Klearfil™ Absolute Rated Pleated Depth Filters

A range of absolute-rated cartridge filters from Porvair Filtration Group, featuring the latest developments in meltblown polypropylene filter media technology, Klearfil™ cartridges are based on a robust polypropylene construction, offering removal ranges from 0.5 to 75 micron.

The combination of up to eight separate filtration layers provides true depth filtration, within a pleated cartridge construction, and a resistance to fouling. Globally multi-layered

Globally multi-layered media structure provides protection of the process fluid prior to the absolute rated final layer. The unique design of the Klearfil™ cartridges helps to achieve lower running costs and a smaller process footprint.

Klearfil™ are also highly resistant to longevity failure caused by steam sterilisation and have excellent chemical compatibility with a wide range of process fluids.

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

Applications

Klearfil™ cartridges provide absolute and nominal filtration where the cost of filtration is critical. Suitable for the filtration of aqueous and organic liquids, Klearfil™ cartridges can be used as prefilters or true filters in block stack filtration. Suitable for manufacture with all major ink types.

Features and Benefits

Klearfil™ cartridges are validated using the recognised industry standard modified ISO-529 single piece test to ISA 39 (98% efficiency). Suitable for steam and hot water sanitisation.

Klearfil™ cartridges are resistant to steam exposure at up to 180°C (356°F) and hot water cycles up to 80°C (176°F).

Environmental Load

Klearfil™ filters are environmentally friendly, all agent cartridges can be readily incinerated to trace ash.

Full Incinerability

All agent cartridges are identified with a batch serial number. Each Klearfil™ cartridge is supplied with a Certificate of Quality and an operating instruction leaflet.

Controlled manufacturing environment

Klearfil™ cartridges are manufactured in an ISO Class 7 environment by fully gloved staff, minimising the risk of contamination.

Cartridge construction

The high quality robust polypropylene and nylons used in the Klearfil™ cartridges, allow for excellent chemical compatibility with a wide range of bulk ink fluids.

The meltblown polypropylene and nylon media provide a bonded matrix that eliminates filter migration.

The inherent structural stability of the Klearfil™ prevents "channelling" and avoids the risk of particle unloading even under adverse conditions.

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

The Klearfil™ fusion-bonded construction ensures cartridge integrity. Its surfactants or bonding agents are used, minimising extractables.

Specifications

Materials of manufacture

Filter media: Polypropylene
Support layer: Polypropylene
End fittings: Stainless steel
Support rings: Stainless steel

Cartridge dimensions (internal)

Diameter: 70mm (2.8"
Length: 1 module (short): 125mm (5"
2 module: 245mm (9.6"
Cartridge treatment

Sterilised
Flushed with pyrogen-free water.
Rinsed

Dimensions

Both sides polyester, TEP® preannealed, silicone, PTFE, Nitrile or Polypropylene felt.

Maximum differential pressure

Normal flow direction at 20°C (68°F): 2 bar (30psi)
Reverse flow direction at 20°C (68°F): 1 bar (15psi)

Operating temperature

Maximum temperature at 15 minute: 85°C (185°F)
Hot water 20°C (68°F): 90°C (194°F)

Extractables

Minimal total extractables. Please refer to the Klearfil™ validation Guide.

Integrity testing

Klearfil™ filter cartridges are batch tested for integrity using the Bubble Point Test. Processual details are available from Porvair.

Clean Water Flow Rate

Typical clean water flow rate:
A 25mm (1") Klearfil™ single cartridge exhibits the flow 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.
Additional Information

Range
Suitable for use in Inprinta filter housings and as direct replacements for existing cartridges, Klearfil™ cartridges can be supplied with end fittings to suit most hardware installations without modification. They are available in single or multiple modules of 5, 10, 20, 30 and 40 inches, and in a choice of removal ratings from 0.5 to 75 micron. Klearfil™ Junior versions are also available. Each cartridge is supplied with all necessary seals or O-rings to ensure chemical compatibility.

Quality assurance
Klearfil™ cartridges are manufactured in an ISO Cleanroom environment by staff fully gloved to minimise any risk of contamination during production. Klearfil™ cartridges are batch tested and flushed with pyrogen-free ultra-pure water. As a further safeguard, every cartridge is identified with a batch serial number, allowing users to maintain their own process records.

Registered ISO 9001, Inprinta procedures are subject to high standards of quality assurance as demonstrated through its Drug Master File status.

Material conformity and validation
The bio-safety of all materials used in the manufacture of Klearfil™ cartridges is assured by FDA approval, USP Class VI and meets or exceeds the latest EC Directives for Food Contact. A comprehensive validation guide for Klearfil™ cartridges is available on request.

Chemical compatibility
The Klearfil™ materials of construction are compatible with a wide range of chemicals and solvents, however care must be taken to select the appropriate seal materials. A comprehensive chemical compatibility guide is available. Since operating conditions vary considerably between applications, verification by the end user is recommended.

Filter housings
Please contact an Inprinta representative for further information on our range of filter housings.

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