

## CES Type (Polyethersulfone Membrane)

Halal certified products



### Major Applications

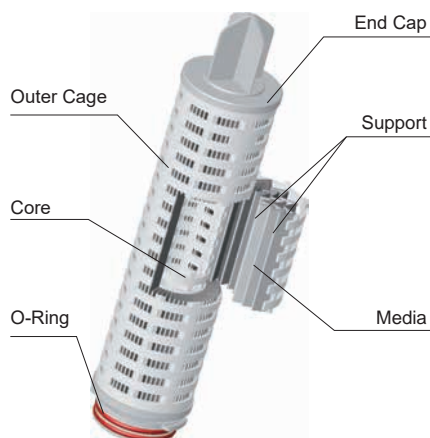
- Food and Beverage
- High purity chemical
- Ultra-pure water and preparation water
- Others



### Features & Benefits

- **Membrane filter for sterilization process in food and beverage**
  - Bacteria challenge tests are conducted using bacteria indicator for respective pore size
- **100% integrity test by diffusion flow test**
- **Hydrophilic polyethersulfone membrane**
  - No hydrophilization treatment required
- **Long service life**
  - Membrane with asymmetric cross section and wide filtration area
- **High durability**
  - Excellent durability for repeated SIP (steam sterilization) and CIP cleaning (sodium hydroxide / NaOH 3%, 80°C)
- **Low extractables**
  - Extractables from the filter media is minimized, meets strict requirements of extractables component standards

### Materials of Construction



### Specification

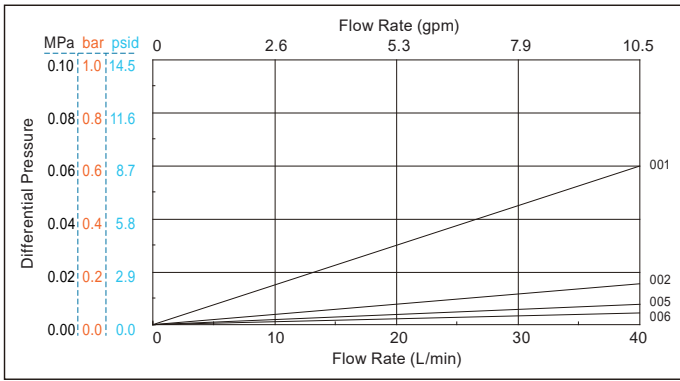
| Product Type                       |                           | CES   |     |      |      |
|------------------------------------|---------------------------|---|-----|------|------|
| Micron Rating (µm)                 |                           | 0.1   | 0.2 | 0.45 | 0.65 |
| E.F.A. (m <sup>2</sup> / 250mm)    |                           | 0.77  |     |      |      |
| Dimensions                         | O.D. (mm)                 | 70.0  |     |      |      |
|                                    | I. D. (mm)                | 26.1 (for F) / 25.6 (for 0, 5) / 29.5 (for 7)           |     |      |      |
| Materials                          | Media                     | Polyethersulfone (PES) Membrane                         |     |      |      |
|                                    | Support                   | Polypropylene   |     |      |      |
|                                    | Core, Outer Cage, End Cap | Polypropylene   |     |      |      |
| Maximum ΔP at 20°C (68°F)          |                           | 0.49MPa (4.9bar, 71psid)                                |     |      |      |
| Maximum Operating Temp.            |                           | 80°C (176°F)  |     |      |      |
| Applicable Sterilization *1        |                           | CIP / In-Line-Steam Sterilization / Autoclave           |     |      |      |
| Hot water sanitization             |                           | 90°C (194°F)×30min×150cycle                             |     |      |      |
| In-line steam sterilization        |                           | 135°C (275°F)×30min×50cycle                             |     |      |      |
| Adaptable Food Sanitation Standard |                           | All raw materials meet the requirement of FDA 21 CFR *2 |     |      |      |

\* If you need further information on specifications (length, end cap type, etc.), please contact us.

\*1 Applicable to only code 7 with silicone O-Rings

\*2 Applicable Gaskets and O-ring materials exclude EPDM.

## Flow Rate



Fluid: Refined Water (20°C) Cartridge Length: 250mm  
 \* The data does not include piping pressure drop.

## Bacteria Challenge Test

| Grade | Biological Indicator                    | LRV * |
|-------|---|-------|
| 001   | <i>Brevundimonas diminuta</i>           | >11   |
| 002   | <i>Brevundimonas diminuta</i>           | >11   |
| 005   | <i>Lactobacillus brevis</i>             | >11   |
|       | <i>Alicyclobacillus acidoterrestris</i> | >11   |
| 006   | <i>Lactobacillus brevis</i>             | 8     |

\*LRV stands for log reduction value.(Refers to JIS K3835)

\*The above data is based on our test condition, and is not guaranteed value.

## Ordering Information

2 5 0 L - C E S - H 0 0 2

[ Nominal Length ]  
 125 = 125mm  
 250 = 250mm  
 500 = 500mm  
 750 = 750mm

[ Product Type ]

[ Micron Rating ]  
 001 = 0.1µm  
 002 = 0.2µm  
 005 = 0.45µm  
 006 = 0.65µm

[ Gasket/O-Ring ]  
 S = Silicone \*  
 E = EPDM  
 N = NBR  
 V = FKM  
 T = FEP Encapsulated FKM (for 0, 5, 7)  
 PTFE (for F)

[ End Cap Code ]  
 F = Flat Gaskets  
 0 = 2-222 O-Ring  
 5 = 2-222 O-Ring + Fin  
 7 = 2-226 O-Ring + Fin

[ Packaging Code ]  
 A = 1pc  
 B = 6pcs  
 C = 10pcs  
 F = 25pcs

## End Cap Code



Manufacturing is based on our Quality Management Systems that meet ISO9001 standards.



Scope: Design, Development, manufacture, and sales of filter cartridges, housings and filtration equipment.



\*The contents of the catalog are subject to change without notice.