# PES II

## Polyethersulphone Membrane Cartridge Filters.

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

PES II cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. PES II cartridges offer high flux rates and low differential pressures, a feature common to polyethersulphone membranes.

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

## Typical Applications

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

## Ordering Information

| 1: Membrane | |
|---|---|
| CF-BT | PES II |

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

| 3: Version | |
|---|---|
| R | Rinsed |
| S | Standard |

| 4: Length | |
|---|---|
| 1 | 10" |
| 2 | 20" |
| 3 | 30" |
| 4 | 40" |
| 5 | 5" |

| 5: End fitting | |
|---|---|
| A | Code 3 |
| B | Code 7 |
| C | Code 8 |
| F | N SOE |
| G | G DOE (short) |
| H | G SOE |
| J | 216 (218), fin |
| K | Code 2 |
| L | 223, fin (no lugs) |
| M | DOE |
| S | Code 28, fin (3 lugs) |
| T | 223, flat (no lugs) |
| U | 224, fin |
| Y | BS832, flat |

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

| 7 Additional | |
|---|---|
| N | Non-steamable(no insert) |
| P | Pharma Grade |

Product Code: 1 2 3 4 5 6 7

# Features and benefits

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

# Specifications

## Materials of Manufacture

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

## Cartridge Dimensions (Nominal)

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

## Cartridge Treatment

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

## Gaskets and O-Rings

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

## Maximum Differential Pressure

Normal flow direction at:

20°C (68°F): 6.0bar (87psi)

80°C (176°F): 4.0bar (58psi)

100°C (212°F): 3.0bar (44psi)

120°C (248°F): 2.0bar (29psi)

Reverse flow direction at:

20°C (68°F): 2.1bar (30psi)

80°C (176°F): 1.0bar (15psi)

100°C (212°F): 0.5bar (7psi)

## Operating Temperature

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

## Sterilisation

In situ steam 80 x 20 minute cycles at 125°C (257°F)

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

## Extracables

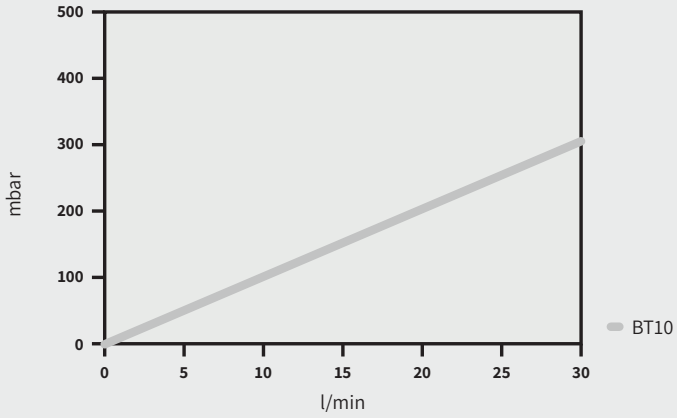
Minimum total extractables. Please refer to the PES II Validation Guide.

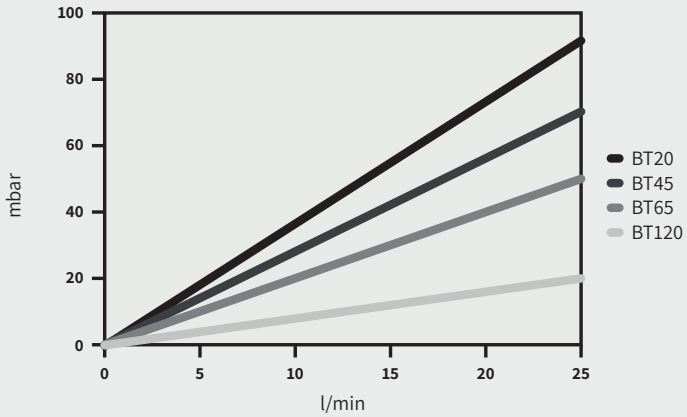
## Intergrity Testing

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

## Clean Water Flow Rates

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

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