

BREW FREE PES

Asymmetric membrane in hydrophilic polyethersulfone

Technical characteristics

- Hydrophilic polyethersulfone membrane with asymmetric pore structure, with no electric charge
- Absolute porosity 0.45µm, the microbiological criteria are defined with specific microorganisms
- Membrane integrity testable multiple times
- Wide compatibility with regenerating and sanitizing products
- Food grade
- Configuration suitable for frequent chemical regeneration

Microbiological retention

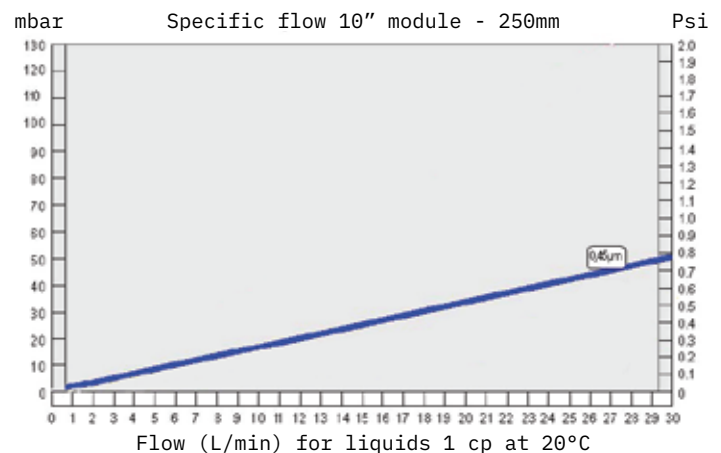
Logarithmic reduction (LRV) is calculated as follows:

$$LRV = \log_{(10)} \frac{\text{Number of microorganisms upstream of filter}}{\text{Number of microorganisms downstream of filter}}$$

The Health Industry Manufacturers Association (HIMA) considers as sterile for a given microorganism, filters that have LRV equal to or greater than 7.

Validation

- The membranes used in **BREW FREE PES** cartridges are tested and validated.
- All **BREW FREE PES** cartridges are subjected to a double integrity test: every single module before assembly; the entire filter element assembled before delivery.
- This exclusive DANMIL validation system ensures the absolute integrity of the filter element.



■ 0,45µm

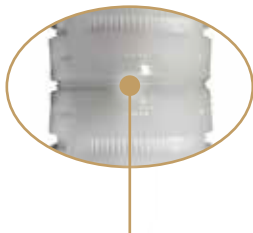
BREW FREE PES



Terminal with no internal cavity.

Weldings made for heavy duty applications, with high temperature and pH excursions.

The tolerance between cage and pleated filter media allows dilatation during thermal excursions.

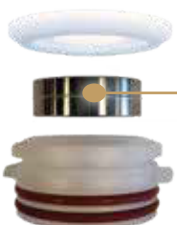


Detail of the welding, excluding "traps" or fluid retention.



Filter elements are flushed with extra pure water and then dehydrated with hot and sterile air flow.

The stainless steel ring is a reinforcement used to maintain the size of the attachment. It can be removed for disposal purposes.



Construction materials

Filter membrane	Asymmetric hydrophilic polyethersulfone
Support and drainage layers	Polyester
Internal and external cage	Polypropylene
Standard 'O' rings	Silicone
Terminal supports	Nylon
Reinforcing ring	Stainless steel aisi 316L
Material coupling	Thermo welding
Filter pleat coupling	Thermo welding

Operational data

Filter surface	0,8 m ² for a 250 mm module (10")
Max operating temperature	80°C
Max Δp operating at 20°C	5 Bar (72,5 psi)
Max Δp at 121°C with steam	0,3 Bar (4,3 psi)

Regeneration and hygienization

- **BREW FREE PES** cartridges can be repeatedly regenerated with hot water (max 80°C), sterilized with steam up to 121°C. They can also be used in hot caustic cycle, even with peroxide.
- DANMIL technical office can provide compatibility technical details but above all validations for complete work cycles.

Integrity test

		0,45 μm
BUBBLE POINT	bar	1.7
	psi	24
PRESSURE TEST	bar	1.4
	psi	20
MAX. DIFFUSION FLOW FOR MODULE (NITROGEN)	ml/min	29

BREW FREE PES FILTER ELEMENTS ARE PACKAGED IN A CLEAN ROOM. THE RIGID CARDBOARD PACKAGE HAS ANTI-SHOCK TERMINAL PARTICULARS.