



### Description

**Micro PES Pharma Grade** is designed for bioburden control and reliable retention in food and beverage production.

**Micro PES Pharma Grade** provides sterility assurance and broad chemical compatibility. The cartridges are suitable for use in repeated hot water sanitization and in situ steam sterilization cycle for longer service life.

### Specifications

#### Materials:

- Medium: Asymmetric hydrophilic Polyethersulfone
- Core ,cage and endcaps : Polypropylene
- Support layer: Polypropylene
- Adapter: Polypropylene with internal reinforcing ring
- O-ring: Silicone (another material is optional)

#### Removal Ratings:

- 0.015, 0.04, 0.1, 0.2, 0.45, 0.65, 1.2  $\mu\text{m}$

#### Configurations:

- Diameter : 69mm (Outer diameter )
- Length: 5", 10", 20", 30", 40"
- Filtration area: 0.8 m<sup>2</sup> @10" cartridge

#### Technical Information:

- Maximum operating forward pressure drops:

2kg/cm<sup>2</sup> (29 psi) at 80°C(176°F), 5kg/cm<sup>2</sup> (72.5 psi) at 25°C(77°F)

- Maximum operating reverse pressure drop:

1kg/cm<sup>2</sup> (14.5 psi) at 40°C(104°F)

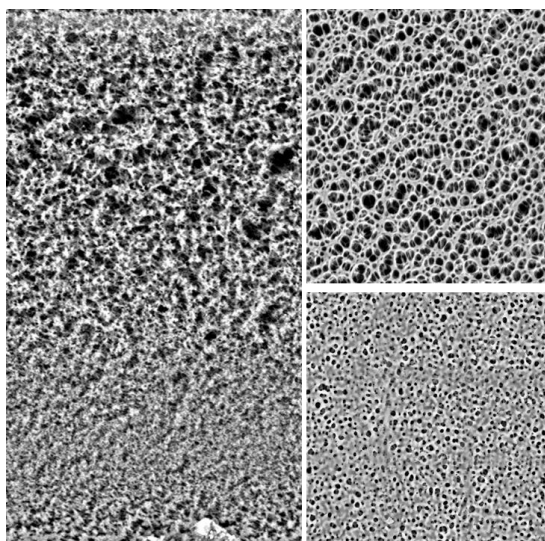
- Sterilization and cumulative cycles:

In-line-steam: 20-minutes cycle @121 °C (250 °F), 150 cycles

Hot water: 30-minutes cycle @90 °C (194 °F), 150 cycles

(The actual cumulative time depends on the process conditions.)

- Bacterial Endotoxin: <0.25 EU/ml, based on USP-NF2021 <85> Bacterial endotoxins test
- Component Material Toxicity: All component materials are nontoxic per USP NF2021 <85> Biological Reactivity Test, In Vivo, Class VI.
- Indirect Food Additive: All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177–182.



- Non-fiber Releasing: The filters meet the criteria for a “non-fiber releasing” filter as defined in 21 CFR 210.3(b)(6).

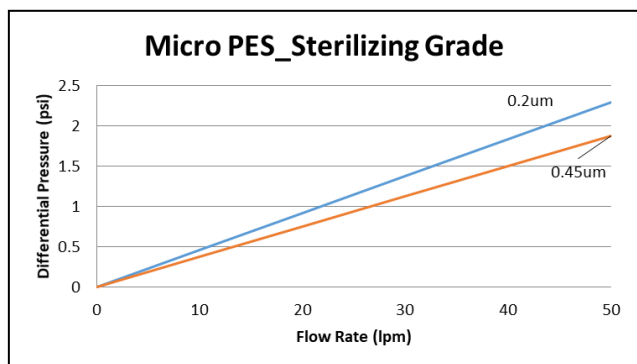
## Benefits & Features

- Halal certified.
- High filtration area provides lower differential pressure (lower energy consumption), and longer lifespan (lower cost).
- Higher flow, up to 2 times faster than most other sterilizing grade filters.
- Manufactured in a cleanroom environment.
- 100% individually integrity tested during production.
- Manufactured according to ISO9001 certified Quality System.

## Applications

- For food and beverage industries
- For filtration in microelectronics, especially high temperature application

## Performance



| Typical Microbial Removal:                            |                        |                           |
|-------------------------------------------------------|------------------------|---------------------------|
| Rating                                                | Test Organism          | Log Reduction Value (LRV) |
| 0.2um                                                 | Brevundimonas diminuta | ≥ 10                      |
| 0.45um                                                | Serratia marcescens    | ≥ 9                       |
| * The challenges were performed based on ASTM F838-05 |                        |                           |

## Ordering Information

| MP                    | D                | B20           | 1      | S            | 2H                                      | A            | A                 |
|-----------------------|------------------|---------------|--------|--------------|-----------------------------------------|--------------|-------------------|
| Product Name          | Grade            | Rating (um)   | Length | O-ring       | Code Number                             | Pre-Flush    | Integrity Test    |
| MP:<br>Asymmetric PES | D: Pharmal grade | A15: 0.015    | A: 5"  | S: Silicone  | DO: Double Open (full length)           | A: Pre-Flush | A: Integrity Test |
|                       |                  | A40: 0.04     | 1: 10" | E: EPDM      | 2C: 222/Cap                             | with DIW     |                   |
|                       |                  | B10: 0.1      | 2: 20" | V: FKM       | 2S: 222/Spear                           | H: Hard disc |                   |
|                       |                  | B20: 0.2      | 3: 30" | T: FEP       | 6F: 226/Cap                             | grade clean  |                   |
|                       |                  | B45: 0.45     | 4: 40" | encapsulated | 6B: 226/Spear                           |              |                   |
|                       |                  | F21: 0.2+0.1  |        | FKM          | 2L: 222 (with tabs, Autoclavable)/Cap   |              |                   |
|                       |                  | F22: 0.2+0.2  |        |              | 2H: 222 (with tabs, Autoclavable)/Spear |              |                   |
|                       |                  | F42: 0.45+0.2 |        |              | 6L: 226 (with tabs, Autoclavable)/Cap   |              |                   |
|                       |                  | F64: 0.6+0.45 |        |              | 6H: 226 (with tabs, Autoclavable)/Spear |              |                   |
|                       |                  | FE4: 1.2+0.45 |        |              | 6S: 226 (with tabs)/Spear               |              |                   |

\*Suggested to choose adapter 2L,2H, 6L, 6H for hot water or in-situ steam sterilization cycles.