

AstroPore Fujifilm Micro Filter

PPE Cartridge

(Pleated membrane cartridge)



AstroPore PPE Cartridges meet the needs in a wide range of industrial fields including the chemical, electronics, pharmaceutical, cosmetic, and food industries.

AstroPore PPE Cartridges are used for the prefiltration and clarification of ultrapure water, various solvents, chemicals, and process gases.

AstroPore PPE Cartridges have proven levels of performance in the prefiltration and clarification of aqueous and non-aqueous liquids and gases.

AstroPore PPE Cartridges offer outstanding performance in prefiltration and clarification applications.

Fabricated from polypropylene, which has excellent chemical resistance, the cartridges provide optimum efficiency in prefiltration and clarification for particulate removal of acids, alkalis, various chemicals, photoresists, solvents, as well as air and gases.

Specific Features

1. Excellent clarification

The fine, non-woven fabric filter medium performs reliable clarification. The polypropylene material filter medium, provides optimum efficiency in removing particles from gases.

2. Excellent prefiltration function

The excellent prefiltration capability of the filter membrane reliably captures contaminants and promises a long service life for the filtration system.

3. Excellent chemical resistance

Because the cartridge components are entirely made of polypropylene, the AstroPore PPE Cartridges have the excellent chemical resistance necessary for the filtration of acids, alkalis, and various organic solvents.

4. Inert and safe materials

The filter medium and components of the cartridges are made of inert materials and are biologically safe without producing any effluent.

5. Available in various shapes

Various shapes are available to fit a number of different housings.

Construction and Materials

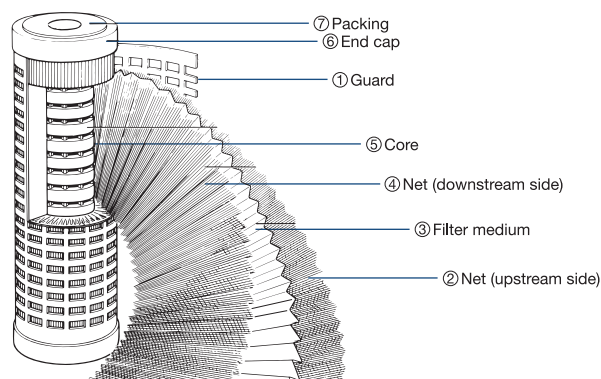
PP non-woven fabric and nets are pleated together and integrated into a cartridge structure using the thermal fusion bonding method.

[Example of a G type cartridge]

- ① Guard — Polypropylene
- ② Net (upstream side) — Polypropylene
- ③ Filter medium — Polypropylene
- ④ Net (downstream side) — Polypropylene
- ⑤ Core — Polypropylene
- ⑥ End cap — Polypropylene
- ⑦ Packing — EPDM (standard*)

* Option: Silicone or Viton packaging

*Guard ① is not provided in cartridges without a guard.



Major Applications

Clarification and prefiltration of aqueous and non-aqueous liquids and gases in a wide range of fields including electronics, pharmaceutical, cosmetic, and food industries, as well as production and prefiltration of pure-water.

1. Prefiltration and clarification of chemicals including various acids, alkalis, and solvents
2. Prefiltration and clarification of photoresists
3. Prefiltration of blood serum and vaccine culture mediums
4. Prefiltration and clarification of liquid foods
5. Filtration and prefiltration of base materials for magnetic products
6. Prefiltration for reverse osmosis, ultrafiltration, and microfiltration in various pure water production systems
7. Prefiltration and clarification of fermentation air, vent air, compressed air, filled gas, etc.
8. Filtration of various gases for semiconductor manufacturing processes (atmospheric gases, raw gases, gases for membrane formation, doping gases, etching gases, etc)
9. Filtration of various solutions used in metal plating processes
10. Filtration of paints and dyes

Retention Efficiency Example

Retention grade	Particle size (μm)									Unit: %
	0.4	0.5	1.0	1.5	3.0	5.0	10.0	20.0	30.0	
PPE004	93.6	95.4	97.7	98.9	—	—	—	—	—	
PPE005	—	91.5	94.7	98.3	99.9	—	—	—	—	
PPE01	—	—	89.7	96.1	99.9	—	—	—	—	
PPE03	—	—	—	77.2	93.8	98.8	—	—	—	
PPE10	—	—	—	—	82.4	94.9	99.9	99.9	—	
PPE30	—	—	—	—	—	—	99.3	99.9	99.9	

Measuring conditions
 Test particle: MR60G
 Test liquid turbidity: 200 ppm
 Flow rate: 10 L/min
 Measurement time: 20 minutes after the passing water

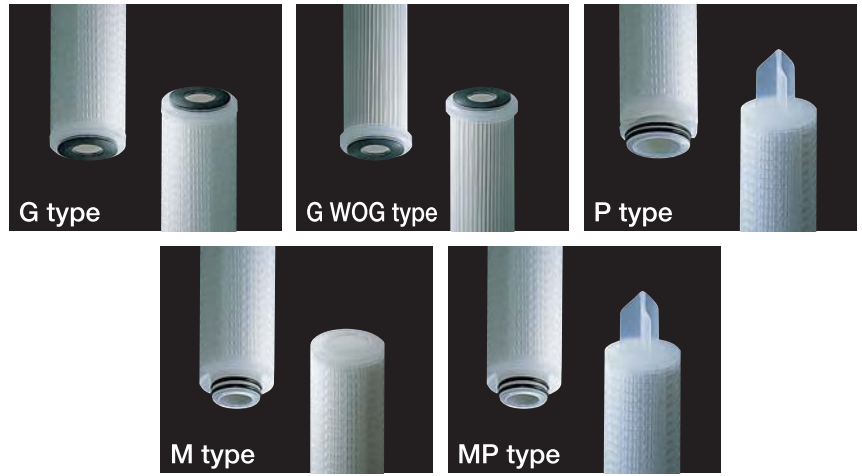


Table of Performance Characteristics

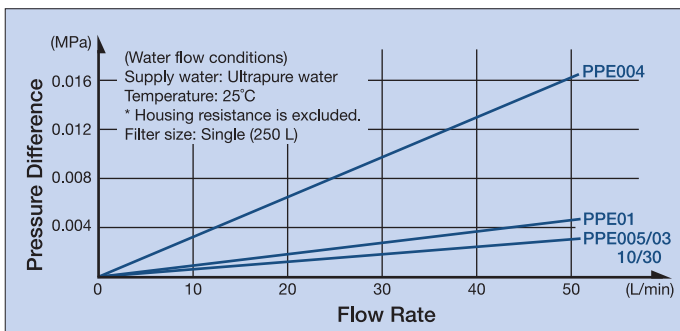
Item	Unit	Type	Grade	Cartridge with guard						Cartridge without guard					
				PPE004	PPE005	PPE01	PPE03	PPE10	PPE30	PPE004 WOG	PPECG005 WOG	PPE01 WOG	PPE03 WOG	PPE10 WOG	PPE30 WOG
Size	Length	mm		~~~~~ (Note 1)											
	Outer diameter	mm		70											
Max. differential pressure	Positive pressure	25°C	MPa	0.49											
		80°C	MPa	0.20											
Back pressure	25°C	MPa		0.15						—					
			80°C		0.10						(Note 2)				
Max. heat resistance (ΔP = 0.20 MPa)	°C			P, M, and MP: 121 for 30 min. (Sterilization by autoclave) (Note 3)											
				G: 80 (For use over long periods, verify compatibility before use.) (Note 4)											
Applicable pH range				1 ~ 14 (Note 5)											

(Note 1) See "PPE Cartridge Sizes" table. (Note 2) Do not apply back pressure to cartridges without guards.

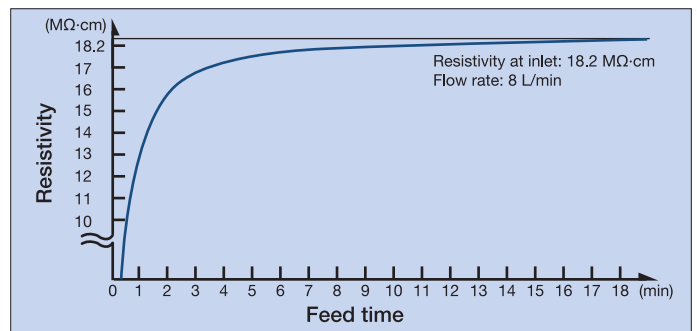
(Note 3) 133°C for 30 min. (in-line steam sterilization) is applied to a type with silicone O-ring attached. (Note 4) Max. 70°C for G-D (double) type and G-T (triple) type.

(Note 5) In case of chemical fluid filtration, a pre-test should be performed under users' own condition.

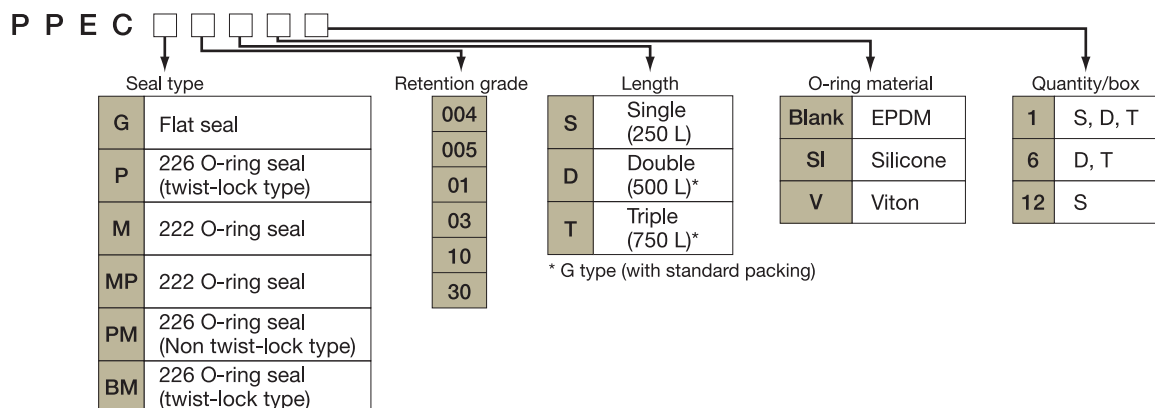
Flow Rate Characteristics



Positivity Recovery Characteristics



Product Codes



Sterilization Process

Repeated sterilization is possible.

1. Sterilization with hot water
(Abrupt changes in temperature must be avoided.)
2. Sterilization by autoclave (P, M, and MP types)
3. In-line steam sterilization
(P, M, and MP types with silicone O-ring attached)
4. Sterilization with ethylene oxide gas

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	Cartridge body	Sealing material		
			EPDM	Silicone	Viton
Hydrocarbons	n-hexane	○	×	×	○
	Gasoline	○	×	×	○
	Benzene	△	×	×	△
	Toluene	○	×	×	△
	Xylene	△	×	×	△
Halogenated Hydrocarbons	Methylene chloride	△	×	×	△
	Trichloroethane	△	×	×	○
	Trichloroethylene	△	×	×	○
	Perchloroethylene	△	×	×	○
Alcohol	Methanol 98%	○	○	○	△
	Ethanol 98%	○	○	○	△
	Isopropanol	○	○	○	○
	Butanol	○	○	△	○
Ketones	Acetone	○	○	×	×
	Methyl ethyl keton	○	○	×	×
	Cyclohexanone	△	△	×	×
Esters	Methyl acetate	○	△	×	×
	Ethyl acetate	△	△	×	×
	Butyl acetate	○	○	×	×
Acids	Hydrochloric acid 25%	○	△	×	○
	Hydrochloric acid 37%	○	×	×	○
	Sulfuric acid 25%	○	×	×	○
	Sulfuric acid 98%	△	×	×	○
	Nitric acid 25%	○	○	△	○
	Nitric acid 70%	△	×	×	○
	Acetic acid 25%	○	○	○	○
	Acetic acid 99.8%	○	△	△	×
	Phosphoric acid 85%	○	○	○	○
	Hydrofluoric acid 25%	○	△	○	○
	Hydrofluoric acid 50%	○	×	△	○
	Perchloric acid 25%	○	○	△	○
	Hexafluorosilicic acid 50%	△	△	×	○
Alkalis	Aqueous ammonia 30%	○	○	△	△
	Sodium hydroxide 32%	○	△	○	△
Aqueous Solutions	Hydrogen peroxide 30%	○	△	○	○
	Sodium hypochlorite	○	○	○	△
Others	Ethyl cellosolve	△	○	×	△

○ — Compatible

△ — Check compatibility before use, as swelling, etc., may be resulted.

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PPE Cartridge Sizes

Type	S (single)						D (double)				T (triple)			
	G type*	P type	M type	MP type	PM type	BM type	G type*	P type	M type	MP type	G type*	P type	M type	MP type
Length (mm)	250	318	261	312	263	267	500	568	511	562	750	818	761	812

* Cartridges with standard packaging

Handling Instructions

- For a filtration process, use the PPE Cartridge at or below the specified pressure.
 1. Apply positive pressure at a differential pressure of 0.49 or lower (at room temperature).
 2. Do not apply back pressure. Observe this instruction particularly when using cartridges without guard.
- For a filtration process, use the PPE Cartridge at or below the specified temperature.
Operate the PPE Cartridge at or below 0.20 MPa (positive pressure) for the operation temperature of 80°C.
- All PPE Cartridge components are made of polypropylene and have excellent chemical resistance. However, check the chemical compatibility against your actual operating conditions before use.
- After setting the cartridge in your system, make sure to flush the system with a proper liquid depending on the intended operation to be performed.