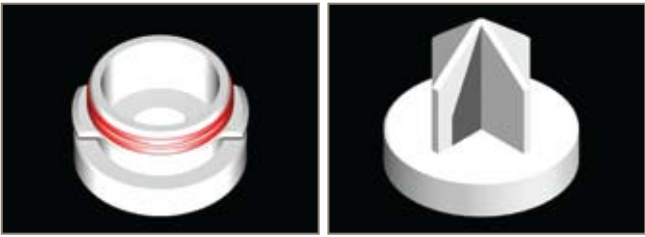


(9) BS213 and Flat

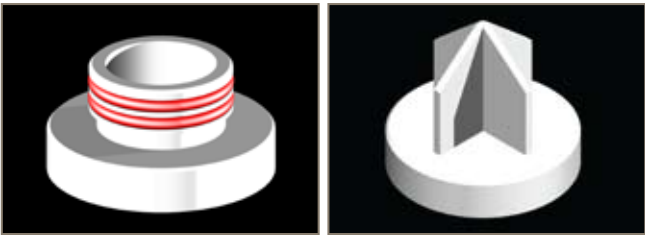


(SM) 226 O-ring flat cap with handle

| Cross reference endcap chart |         |    |    |    |
|------------------------------|---------|----|----|----|
| Parker domnick hunter        | PA      | MI | SA | AM |
| 0                            | MCY 10" | F  | 23 |    |
| 2                            | 2       |    |    |    |
| 3                            | 3       | 0  | 27 |    |
| 7                            | 7       | 7  | 25 |    |
| 8                            | 7       | 5  | 26 |    |
| 9                            |         |    |    | 9R |



(7) BS226 and Spear



(8) BS222 and Spear



(0) DOE

| Endcap code equivalents used in this catalogue |   |    |      |
|------------------------------------------------|---|----|------|
| BS 226 / Flat                                  | 2 | SC |      |
| BS 226 / Spear                                 | 7 | SF | C    |
| BS 222 / Flat                                  | 3 | TC | E    |
| BS 222 / Spear                                 | 8 | TF | D    |
| BS 213 / Flat                                  | 9 | PR |      |
| DOE                                            | 0 | DO | B, L |

# A Dedicated Housing Range



HIL

- Industrial single-element liquid housing
- BSPP inlet / outlet standard connections
- Suitable replacement for plastic housings
- Suitable for cartridge types DOE or 222



HIL PLUS

- Industrial single-element liquid housing
- Available in 3 different classes: Atex, CE and High Pressure
- Industrial, beverage and pharmaceutical finishes available
- Suitable for cartridge types DOE or 222



ZVP (PLASTIC)

- Single cartridge polypropylene / nylon housing
- Accepts DOE filters with knife edge sealing
- Accepts plug-in cartridges with positive o-ring seals



HEATER (JACKETS)

- Heating system for vent applications
- Retrofittable to existing systems
- Accurate temperature control
- Easy installation



DEMI HIF

- Industrial single element air / liquid housings
- 1/2" BSPP or NPT inlet / outlet standard connection
- Suitable replacement for plastic housings
- Suitable for Parker domnick hunter 'Z' style 116 'O' rings



DEMI HSV

- Direct connection to tank boss allows housing to be self-supportive
- Corrosion resistant 316L stainless steel
- Easy assembly and maintenance



VILCE (MULTI)

- Multi-element industrial liquid housing
- Laboratory and pilot scale to large industrial applications
- Flow efficient design with low pressure drop



BAGS

- Single bag and mini bag housings
- Unsurpassed flow characteristics and economy
- Wide range of housing types

For more information on Parker domnick hunter's complete housing range, please contact your local Parker domnick hunter representative for a copy of the latest technical literature.

# Chemical Compatibility

| <div>NC = Not Compatible</div> <div>LC = Limited Compatibility</div> <div>C = Compatible</div> <div>- = No Data</div> |                     |                  |                   |                         |         |              |                       |                        |              |                       |            |            |                      |            |
|-----------------------------------------------------------------------------------------------------------------------|---------------------|------------------|-------------------|-------------------------|---------|--------------|-----------------------|------------------------|--------------|-----------------------|------------|------------|----------------------|------------|
|                                                                                                                       |                     | Acetic acid 3.5N | Acetic acid 8.75N | Acetic acid conc. 17.5N | Acetone | Acetonitrile | Ammonium Hydroxide 8N | Ammonium Oxalate 0.07N | Amyl Acetate | Aqueous Ammonia 15.5N | Butan-1-ol | Butan-2-ol | Carbon Tetrachloride | Chloroform |
|                                                                                                                       | SPUNFLOW QA         | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | SPUNFLOW QN         | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | SPUNFLOW QE         | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | DURABOND            | C                | C                 | C                       | LC      | LC           | -                     | -                      | -            | -                     | C          | C          | NC                   | NC         |
|                                                                                                                       | PROBOND             | -                | -                 | -                       | -       | -            | -                     | NC                     | -            | LC                    | LC         | NC         | NC                   | NC         |
|                                                                                                                       | TEXTFLOW (PP)       | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       |                     |                  |                   |                         |         |              |                       |                        |              |                       |            |            |                      |            |
|                                                                                                                       | FLO-PAC             | NC               | NC                | NC                      | C       | C            | -                     | C                      | C            | -                     | LC         | LC         | C                    | LC         |
|                                                                                                                       | FLO-PAC+            | NC               | NC                | NC                      | C       | C            | -                     | C                      | C            | -                     | LC         | LC         | C                    | LC         |
|                                                                                                                       | POLYFLOW II         | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | POLYFLOW II G       | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | GLAS-TECH II        | -                | C                 | C                       | C       | -            | C                     | C                      | LC           | LC                    | C          | C          | NC                   | NC         |
|                                                                                                                       | Pleated Bag (PB) PP | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | Pleated Bag (PB) GF | -                | C                 | C                       | C       | -            | C                     | C                      | LC           | LC                    | C          | C          | NC                   | NC         |
|                                                                                                                       | FLUOROFLOW          | C                | C                 | C                       | C       | C            | C                     | C                      | C            | NC                    | C          | C          | NC                   | NC         |
|                                                                                                                       | FLUOROFLOW-Select   | C                | C                 | C                       | C       | C            | C                     | C                      | C            | NC                    | C          | C          | NC                   | NC         |
|                                                                                                                       | FLUOROCAP           | C                | C                 | C                       | C       | C            | C                     | C                      | C            | NC                    | C          | C          | NC                   | NC         |
|                                                                                                                       | MAXGUARD            | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       | MAXGUARD Select     | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       |                     |                  |                   |                         |         |              |                       |                        |              |                       |            |            |                      |            |
|                                                                                                                       | CARBOFLOW MX        | C                | C                 | C                       | C       | C            | C                     | C                      | -            | C                     | C          | C          | NC                   | NC         |
|                                                                                                                       |                     |                  |                   |                         |         |              |                       |                        |              |                       |            |            |                      |            |
|                                                                                                                       | PROSTEEL A          | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | C                    | C          |
|                                                                                                                       | PROSTEEL N          | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | C                    | C          |
|                                                                                                                       | FULFLO Metallic     | C                | C                 | C                       | C       | C            | C                     | C                      | C            | C                     | C          | C          | C                    | C          |
|                                                                                                                       |                     |                  |                   |                         |         |              |                       |                        |              |                       |            |            |                      |            |
|                                                                                                                       | Nitrile             | LC               | LC                | LC                      | NC      | NC           | NC                    | NC                     | LC           | LC                    | LC         | LC         | NC                   | NC         |
|                                                                                                                       | EPDM                | C                | LC                | LC                      | NC      | NC           | C                     | C                      | NC           | C                     | C          | LC         | NC                   | NC         |
|                                                                                                                       | VITON               | C                | LC                | NC                      | NC      | NC           | C                     | C                      | NC           | C                     | C          | C          | C                    | LC         |
|                                                                                                                       | SILICONE            | C                | NC                | NC                      | NC      | NC           | C                     | C                      | LC           | C                     | C          | C          | NC                   | NC         |

Note: For Bag Filter compatibilities please see page 57

| Cyclohexane | Ethanol | Ethanol 45% | Ethyl Acetate | Formic acid conc. | Glycerol | Hexane | Hydrochloric acid 1N | Hydrochloric acid 10% | Hydrochloric acid conc. | Hydrochloric acid conc. 13% | Hydrogen Peroxide | Hydrogen Peroxide 10 Vol | Hydrogen Peroxide 100 Vol | Methanol | Methyl-Iso-Butylketone | Methylene Chloride @ 40 °C (104 °F) | Nitric Acid 2N 14.4% |
|-------------|---------|-------------|---------------|-------------------|----------|--------|----------------------|-----------------------|-------------------------|-----------------------------|-------------------|--------------------------|---------------------------|----------|------------------------|-------------------------------------|----------------------|
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | LC            | -                 | -        | NC     | -                    | -                     | -                       | -                           | -                 | -                        | -                         | C        | NC                     | NC                                  | NC                   |
| -           | -       | -           | NC            | -                 | LC       | LC     | NC                   | LC                    | -                       | LC                          | LC                | LC                       | LC                        | -        | NC                     | -                                   | LC                   |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| LC          | C       | C           | C             | NC                | LC       | LC     | NC                   | NC                    | NC                      | NC                          | NC                | NC                       | NC                        | C        | C                      | C                                   | NC                   |
| LC          | C       | C           | C             | NC                | LC       | LC     | NC                   | NC                    | NC                      | NC                          | NC                | NC                       | NC                        | C        | C                      | C                                   | NC                   |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | LC            | C                 | C        | NC     | C                    | -                     | C                       | -                           | C                 | C                        | C                         | C        | C                      | LC                                  | C                    |
| NC          | C       | C           | NC            | LC                | C        | NC     | C                    | C                     | LC                      | C                           | C                 | C                        | C                         | C        | NC                     | NC                                  | C                    |
| C           | C       | C           | C             | C                 | C        | C      | C                    | C                     | C                       | C                           | C                 | C                        | C                         | C        | C                      | C                                   | C                    |
| C           | C       | C           | C             | C                 | C        | C      | C                    | C                     | C                       | C                           | C                 | C                        | C                         | C        | C                      | C                                   | C                    |
| C           | C       | C           | C             | C                 | C        | C      | C                    | C                     | C                       | C                           | C                 | C                        | C                         | C        | C                      | C                                   | C                    |
| LC          | LC      | LC          | N             | LC                | C        | C      | LC                   | -                     | NC                      | NC                          | NC                | NC                       | NC                        | C        | NC                     | NC                                  | NC                   |
| NC          | C       | C           | C             | C                 | C        | NC     | C                    |                       | NC                      | NC                          | C                 | C                        | C                         | C        | NC                     | -                                   | LC                   |
| NC          | C       | C           | NC            | NC                | C        | NC     | C                    |                       | NC                      | NC                          | C                 | C                        | C                         | NC       | NC                     | -                                   | C                    |
| NC          | LC      | C           | LC            | NC                | C        | NC     | C                    |                       | NC                      | NC                          | C                 | C                        | C                         | C        | LC                     | -                                   | C                    |

## Chemical Compatibility

| NC = Not Compatible<br>LC = Limited Compatibility<br>C = Compatible<br>- = No Data |                     |                   |       |                 |         |                   |                   |                   |          |             |                         |                           |                       |                         |
|------------------------------------------------------------------------------------|---------------------|-------------------|-------|-----------------|---------|-------------------|-------------------|-------------------|----------|-------------|-------------------------|---------------------------|-----------------------|-------------------------|
|                                                                                    |                     | Nitric acid 15.8N | Ozone | Paraffin yellow | Pentane | Perchloroethylene | Petroleum spirits | Phend [aq] [0.5N] | Phend 5% | Phend 0.25% | Polyethylene Glycol 600 | Potassium Dichromate 0.1N | Potassium Iodine 0.6N | Potassium Hydroxide 10N |
|                                                                                    | SPUNFLOW QA         | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | SPUNFLOW QN         | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | SPUNFLOW QE         | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | DURABOND            | LC                | NC    | C               | NC      | -                 | NC                | LC                | LC       | LC          | -                       | C                         | C                     | C                       |
|                                                                                    | PROBOND             | NC                | NC    | C               | -       | -                 | -                 | -                 | -        | -           | -                       | LC                        | -                     | -                       |
|                                                                                    | TEXTFLOW (PP)       | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | FLO-PAC             | NC                | NC    | -               | C       | LC                | C                 | NC                | NC       | NC          | -                       | -                         | -                     | NC                      |
|                                                                                    | FLO-PAC+            | NC                | NC    | -               | C       | LC                | C                 | NC                | NC       | NC          | -                       | -                         | -                     | NC                      |
|                                                                                    | POLYFLOW II         | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | POLYFLOW II G       | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | GLAS-TECH II        | NC                | NC    | -               | -       | NC                | NC                | -                 | -        | -           | NC                      | -                         | -                     | NC                      |
|                                                                                    | Pleated Bag (PB) PP | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | Pleated Bag (PB) GF | NC                | NC    | -               | -       | NC                | NC                | -                 | -        | -           | NC                      | -                         | -                     | NC                      |
|                                                                                    | FLUOROFLOW          | C                 | C     | C               | LC      | -                 | LC                | -                 | C        | C           | -                       | C                         | C                     | C                       |
|                                                                                    | FLUOROFLOW-Select   | C                 | C     | C               | LC      | -                 | LC                | -                 | C        | C           | -                       | C                         | C                     | C                       |
|                                                                                    | FLUOROCAP           | C                 | C     | C               | LC      | -                 | LC                | -                 | C        | C           | -                       | C                         | C                     | C                       |
|                                                                                    | MAXGUARD            | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | MAXGUARD Select     | C                 | -     | C               | LC      | -                 | NC                | -                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | CARBOFLOW MX        | LC                | NC    | C               | NC      | -                 | NC                | LC                | LC       | LC          | -                       | C                         | C                     | C                       |
|                                                                                    | PROSTEEL A          | C                 | C     | C               | C       | C                 | C                 | C                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | PROSTEEL N          | C                 | C     | C               | C       | C                 | C                 | C                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | FULFLO Metallic     | C                 | C     | C               | C       | C                 | C                 | C                 | C        | C           | C                       | C                         | C                     | C                       |
|                                                                                    | Nitrile             | NC                | NC    | LC              | C       | -                 | NC                | -                 | -        | NC          | -                       | C                         | C                     | LC                      |
|                                                                                    | EPDM                | NC                | -     | NC              | NC      | -                 | NC                | -                 | C        | C           | -                       | C                         | C                     | C                       |
|                                                                                    | VITON               | NC                | -     | C               | C       | -                 | C                 | -                 | C        | C           | -                       | C                         | C                     | C                       |
|                                                                                    | SILICONE            | NC                | -     | NC              | NC      | -                 | NC                | -                 | C        | C           | -                       | C                         | C                     | C                       |

Note: For Bag Filter compatibilities please see page 57

The chemicals are arranged in alphabetical order using their most common or trade names. If the chemical in question does not appear to be listed, it may be found elsewhere in the table under a pseudonym, in particular its IUPAC<sup>11</sup> name. With regard to compatibility:

- Any product that has Limited Compatibility (LC) at ambient temperatures should not be used at a higher temperature.
- The list of compatibilities does not take into account any synergistic effects of more than one chemical present in the solution to be filtered.

- Test Conditions - 72 hours at ambient temperature and pressure, unless otherwise stated
- Contact Parker donnick hunter for confirmation of compatibility with specific operating conditions.

|  | Propan-1-ol | Propan-2-ol | Pyridine | Sodium Chloride 0.5N | Sodium Hydroxide 2N,8% | Sodium Hydroxide 7N,28% | Sodium Hypochlorite | Sodium salts | Sodium thiosulphate 0.1N | Sulphuric acid 1N | Sulphuric acid conc. | Sulphurous acid | Toluene | 1,1,1 Trichloroethane | 1,1,2 Trichloroethane | Trichloroacetic Acid 80% | Trichloroacetic Acid 5N | Xylene |
|--|-------------|-------------|----------|----------------------|------------------------|-------------------------|---------------------|--------------|--------------------------|-------------------|----------------------|-----------------|---------|-----------------------|-----------------------|--------------------------|-------------------------|--------|
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | LC                  | -            | -                        | -                 | -                    | -               | NC      | -                     | -                     | -                        | -                       | -      |
|  | C           | C           | LC       | LC                   | -                      | -                       | -                   | -            | C                        | LC                | NC                   | LC              | LC      | -                     | -                     | -                        | -                       | LC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | LC          | LC          | -        | C                    | NC                     | NC                      | NC                  | -            | LC                       | NC                | NC                   | NC              | C       | C                     | C                     | NC                       | NC                      | LC     |
|  | LC          | LC          | -        | NC                   | NC                     | NC                      | -                   | LC           | NC                       | NC                | NC                   | NC              | C       | C                     | C                     | NC                       | NC                      | LC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | NC       | C                    | C                      | NC                      | NC                  | C            | -                        | C                 | NC                   | NC              | NC      | -                     | NC                    | -                        | -                       | LC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | NC       | C                    | C                      | NC                      | NC                  | C            | -                        | C                 | NC                   | NC              | NC      | -                     | NC                    | -                        | -                       | LC     |
|  | C           | C           | C        | C                    | C                      | C                       | C                   |              |                          | -                 | LC                   | -               | C       | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | C                   |              |                          | -                 | LC                   | -               | C       | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | -                   | -            | C                        | C                 | LC                   | -               | NC      | -                     | LC                    | C                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | LC                  | -            | C                        | C                 | NC                   | C               | NC      | NC                    | NC                    | C                        | C                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       | C                   | C            | C                        | C                 | C                    | C               | C       | C                     | C                     | C                        | C                       | C      |
|  | C           | C           | C        | C                    | C                      | C                       | C                   | C            | C                        | C                 | C                    | C               | C       | C                     | C                     | C                        | C                       | C      |
|  | C           | C           | C        | C                    | C                      | C                       | C                   | C            | C                        | C                 | C                    | C               | C       | C                     | C                     | C                        | C                       | C      |
|  | C           | LC          | NC       | C                    | C                      | C                       | NC                  | -            | LC                       | LC                | NC                   | LC              | NC      | NC                    | NC                    | -                        | -                       | NC     |
|  | C           | C           | C        | C                    | C                      | C                       |                     |              | C                        | C                 | -                    | -               | NC      | -                     | NC                    | NC                       | -                       | C      |
|  | C           | C           | NC       | C                    | C                      | C                       |                     |              | C                        | C                 | -                    | -               | LC      | -                     | LC                    | LC                       | -                       | LC     |
|  | LC          | LC          | C        | C                    | C                      | LC                      |                     |              | C                        | C                 | -                    | -               | NC      | -                     | LC                    | NC                       | -                       | NC     |

# Conversion Tables

## Volume rate of flow

| CONVERT      |      | Multiplying Factors |            |            |          |           |          |              |             |              |             |
|--------------|------|---------------------|------------|------------|----------|-----------|----------|--------------|-------------|--------------|-------------|
| FROM<br>↓    | TO → | litre / sec         | litre / hr | m³ / sec   | m³ / hr  | ft³ / min | ft³ / hr | UK gal / min | UK gal / hr | US gal / min | US gal / hr |
| litre / sec  |      | 1.                  | 3600.      | 0.001      | 3.6      | 2.118882  | 127.133  | 13.19814     | 791.8884    | 15.85032     | 951.019     |
| litre / hr   |      | 0.000278            | 1.         | 0.00000028 | 0.001    | 0.000588  | 0.035315 | 0.003666     | 0.219969    | 0.004403     | 0.264172    |
| m³ / sec     |      | 1000.               | 3 600 000. | 1.         | 3600.    | 2118.88   | 127 133. | 13 198.1     | 791 889.    | 15 850.3     | 951 019.    |
| m³ / hr      |      | 0.27778             | 1000.      | 0.000278   | 1.       | 0.588578  | 35.3415  | 3.66615      | 219.969     | 4.402863     | 264.1718    |
| ft³ / min    |      | 0.471947            | 1699.017   | 0.000472   | 1.699017 | 1.        | 60.      | 6.228833     | 373.730     | 7.480517     | 448.8310    |
| ft³ / hr     |      | 0.007866            | 28.3168    | -          | 0.028317 | 0.01667   | 1.       | 0.103814     | 6.228833    | 0.124675     | 7.480517    |
| UK gal / min |      | 0.0757              | 272.766    | 0.0000758  | 0.272766 | 0.160544  | 9.63262  | 1.           | 60.         | 1.20095      | 72.05700    |
| UK gal / hr  |      | 0.001263            | 4.54609    | -          | 0.004546 | 0.002676  | 0.160544 | 0.016667     | 1.          | 0.020016     | 1.20095     |
| US gal / min |      | 0.063090            | 226.8      | 0.0000631  | 0.227125 | 7.4805    | 448.8    | 0.832674     | 49.96045    | 1.           | 60.         |
| US gal / hr  |      | 0.001052            | 3.785411   | -          | 0.003785 | 0.133681  | 0.133681 | 0.013878     | 0.832674    | 0.016667     | 1.          |

## Pressure (liquid column, atmospheric, etc.)

| CONVERT   |      | Multiplying Factors |          |           |           |           |          |         |           |            |           |
|-----------|------|---------------------|----------|-----------|-----------|-----------|----------|---------|-----------|------------|-----------|
| FROM<br>↓ | TO → | lb / in²            | lnH₂O    | ftH₂O     | inHg      | atmos.    | mmHg     | mbar    | kgf / cm² | N / m²     | N / mm²   |
| lb / in²  |      | 1.                  | 27.6799  | 2.30667   | 2.03602   | 0.068046  | 51.7149  | 68.9476 | 0.070307  | 6894.76    | 0.0068948 |
| lnH₂O     |      | 0.036127            | 1.       | 0.083333  | 0.073556  | 0.0024583 | 1.86832  | 2.49089 | 0.002540  | 249.089    | 0.0002491 |
| ftH₂O     |      | 0.433528            | 12.      | 1.        | 0.882671  | 0.029500  | 22.4198  | 29.8907 | 0.03048   | 2989.07    | 0.0029891 |
| inHg      |      | 0.491154            | 13.5951  | 1.13292   | 1.        | 0.033421  | 25.4     | 33.8639 | 0.034532  | 3386.39    | 0.003386  |
| atmos.    |      | 14.6959             | 406.781  | 33.8984   | 29.9213   | 1.        | 760.000  | 1013.25 | 1.03323   | 101 235.   | 0.101325  |
| mmHg      |      | 0.019337            | 0.535240 | 0.044603  | 0.03937   | 0.0013158 | 1.       | 1.33322 | 0.0013591 | 133.322    | 0.0001333 |
| mbar      |      | 0.014504            | 0.401463 | 0.033455  | 0.029530  | 0.0009869 | 0.750062 | 1.      | 0.0010197 | 100.       | 0.0001    |
| kgf / cm² |      | 14.2233             | 393.700  | 32.8084   | 28.959    | 0.967841  | 735.559  | 980.655 | 1.        | 98 066.5   | 0.98066   |
| N / m²    |      | 0.000145            | 0.004015 | 0.0003345 | 0.0002953 | 0.000099  | 0.007501 | 0.01    | 0.0000102 | 1.         | 0.000001  |
| N / mm²   |      | 145.038             | 4014.63  | 334.553   | 295.300   | 9.86923   | 7500.62  | 10 000. | 10.1972   | 1 000 000. | 1.        |

## Mass

| CONVERT          |      | Multiplying Factors |              |          |          |                |          |                   |
|------------------|------|---------------------|--------------|----------|----------|----------------|----------|-------------------|
| FROM<br>↓        | TO → | grain               | metric carat | gram     | dram     | drachm (apoth) | oz       | oz tr or oz apoth |
| grain            |      | 1.                  | 0.323995     | 0.064799 | 0.36571  | 0.016667       | 0.002286 | 0.002083          |
| metric carat     |      | 3.08647             | 1.           | 0.2      | 0.112877 | 0.51441        | 0.007055 | 0.006430          |
| gram             |      | 15.4324             | 5.           | 1.       | 0.564383 | 0.257206       | 0.035274 | 0.032151          |
| dram             |      | 27.34375            | 8.85923      | 1.77185  | 1.       | 0.455729       | 0.0625   | 0.056966          |
| drachm (apoth)   |      | 60.                 | 19.4397      | 3.88793  | 2.19429  | 1.             | 0.137143 | 0.125             |
| oz               |      | 437.5               | 141.748      | 28.3495  | 16.      | 7.29167        | 1.       | 0.911458          |
| oz tr or oz path |      | 480.                | 155.517      | 31.1035  | 17.5543  | 8.             | 1.09714  | 1.                |

# Conversion Tables

## Mass

| CONVERT     |      | Multiplying Factors |          |          |          |          |             |          |          |
|-------------|------|---------------------|----------|----------|----------|----------|-------------|----------|----------|
| FROM<br>↓   | TO → | lb                  | kg       | slug     | US cwt   | UK cwt   | oz / US ton | tonne    | UK ton   |
| lb          |      | 1.                  | 0.453592 | 0.031081 | 0.01     | 0.008929 | 0.0005      | 0.000454 | 0.000446 |
| kg          |      | 2.20462             | 1.       | 0.068522 | 0.022046 | 0.019684 | 0.001102    | 0.001    | 0.000984 |
| slug        |      | 32.1740             | 14.5939  | 1.       | 0.32174  | 0.287268 | 0.016087    | 0.014594 | 0.014363 |
| US cwt      |      | 100.                | 45.3592  | 3.10810  | 1.       | 0.892857 | 0.05        | 0.045359 | 0.044643 |
| UK cwt      |      | 112.                | 50.8023  | 3.481072 | 1.12     | 1.       | 0.056       | 0.050802 | 0.05     |
| oz / US ton |      | 2000.               | 907.185  | 62.1620  | 20.      | 17.8571  | 1.          | 0.907185 | 0.892857 |
| tonne       |      | 2204.62             | 1000.    | 68.5218  | 22.0462  | 19.6841  | 1.10231     | 1.       | 0.984207 |
| UK ton      |      | 2240.               | 1016.05  | 69.62143 | 22.4     | 20.      | 1.12        | 1.01605  | 1.       |

## Volume and capacity

| CONVERT   |      | Multiplying Factors |          |           |           |           |          |          |           |          |           |
|-----------|------|---------------------|----------|-----------|-----------|-----------|----------|----------|-----------|----------|-----------|
| FROM<br>↓ | TO → | cm³                 | in³      | ft³       | yd³       | m³        | litre    | UK pint  | UK gallon | US pint  | US gallon |
| cm³       |      | 1.                  | 0.061024 | 0.0000353 | -         | 0.000001  | 0.001    | 0.001760 | 0.000220  | 0.002113 | 0.000264  |
| in³       |      | 16.3871             | 1.       | 0.0005787 | 0.0000214 | 0.0000164 | 0.016387 | 0.028837 | 0.003605  | 0.034632 | 0.004329  |
| ft³       |      | 28 316.8            | 1728.    | 1.        | 0.037037  | 0.028317  | 28.3168  | 49.8307  | 6.22883   | 59.8442  | 7.48052   |
| yd³       |      | 764 555.            | 46 656   | 27.       | 1.        | 0.764555  | 764.555  | 1345.429 | 168.1784  | 1615.793 | 201.9740  |
| m³        |      | 1 000 000.          | 61 023.7 | 35.3145   | 1.30795   | 1.        | 1000.    | 1759.75  | 219.969   | 2113.38  | 264.172   |
| litre     |      | 1000.               | 61.0237  | 0.035315  | 0.001308  | 0.001     | 1.       | 1.75975  | 0.219969  | 2.11338  | 0.264172  |
| UK pint   |      | 568.261             | 34.6774  | 0.020068  | 0.000743  | 0.0005683 | 0.568261 | 1.       | 0.125     | 1.20095  | 0.150119  |
| UK gallon |      | 4 546.09            | 277.420  | 0.160544  | 0.005946  | 0.0045461 | 4.54609  | 8.       | 1.        | 9.60760  | 1.20095   |
| US pint   |      | 473.176             | 28.875   | 0.016710  | 0.000619  | 0.0004732 | 0.473176 | 0.832674 | 0.104084  | 1.       | 0.125     |
| US gallon |      | 3 785.41            | 231.     | 0.133681  | 0.004951  | 0.0037854 | 3.785411 | 6.661392 | 0.832674  | 8.       | 1.        |

## Volume and capacity

| CONVERT      |      | Multiplying Factors |          |          |              |              |             |             |           |           |
|--------------|------|---------------------|----------|----------|--------------|--------------|-------------|-------------|-----------|-----------|
| FROM<br>↓    | TO → | UK minim            | US minim | cm³      | UK fl drachm | US fl drachm | UK fl ounce | US fl ounce | litre     | in³       |
| UK minim     |      | 1.                  | 0.960760 | 0.059194 | 0.016667     | 0.016013     | 0.002083    | 0.002002    | 0.0000592 | 0.0036122 |
| US minim     |      | 1.04084             | 1.       | 0.061611 | 0.17348      | 0.01667      | 0.002168    | 0.002084    | 0.0000616 | 0.0037597 |
| cm³          |      | 16.8936             | 16.2307  | 1.       | 0.281561     | 0.270519     | 0.035195    | 0.033814    | 0.001     | 0.061024  |
| UK fl drachm |      | 60.                 | 57.64560 | 3.55163  | 1.           | 0.960760     | 0.125       | 0.120095    | 0.003552  | 0.216734  |
| US fl drachm |      | 62.45040            | 60.      | 3.696678 | 1.04084      | 1.           | 0.130105    | 0.125       | 0.003697  | 0.225585  |
| UK fl ounce  |      | 480.                | 461.1648 | 28.4131  | 8.           | 7.68608      | 1.          | 0.960760    | 0.028413  | 1.73387   |
| US fl ounce  |      | 499.604             | 480.     | 29.5735  | 8.32674      | 8.           | 1.04084     | 1.          | 0.029573  | 1.80469   |
| litre        |      | 16 893.6            | 16 230.7 | 1000.    | 281.561      | 270.5125     | 35.1951     | 33.8140     | 1.        | 61.0237   |
| in³          |      | 276.837             | 265.9739 | 16.3871  | 4.61395      | 4.432899     | 0.576744    | 0.554113    | 0.016387  | 1.        |

# Glossary of Terms Used in Filtration

## A

**Absolute Pressure**  
Associated with gas systems. The absolute pressure is the total pressure exerted on a system equal to atmospheric pressure plus gauge pressure, for example 2 barg = 3 bar absolute.

**Absolute Rating**  
A definitive value given to a filter that represents the smallest particle size capable of being captured by the filter. Typically it refers to 100% retention at a particular micron rating. The assigning of micron ratings is however dependant on the test methodology used. e.g.: a sterile grade absolute rated liquid filter is assigned a 0.2 micron rating if it retains all microorganisms of a predetermined size it does not mean that the filter has 0.2 micron pores. When selecting a filter for a particular application always refer to the methods and assumptions made for assigning the micron rating.

**Autoclave**  
A closed pressure vessel into which steam is introduced (typically at a temperature of 121 - 134 °C (250 - 273 °F)) to sterilise the contents.

## B

**Backwash**  
A reverse flow of liquid through a filter in order to flush out trapped solids.

**Beta Rating**  
A measure of a filters efficiency based on the number of particles present in the influent (upstream) to those in the effluent (downstream). Efficiency is expressed as a BETA ratio and is calculated as follows:

Beta Ratio = 
$$\frac{\text{Number of particles in the influent}}{\text{Number of particles in the effluent}}$$

Generally a Beta Ratio at 5000 is accepted by the industry as being an ‘absolute’ rating for media prefiltrers.

## C

**Cartridge or Filter Cartridge**  
A filtration or separation device usually supplied in a cylindrical format which locates easily and quickly into a filter housing.

**Chemical Compatibility**  
When selecting filter materials attention needs to be given to their compatibility to the fluid which is to be filtered. A filter (depending on application) needs to be assessed for reduction in performance in terms of material degradation, integrity, etc. as well as quantifying any extractables levels. It should be noted that the compatibility of a filter is dependent on the process conditions. General material compatibility databases assume limited temperature and exposure time. They also refer to just one chemical. In an actual process there could be a combination of chemicals, high differential pressure and high temperature which all could influence filter performance. General guidance on filter performance can be given from experience and in-house data but normally it is recommended that filter compatibility is tested in the process conditions.

**Clarification**  
This is the selective removal of particulate from a process fluid usually achieved through depth filtration. The degree of clarification is dependant on customer specification.

**Coalescing**  
When small droplets of aerosolised liquid merge together to form larger droplets. This normally occurs in a depth filter as the process gas carrying the entrained liquid droplets passes through the filtration media. A coalescing filter such as the Parker domnick hunter OIL-X also flows from the inside of the cartridge to the outside so any coalesced liquid drains to the base of the filter and subsequently into the bottom of the filter housing.

**Colloid**  
Colloids are molecules that have not coagulated together to form a precipitate but remain in liquid suspension. These molecules are very small in size and have a molecular charge that affects their affinity for other molecules and materials. The choice of filter type and design is of paramount importance for a colloidal system if premature blockage is to be avoided.

**Compaction**  
This can occur to a filtration medium when it is subjected to high differential pressures. The high forces on the filtration media (especially depth type) can lead to compression of the structure and subsequent changes in filtration characteristics.

**Concentrate**  
The retained non filtered stream from a crossflow filter system.

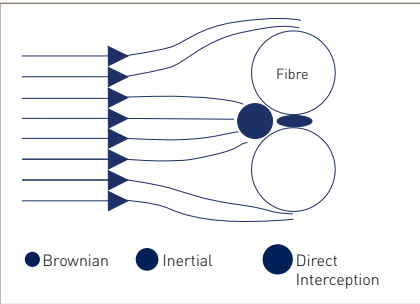
**Cross Flow Filtration**  
A filter characterised by the feed stream travelling parallel to instead of directly through the filtration medium. This has the advantage of minimising the blockage of the membrane as the system is to some extent ‘self cleaning’.

## D

**Dead Leg**  
An area of pipework where there is potentially no flow and therefore stagnant conditions exists. It is extremely important to eliminate these if contamination issues are to be minimised.

**Depth Filter**  
A depth filter is characterised by the thickness of the filtration media as well as its structure. A depth filter is normally fibrous in nature and contaminant is retained through the depth of the filtration media rather than just the surface.

**Diffusional Interception**



This is the dominant removal mechanism for the smallest particles captured by a filter in the gas phase. Particles as small as 0.01 µm exhibit great diffusional movement (Brownian Motion) which has the effect of increasing its nominal mean diameter to the filter. The efficiency of this capture mechanism decreases as the particle size increases.

**Diffusional Flow**  
A non-destructive integrity test method for membrane based filters. It involves wetting out every pore in the membrane structure with water or the process fluid or a low surface tension liquid in case of hydrophobic membrane. Compressed air is applied to the upstream side of the filter and gas diffuses through the wetted pores. This flow rate is either measured directly by mass flow meters or indirectly via measuring the drop in pressure on the upstream side of the filter.

**Differential Pressure**  
Differential Pressure [dP] is the difference in the pressure measured upstream (influent) and downstream (effluent) of a filter. Particularly in liquid applications differential pressure will increase to a point where either filter damage or insufficient flow will result. The higher the differential pressure the higher the energy cost so it is important to balance the pressure drop requirements with the installation size and required lifetime to blockage. Units of measurement are bar and psi as opposed to barg and psig.

## E

**Effective Filtration Area [EFA]**  
This is the area of filtration material available for filtration.

**Effluent**  
The fluid which has passed through a filter.

**Extractables**  
When a filter is in contact with the process fluid, chemical components may leach from the materials of construction and deposited in the filtrate. The levels of non-volatile extractables for a limited number of fluids are quoted in the filter validation guide. The level of extractables is dependent on the process conditions. Filtration of solvents, high temperature fluids and steam sterilisation are three areas where extractables can increase.

## F

**Filter [noun] / Filter Cartridge / Cartridge**  
An apparatus which performs filtration.

**Filter [verb]**  
To pass a fluid or gas through a porous medium in order to remove solid particles.

# Glossary of Terms Used in Filtration

**Filter Efficiency**  
Filter efficiency is a measure of the percentage of particles that are removed from the fluid by the filter. Typically these are given in terms of the % removal for a certain size of particle. A filter efficiency may also be given across a range of particle sizes . For a number of gas applications the efficiency of a filter may be quoted in relation to the filters ability to remove particles at the most penetrating particle size (MPPS) of 0.2-0.3 micron. Always ensure filter efficiency is matched to the requirements of the process.

**Filterability Indices (FI) and Vmax**  
This is an indication of a filters’ capacity to process certain fluids. It generally gives a measure of the rate of blockage of a filter as well as the theoretical maximum throughput. The time required to flow two consecutive 200 ml fluid samples is recorded and the filterability indices are calculated from the results. The two formulae used are as follows:

$$V_{max} = \frac{400 + 400T_1}{T_2 - 2T_1}$$
$$FI = (T_2 - 2T_1)$$

T<sub>1</sub> = Time to filter first 200 ml  
T<sub>2</sub> = Time to filter second 200 ml

It should be noted that these methods give a general indication of performance and are often more useful in comparative performance measurement between different filter types.

**Filtrate**  
Another name for effluent.

**Flux**  
The rate of fluid flow (gas or liquid) when expressed in terms of flow per unit area of the filter that removes the contaminants from the fluid stream. It can apply to both depth and membrane media.

## G

**Gauge Pressure**  
The pressure of a system measured by a gauge, which excludes atmospheric pressure, for example 1 bar atmosphere (or 1 bar absolute) = 0 barg.

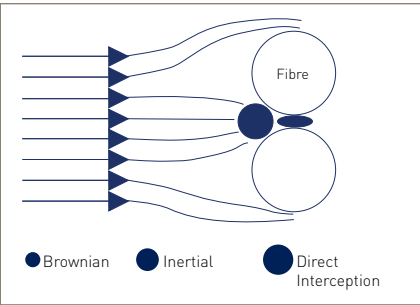
## H

**Housing**  
An enclosure for a filter element, typically rated for pressure, that directs the fluid through the filter.

**Hydrophilic**  
Hydrophilicity is the ability of a filtration media to ‘wet out’, that is, for the porous structure to be completed filled with the liquid being filtered. This is an important characteristic as incomplete wetting of the structure can lead to a reduction in flow capacity and problems with integrity testing. All liquid filters are ‘hydrophilic’ apart from those that may have been selected for use with aggressive solvents. These filters are typically based on a fluoropolymer and their structure needs to be wetted with a low surface tension liquid such as isopropyl alcohol. Once the structure has been wet, the filter will process aqueous solutions without a problem.

## I

**Inertial Impaction**  
This is a removal mechanism for particles captured by a filter in the gas phase. The particles follow the streamlines of gas between the filter fibres and membrane pores. Due to their mass the inertia of the particle will cause it to move out of the streamline and attach itself to a fibre or pore wall. The effect of this capture mechanism increases with particle size / mass.



**Influent**  
The fluid entering the filter system.

## M

**Medium [Media]**  
This is the component of the filter that removes the contaminants from the fluid stream. Also commonly referring to depth - type materials, in its more generic sense a filter medium / media can refer to either depth or membrane filter materials.

**Microfiltration**  
Microfiltration is the process of removing particles from a liquid or gas by passing it through a porous medium. It generally involves removing particles between the sizes of 10 and 0.04 micron in liquids, and down to 0.01 micron in gases.

**Micron [micrometer]**  
Designated by the Greek letter µ a micron is 10<sup>-3</sup>mm (millimeters) or 10<sup>4</sup> (Angstroms) or 0.00003937 inch. For a perspective on this size a human hair is approximately 70 microns thick and the limit of resolution of the naked eye is around 40 microns.

**Membrane**  
A membrane is a thin, porous film typically between 30 and 150 micron in thickness. It has of tens of millions of pores / cm<sup>2</sup> through which the process fluid runs. The nature of the pore structure is determined by the manufacturing method. Solvent cast membranes such as Polyethersulphone (PES) and Mixed Esters of Cellulose (MEC) have a defined pore structure which can be asymmetric whilst membrane such as Polytetrafluoroethylene (PTFE) which is manufactured by ‘stretching’ have a fibrous appearance and a less defined pore structure.

## N

**Nanofiltration**  
Filtration that removes both particles and small dissolved molecules and ions. Finer than Ultrafiltration, not as fine as Reverse Osmosis.

**Nanometer**  
A nanometer is 10<sup>-9</sup> meters

**Nominal Filter Rating**  
This rating is often quoted within the filtration industry but great care should be taken in ensuring the efficiency and test methodologies are completely understood. A 5 micron nominal filter could be 99% retentive at 5 micron, another could be 80%. It can be very misleading to compare the performance of filters on nominal ratings. When selecting a filter the duty required should be compared to the individual performance characteristics of filter. Parker domnick hunter has the experience to help select the most appropriate filter for the application.

# Glossary of Terms Used in Filtration

## O

**Oleophobic**  
Oleophobic membranes and depth media have the capability to repel fluids such as oil and lubricants. This phenomena is used in some of the new generation oil coalescing filters.

**Oxidation**  
This refers to the degradation of materials in the presence of oxygen and high temperature. It is normally associated with high temperature gas systems where the combination of steam sterilisation can lead to the onset of oxidation of polypropylene filtration components in as little as 3 months. For applications where continuous (1 year and above) exposure to high temperature is required the use of a special product with oxidation resistant filtration support materials such as the HIGH FLOW TETPOR H.T. is recommended.

Oxidation can also occur on filters used in ozonated water systems. In these instances careful selection of filter components is required.

## P

**Pleating**  
Filtration media can be pleated or corrugated to maximise the filtration area. By pleating filtration media it is possible to fit a large EFA in a relatively small cartridge volume.

**Voids Volume (Porosity)**  
This is a measurement of the free space in a filtration media. The more free space the less the resistance to flow. Typical values for a membrane are in the region of 50 – 80% and for depth type media between 60 - 95%.

**Pressure Decay**  
A non-destructive integrity test method for membrane based filters. It involves wetting out every pore in the membrane structure with water or the process fluid or a low surface tension liquid in case of hydrophobic membrane. Compressed air is applied to the upstream side of the filter and gas diffuses through the wetted pores. This causes a pressure drop in the upstream side of the filter known as the pressure decay. The maximum allowable pressure decay for a filter is dependant on the upstream volume and therefore must be known.

Pressure Decay (mbar / min) =

$$\frac{\text{Diffusional Flow (ml / min)}}{\text{Upstream Vol (l)}}$$

**Permeate**  
Synonymous with filtrate.

## R

**Regeneration**  
When a filter becomes blocked with protein based material it may be possible to regenerate, or clean the filter, so improving overall lifetime.

**Reverse Jetting**  
The application of high pressure compressed gas to the inside of a filter to release powder collected on its surface.

**Reverse Osmosis**  
Forcing a liquid through a non-porous membrane, removing particles, along with dissolved molecules and ions. Reverse Osmosis is the finest form of membrane separation and is used to desalinate water for drinking, and in the preparation of ultrapure water for various industries.

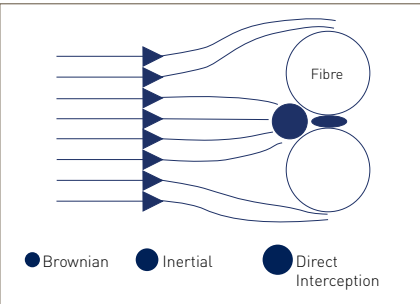
## S

**Sedimentation**  
The process by which suspended solid particles in a liquid phase gravitate downwards. Eventually they will settle on the bottom of the holding tank, pipework etc. The rate of sedimentation is governed by particle mass and fluid velocity.

**Separation**  
Separation is the process of dividing a fluid stream (either liquid or gas) into separate components. This can include separation of two phases (liquid from gas), separation of soluble impurities (known as purification) or solids from a fluid (filtration). The products of a separation can themselves be separated further in many cases.

**Silt Density Index (SDI)**  
This is another measure of the rate of blockage and is typically used when the system is relatively clean and the difference between T<sub>200</sub> and T<sub>500</sub> (see Filterability Indices) is so small that large inaccuracies can occur. The SDI uses the time taken for two 500 ml samples of fluid to pass through a 47 mm diameter 0.45 µm disc. There is typically a 15 minute gap between the two samples being taken.

**Size Exclusion**  
This is a removal mechanism for particles captured by a filter in either the liquid or gas phase. It applies to particles that are physically too large to pass through the filter structure. The mechanism is not affected by flow rate unless pressure drops cause deformation of the particle.



**Solute**  
A solid which is dissolved in a solvent. For instance, the salt in salt water is a solute.

**Solvent**  
A liquid substance capable of dissolving other substances. The solvent does not change its state in forming a solution.

**Surfactant**  
Acronym for a surface active agent. In filtration it is also sometimes called a wetting agent. If a filter is being used to filter aqueous solutions and incomplete wetting of the membrane pore structure is encountered a ‘wetting agent’ may be added to the membrane surface by flowing a quantity of surfactant through the filter. The use of a wetting agent is, however, not desirable, especially in a pharmaceutical environment, as there is also the possibility of the surfactant leaching from the filter into the filtrate during processing or steam sterilisation, etc.

## T

**Thermal Stability**  
This is most important during sterilisation of the filter. The majority of cartridge and disposable type filters are manufactured from polymers such as polypropylene and nylon. During sterilisation the components of the filter expand and contract putting great strain on the device. The filter performance with respect to steam sterilisation should be matched closely to the requirements of the process. It should be noted that some filter configurations cannot be in-situ steam sterilised but can only be autoclaved.

**Turbidity**  
This is a measurement of the amount of suspended particles in a fluid and is effectively a clarity index. It is measured in NTU ( Nephelometric Turbidity Units).

# Glossary of Terms Used in Filtration

## U

**Unloading**  
The release of contaminants which had initially been captured by a filter. This is most likely to occur in filtration systems with are subjected to high pressure pulses such as high capacity filling lines.

**Ultrafiltration**  
Filtration of a liquid that separates suspended or dissolved substances based on their molecular weight or size. Ultrafiltration generally refers to separating everything larger than a large molecule. Compare to microfiltration, nanofiltration, reverse osmosis.

## V

**Viscosity**  
Viscosity is a measurement of the resistance to flow of a fluid. The more viscous the fluid, the greater the time required to filter. Viscosity will in general reduce with an increase in temperature. This is why very viscous solutions such as glucose are heated prior to filtration.

**Vmax**  
See Filterability Indices.

## W

**Water Flow**  
Water Flow: Measure of the amount of water that flows through a filter. Related to the degree of contamination, differential pressure, total porosity, and filter area (ASTM:F317-72). Expressed in the membrane industry in units of millilitres / minute / square centimetre.

**Water Intrusion**  
A non-destructive integrity test method specifically designed for hydrophobic filters. It involves filling the upstream volume of a filter housing with water and applying a pressure, typically in the order 2.5 barg. As the membrane is hydrophobic the bulk water will not pass through. However, due to the difference in pressure between the upstream and downstream side of the filter there is a net loss of water from the upstream side due to evaporation and the slight penetration of water into the pore structure. This loss of water results in a pressure drop which is displayed as either a water intrusion value or a water flow value. The water intrusion is the measure of the increase in compressible gas volume expressed at atmospheric pressure and the water flow equates to the volume of water lost from the system.

Water flow = Water Intrusion / Absolute test pressure.

# Industrial Products

Parker domnick hunter, Industrial Division, is a well established global business capable of meeting the compressed air treatment product needs of all industries. Our commitment to customer satisfaction goes beyond initial supply and installation. Comprehensive after sale support includes servicing, spare parts, quality testing and technical advice.

Bespoke design services are also available for customised projects to ensure customer specifications are met. Services are delivered locally by our global network of qualified service engineers.



**WS WATER SEPARATORS**  
**Bulk liquid removal**  
Providing efficient bulk liquid removal at all flow conditions, OIL-X EVOLUTION WS Water Separators also minimise energy consumption and help reduce your carbon footprint.

- Tested in accordance with ISO8573.9
- Performance independently verified
- Low pressure loss / low operational cost



**OIL-X EVOLUTION**  
**Compressed air filters**  
Providing air quality that meets or exceeds the requirements of ISO8573-1, the international standard for compressed air quality, OIL-X EVOLUTION is also the most energy efficient compressed air filter in the world, helping to reduce your carbon footprint.

- The most energy efficient filters available
- High quality ISO8573.1:2001 compressed air
- Running costs that start low and stay low



**LAB GAS GENERATORS**  
**Hydrogen, nitrogen & zero air**  
The range of analytical gas generators from Parker domnick hunter includes UHP hydrogen, nitrogen and zero air and enables users to produce a cost-effective, continuous supply of premium quality gas from a compact, on-site source.

- Increases safety with the elimination of high pressure gas storage or cylinder handling
- Cost-effective due to low life-cycle ownership
- UHP hydrogen generators facilitate optimised analysis
- Convenient, on-demand gas supply



**MAXIGAS**  
**Nitrogen gas generators**  
Produces on-site nitrogen gas from compressed air and is the cost-effective alternative to traditional nitrogen sources for multiple applications. Excellent energy efficiency and a low life-cycle ownership cost facilitate considerable cost savings of up to 90%.

- Low life-cycle ownership cost and elimination of costs associated with a cylinder supply
- On-demand functionality limits waste
- Energy efficient; operates from a small compressor



**MIXED GAS DISPENSERS**  
**CO<sub>2</sub> & nitrogen**  
Designed to provide bar owners with the ideal supply of mixed gas blends of CO<sub>2</sub> and nitrogen for beer dispensing. The system uses a nitrogen generator which, when connected to CO<sub>2</sub> cylinders, can produce mixed blends of CO<sub>2</sub> and nitrogen in a number of predetermined ratios.

- Improved quality and economy
- Nitrogen purity of 99.8%
- A more efficient operation
- Improved shelf life



**BREATHING AIR PURIFIERS**  
**Breathable air**  
Providing breathable quality compressed air in compliance with international standards, breathing air purifiers supply effective protection from harmful substances, maintaining employee health.

- High efficiency coalescing filter, for removal of oil / water
- Adsorption bed of activated carbon, for removal of oil vapour and odours
- Catalytic element, for removal of carbon monoxide



**NBC FILTRATION**  
**Biological & chemical protection**  
The need to protect key personnel from attacks by chemical and biological weapons has never been greater. Given the escalation of this type of threat from terrorist groups and unstable nations, the development of the NBC filtration system provides effective protection.

- Fully regenerative
- Increased capacity
- Compact modular design



**HYPERCHILL**  
**Precision chilled water**  
Hyperchill maximises productivity and minimises costs, as well as easy conformity to regulations on water quality. Hyperchill is the perfect solution to industrial chilled water needs.

- Increases productivity, reduces costs
- Adaptable to individual customer needs



**PCO<sub>2</sub>**  
**Carbon dioxide polishing filter**  
Providing quality incident protection for beverage grade carbon dioxide, PCO<sub>2</sub> offers protection against carbon dioxide contamination and impurities of up to 10 times the allowable levels.

- Ensures compliance with quality guidelines published by the International Society for Beverage Technologies (ISBT)
- Protects drinks manufacturing processes from vapour impurities

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- Fluid metering delivery & atomization devices
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- Wheels & brakes



**CLIMATE CONTROL**  
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- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

**Key Products**

- CO<sub>2</sub> controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



**ELECTROMECHANICAL**  
**Key Markets**

- Aerospace
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

**Key Products**

- AC / DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydraulic actuation systems
- Electromechanical actuation systems
- Human machines interface
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions



**FILTRATION**  
**Key Markets**

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

**Key Products**

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine, air, fuel & oil filtration & systems
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



**FLUID & GAS HANDLING**  
**Key Markets**

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Power generation & energy
- Truck hydraulics
- Welding

**Key Products**

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



**HYDRAULICS**  
**Key Markets**

- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

**Key Products**

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects



**PNEUMATICS**  
**Key Markets**

- Aerospace
- Conveyor & material handling
- Factory automation
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

**Key Products**

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves & controls
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors



**PROCESS CONTROL**  
**Key Markets**

- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

**Key Products**

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



**SEALING & SHIELDING**  
**Key Markets**

- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

**Key Products**

- Analytical sample conditioning products & systems
- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management



ENGINEERING YOUR SUCCESS.

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