

AstroPore Fujifilm Micro Filter

PSE Cartridge W

(Pleated membrane cartridge PSE-PPW, PSE-W)



The AstroPore PSE Cartridge W employing polysulfone high-polymer filter membrane meets strict contamination control requirements for ultra pure water. Cartridges for pores measuring 0.1, 0.2, and 0.45 μm are now available.

Outstanding filtration performance is realized in the filtering process for various kinds of cleaning water, plating solution, and developer solution used in electronics industry, and also for water filtration in food industry. These processes are kept clean with AstroPore W cartridges.

A polysulfone high-polymer filter membrane has been adopted in the AstroPore PSE Cartridge W, which offers excellent filtration performance.

Featuring high efficiency in retaining particles and microorganisms, this high-performance, high-quality filter is housed in a cartridge, which is pre-flushed with ultrapure water.

Cartridges for pores measuring 0.1, 0.2, 0.45, and 1.2 μm are all now available. The porous membrane structure and filtration characteristics of the cartridges will greatly contribute to efficient and high-precision filtration of various kinds of manufacturing water including flushing water and mother water of electronics Industry.

Specific Features

1. High-performance micro-porous structure

The micro-porous structure of the polysulfone filter is asymmetric as a whole and contains a dense layer (see photo). This structural characteristic with larger pore sizes both on the inlet and outlet sides has improved the filtration ability.

2. Excellent particle removal and retention performance

The dense layer and sharp pore size distribution inside the filter enable reliable retention and high-precision filtration of fine particles and microorganisms.

3. Low initial pressure loss and a long service life

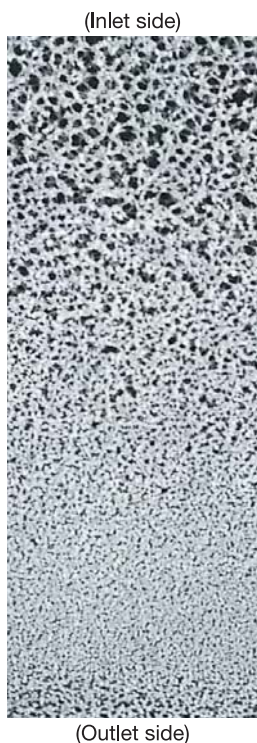
The high porosity rate of 80%, characteristic asymmetric membrane structure, and large filtration area of the filter ensure a low initial pressure loss and a long filtration service life.

4. Quick resistivity recovery by the least degree of flushing

The cartridge is made of carefully selected plastic materials for the highest effect of filter cleaning. The initial resistivity can be quickly recovered by flushing the filter to the least degree for a quick supply of ultrapure water.

5. Increased variety

With a new 0.1 μm size added to the 0.2 μm, 0.45 μm, and 1.2 μm lineup, the AstroPore PSE Cartridge W is now available in three pore sizes. The types available are G, M, P, and MP to meet specific needs in various fields.



Photograph of a section of polysulfone membrane using an electron microscope

Major Applications

The AstroPore PSE Cartridge W offers excellent performance for removal of fine particles and microorganisms from the various kinds of water used in the manufacturing of semiconductors in the electronics industry.

1. Pure water for manufacturing processes such as cleaning water for semiconductor elements
2. Various kinds of water used in semiconductor-related industries
3. Various kinds of water for manufacturing processes of electronic tubes such as cathode ray tubes and other related parts
4. Filtration of water used in the food industry
5. Various ultrapure water for laboratories
6. Pure water for various manufacturing industries

Table of Performance Characteristics

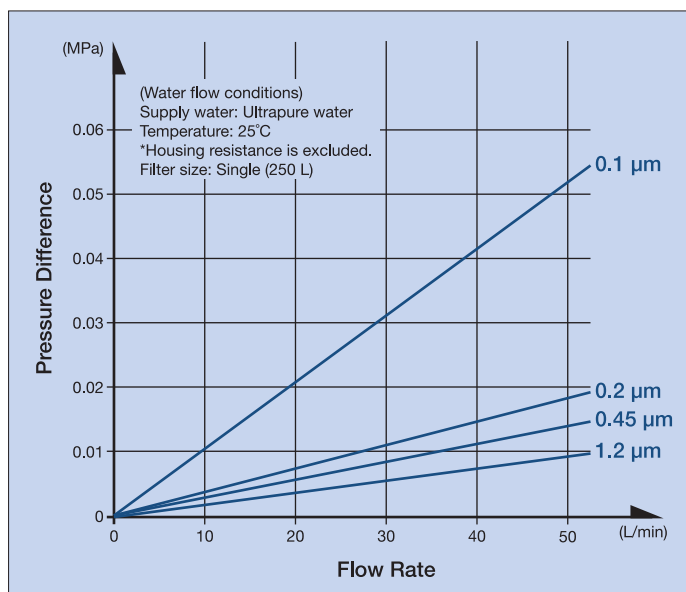
Item		Unit	Performance				Remarks
Pore size		μm	0.1	0.2	0.45	1.2	
Size	Length	mm	~~~~~				(Note 1)
	Outer diameter	mm	70				
	Inner diameter	mm	26				G type
Max. differential pressure	25°C	MPa	0.54 (positive pressure)				
	25°C		0.34 (back pressure)				(Note 2)
	70°C		0.29 (positive pressure)				
	70°C		0.20 (back pressure)				(Note 2)
Max. heat resistance		°C	90				(Note 3)
Applicable pH range			1 ~ 14 (Support: Polypropylene) 1 ~ 13 (Support: Polyester)				(Note 4)

(Note 1) Refer to "Sizes" table.
 (Note 2) Do not apply back pressure except for instantaneous application.
 (Note 3) The max. heat resistance of 70°C is applied to G type (D and T).
 (Note 4) In case of chemical fluid filtration, a pre-test should be performed under users' own condition.

Size

Dimension (mm)	Type	Single (250 L)				Double (500 L)			Triple (750 L)		
	Form	G type	M type	P type	Q type	G type	M type	P type	G type	M type	P type
Length (without packing)		244	257	313	245	496	509	565	748	761	817
Length (with packing)		252	—	—	—	504	—	—	756	—	—

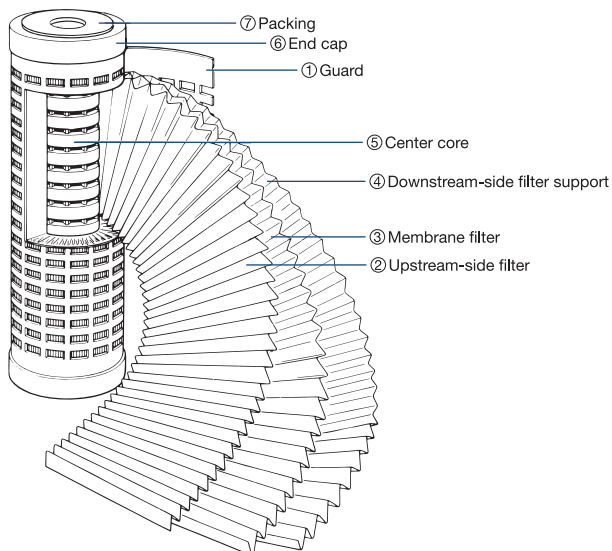
Flow Rate Characteristics



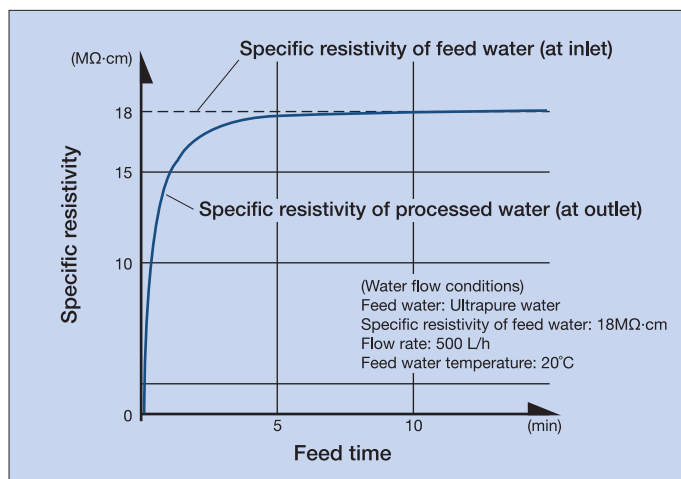
Construction and Materials

Pre-filter support of polysulfone membrane and two layers are pleated together and integrated into a cartridge structure by the thermal fusion bonding method. [Example of a G type cartridge]

- ① Guard — Polypropylene
- ② Upstream-side filter — Non-woven polyester fabric
- ③ Membrane filter — Polysulfone
- ④ Downstream-side filter support — Non-woven polyester fabric
- ⑤ Center core — Polypropylene
- ⑥ End cap — Polypropylene
- ⑦ Packing — PSE-PPW: EPDM
PSE-W: Silecone rubber



Initial Flushing and Recovery of Resistivity



Chemical Resistance

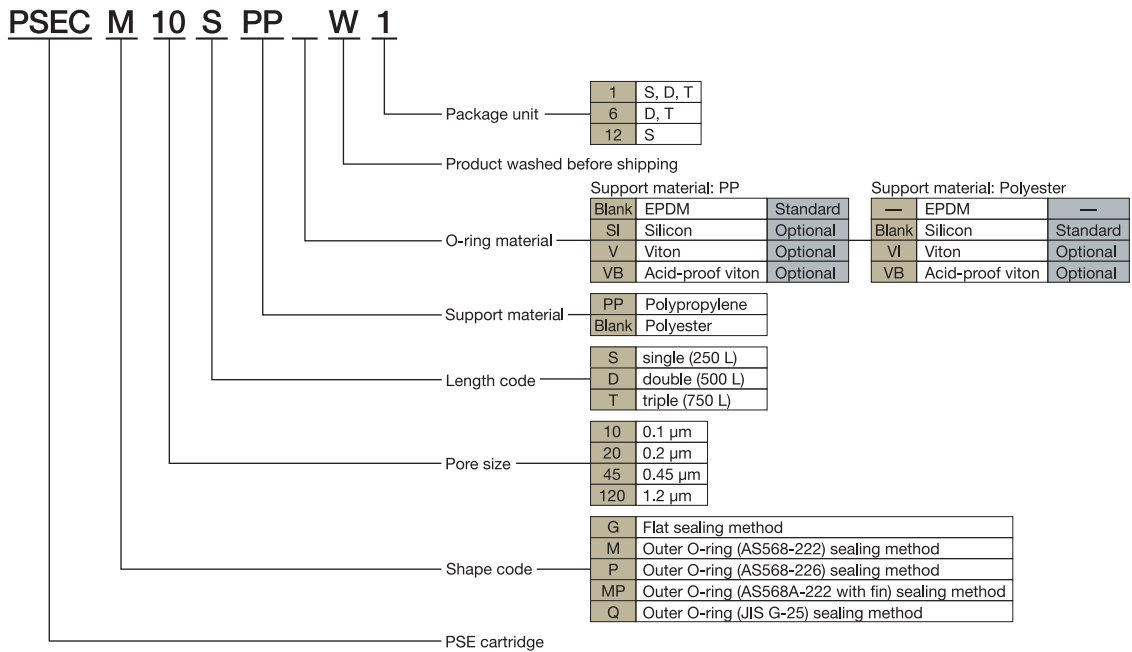
The data presented below were obtained from 24-hour immersion tests at room temperature.

Please check the chemical compatibility with respect to your actual operating conditions before use.

Classification	Chemicals	Compatibility	
		PSE-PPW	PSE-W
Hydrocarbons	Benzene	×	×
Halogenated Hydrocarbons	Trichloroethylene	×	×
Ethers	Ethyl ether	×	×
Glycols	Propylene glycol	○	○
Alcohol	Methanol	○	○
	Ethanol	○	○
	Isopropanol	○	○
	Benzyl alcohol	×	×
Ketones	Acetone	×	×
Esters	Ethyl acetate	×	×
Others	Nitric acid (6 mol/L)	○	×
	Sulfuric acid (3 mol/L)	○	○
	Hydrochloric acid (6 mol/L)	○	○
	Sodium hydroxide (6 mol/L)	○	×
	Aqueous ammonia (1 mol/L)	○	○

○ — Compatible, × — Incompatible

Product Codes



Sterilization Process

The AstroPore PSE Cartridge W can be sterilized repeatedly. Sterilization at specified intervals is required for maintaining reliable and consistent bacterial removal and filtration performance.

Hot water sterilization 90°C

Chemical sterilization

- Hydrogen peroxidised 5%
- Formalin 1%
- Sodium hypochlorite 10 ppm (Chlorine water)

Types

The following three types are available depending on the form of sealing: G, M, P and MP types.

