

ultra.poly PP100

Absolute Rated Pleated Polypropylene Cartridge Filters



A range of absolute rated cartridge filters from ultrafilter GmbH Hilden, featuring the latest developments in meltblown polypropylene filter media technology, ultra.poly PP100 cartridges are based on a robust all polypropylene construction, offering removal ratings from 0.5 to 105 micron absolute.

ultra.poly PP100 cartridges are suitable for absolute removal of unwanted particulates and for prefiltration to membrane filters.

The graded multi-layer polypropylene media provide prefiltration of the process fluid prior to the absolute rated final layer. The unique design of the ultra.poly PP100 cartridges helps to achieve lower running costs and a smaller process footprint.

The ultra.poly PP100 are also highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics.

They are suitable for applications ranging from bioburden reduction to the clarification of a wide range of process liquids and end products.

Applications

ultra.poly PP100 cartridges provide absolute filtration where reproducibility and consistency of performance are critical. Suitable for the filtration of aqueous and organic liquids, ultra.poly PP100 cartridges can be used as prefilters or final filters in the following applications:

- **Pharmaceuticals and Bioprocessing**
The batch preparation of intermediates used in the manufacture of pharmaceutical and bioprocessed products. Used as prefilters to extend the life of membrane filters.
- **Foods and Beverages**
The clarification of beers, wines and spirits to a clear and bright finish without affecting taste or colour.
- **Fine Chemicals**
The filtration of high grade chemicals including solvents, reagents, photographic emulsions, inks, paints and plating solutions.
- **Cosmetics**
The clarification of process water and intermediates for the finished product.
- **Process Water Systems**
The filtration of process water installations for removal of general contamination and resin fines.
- **Microelectronics**
The preparation of process water and chemicals used in the manufacture of semiconductors and other electronic components.

Features and Benefits

- **ultra.poly PP100 cartridges**
Extensive research and selection of the latest and most advanced polypropylene meltblown microfibre filter media, results in improved performance, leading to extended filter life at a given efficiency.
- **Graded multi-layer media**
The multi-layer media structure provides prefiltration of the process fluid prior to the absolute rated final layer. This combination provides economy of use and a smaller process footprint.
- **High filtration area**
Large surface area for low clean pressure drop.
- **Guaranteed removal ratings**
ultra.poly PP100 cartridges are validated using the recognised industry standard modified OSU-F2 single pass test to Beta 5000 (99.98% efficiency).
- **Suitable for steam and hot water sanitisation**
ultra.poly PP100 cartridges are resistant to repeat steam sterilisation up to 135°C (275°F) and hot water cycles at up to 90°C (194°F).
- **Environmentally friendly**
ultra.poly PP100 filters are environmentally friendly, all cartridges can be readily incinerated to trace ash.

- **Full traceability**
All ultra.poly PP100 cartridges are identified with a batch serial number. Each ultra.poly PP100 cartridge is supplied with a Certificate of Quality and an operating instruction leaflet.
- **Controlled manufacturing environment**
ultra.poly PP100 cartridges are manufactured in an ISO Cleanroom environment by fully gowned staff, minimising the risk of contamination.

Cartridge Construction

The high quality robust all polypropylene construction of ultra.poly PP100 cartridges, allows for excellent chemical compatibility with a wide range of fluids.

The meltblown polypropylene media provides a bonded matrix thus eliminating fibre migration.

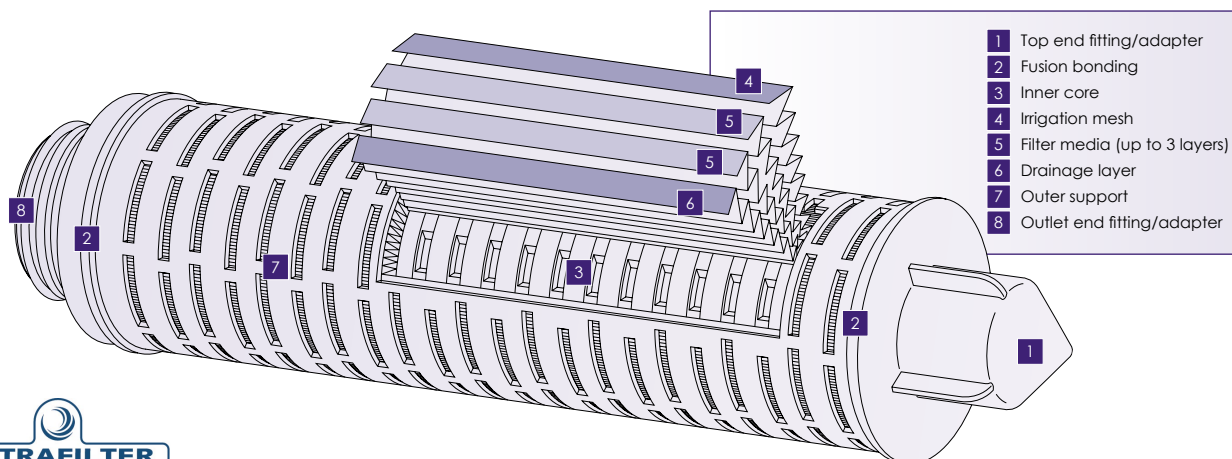
The inherent structural stability of the ultra.poly PP100, prevents 'channelling' and avoids the risk of particle unloading even under impulse conditions.

The multi-layer combination of filter media, irrigation mesh and drainage material carefully pleated and thermally bonded maximises the media area and ensures an efficient flow throughout the cartridge.

The ultra.poly PP100 fusion bonded construction ensures cartridge integrity. No surfactants or bonding agents are used, minimising extractables.

Table 1 Particle Retention Rating

Code	Pore Rating (microns)	Absolute Rating 99.98% Beta 5000 (microns)	Nominal Rating 99.90% Beta 1000 (microns)	Nominal Rating 90.00% Beta 10 (microns)
PP P5	0.5	0.5	0.45	0.35
PP P8	0.8	0.8	0.6	0.4
PP 01	1	1	0.9	0.55
PP 02	2	2	1.7	1.2
PP 03	3	3	1.75	1.2
PP 05	5	5	2.6	1.25
PP 07	7	7	5	2
PP 10	10	10	8	7.5
PP 15	15	15	11	9
PP 20	20	20	12.5	10
PP 30	30	30	20	13
PP 40	40	40	30	20
PP 60	60	60	55	50
PP 90	90	90	85	60



Specifications

Materials of Manufacture

Filter media:	Polypropylene
Support layers:	Polypropylene
Inner core:	Polypropylene
Outer support:	Polypropylene
End fittings:	Polypropylene
Support ring:	Stainless steel

Cartridge Dimensions (Nominal)

Diameter:	70mm (2.8")
Length:	1 module (short): 125mm (5")
	1 module: 254mm (10"), 508mm (20")
	2 modules: 762mm (30"), 1016mm (40")

Effective Filtration Area

Up to 0.6m² per 250mm module (depending on pore rating).

Cartridge Treatment

Standard:	Cleaned without further treatment.
Flushed:	Flushed with pyrogen-free water.
Rinsed:	Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm.

Gaskets and O-Rings

Ethylene Propylene, PTFE encapsulated, Silicone, Viton, Nitrile or Polypropylene felt.

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0 bar (87lb/in ²)
80°C (176°F):	4.0 bar (58lb/in ²)
100°C (212°F):	3.0 bar (43lb/in ²)
120°C (248°F):	2.0 bar (29lb/in ²)
125°C (248°F):	1.5 bar (22lb/in ²)

Reverse flow direction at:

20°C (68°F):	2.1 bar (30lb/in ²)
80°C (176°F):	1.0 bar (15lb/in ²)
100°C (212°F):	0.5 bar (7lb/in ²)

Operating Temperature

Maximum continuous: 80°C (176°F)

Sterilisation

In situ steam 80 x 30 minute cycles at 135°C (275°F).
Hot water 200 x 20 minute cycles at 85-90°C (185-194°F).

Extractables

Minimum total extractables. Please refer to the ultra.poly PP100 Validation Guide.

Integrity Testing

ultra.poly PP100 filter cartridges are batch tested for integrity using the Bubble Point Test. Procedural details are available from **ultrafilter GmbH**.

Clean Water Flow Rates

- Typical clean water flow rate:
A 254mm (10") ultra.poly PP100 single cartridge exhibits the flow-ΔP characteristics indicated below, for solutions with a viscosity of 1 centipoise.
- Other solutions:
For solutions with a viscosity of greater than 1 centipoise, multiply the indicated differential pressure by the viscosity in centipoise.

