

BorsoNylo

Nylon 6.6 Membrane Cartridge Filters

VAN BORSELEN FILTERS



A range of microbially rated cartridge filters from Van Borselen Filters, featuring the latest developments in membrane technology, **BorsoNylo** cartridges are based on a naturally hydrophilic nylon membrane. When combined with quality all-polypropylene cartridge components and high integrity manufacturing techniques common to all Van Borselen cartridge filters, the nylon membrane provides a high strength, long life cartridge of consistently precise particle retention across a wide range of particle sizes.

BorsoNylo cartridges exploit the narrow pore size distribution and high void volume of the media to provide a choice of cartridges capable of meeting the requirements of most applications. Careful media selection ensures that **BorsoNylo** cartridges are also very suited to critical particle control down to 0.03 micron ratings. **BorsoNylo** cartridges offer high flux rates and low differential pressures, a feature common to nylon membranes.

BorsoNylo cartridges benefit from high protein binding characteristics of nylon membranes. They are also highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics. **BorsoNylo** cartridges are ideal for use in ultra pure water supply systems (18M Ω .cm).

As a consequence **BorsoNylo** cartridges provide a combination of features and benefits not hitherto available from cartridges based on PVDF, mixed esters of cellulose or polysulphone membranes. They are suitable for applications ranging from sterile filtration, bioburden reduction and the clarification of a wide range of process liquids and end products.



Features and Benefits:

- **Careful media selection**

Careful media selection means that **BorsoNylo** cartridges are available to suit a wide range of process critical and general purpose applications.

- **Guaranteed microbial ratings**

BorsoNylo cartridges are validated for bacterial removal according to HIMA guidelines and ASTM F838-05, with a log reduction value >7. They are therefore suitable for applications requiring sterilising grade filtration.

- **Cartridge integrity and low TOC levels**

Each **BorsoNylo** module of every cartridge is individually integrity tested. Each complete filter cartridge is flushed with pure water which is inspected daily for pyrogens using the standard LAL test. When required, they can be pulse flushed with 18M Ω .cm pyrogen-free ultra-clean water.

- **Controlled manufacturing environment**

BorsoNylo cartridges are manufactured in an ISO Cleanroom environment by fully gowned staff, minimising the risk of contamination.





Specifications

Materials of Manufacture

Filter membrane:	Nylon 6.6
Membrane support:	Polypropylene
Irrigation mesh (support):	Polypropylene
Drainage layer:	Polypropylene
Inner core:	Polypropylene
Outer support:	Polypropylene
End fittings:	Polypropylene
Support ring:	Stainless steel

Cartridge Dimensions

Diameter:	70mm (2.8")
Length:	254mm (10")
	508mm (20")
	762mm (30")
	1016mm (40")

Effective Filtration Area

Up to 0.69m² per 10".

Gaskets and O-Rings

FDA approved Ethylene Propylene, FEP encapsulated, Silicone, Viton® and Nitrile available.

Operating Temperature

Maximum continuous: 60°C (140°F)

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)

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)

Sterilisation

In situ steam 30 x 25 minute cycles at 125°C (257°F).

Extractables

Minimum total extractables. Please refer to the [BorsoNylo Validation Guide](#).

Integrity testing

Each **BorsoNylo** module of every cartridge is individually integrity tested using the Diffusive Flow Test, which correlates to the HIMA and ASTM F838-05 bacterial challenge tests.

Non-destructive integrity tests, such as Pressure Hold, Diffusive Flow and Bubble Point, can be performed by customers. Procedural details are available from Van Borselen.

Cartridge Construction

BorsoNylo cartridges are manufactured from a multi-layer combination of irrigation mesh, filter membrane, membrane support and drainage material.

BorsoNylo cartridges have optimal pleat geometry to maximise the available filtration area and to ensure an efficient flow through the cartridges.

An all thermal fusion bonded assembly process eliminates the use of resins and binders.

Manufactured as standard with injection moulded polypropylene inner and outer supports, **BorsoNylo** cartridges are designed with the strength necessary to withstand thermal stresses encountered during steam sterilisation and subsequent cooling. They can be steam sterilised and will retain total integrity following steaming at 125°C (257°F).

All components used in the construction of **BorsoNylo** cartridges are FDA approved to 21CFR and meet or exceed the latest EC Directives for Food Contact.



Applications

BorsoNylo cartridges are suitable for the sub-micronic filtration of a wide range of process liquids, in applications where the characteristics of a naturally hydrophilic membrane are required.

- **Biopharmaceuticals**

For the sub-micronic filtration of ingredients, intermediates, make-up waters and final products, including bioburden reduction and clarification.

- **Electronics and semiconductors**

For the sub-micronic filtration of process water and chemicals, including solvents, developers and photoresists. Applications typically include central water plant treatment and critical 'wet bench' point of use filtration.

- **Fine chemicals**

For the bioburden reduction and clarification of a wide range of process chemicals.

- **Beverages**

For the bioburden reduction and clarification of various beverages, including the reduction of yeast and spoilage organisms. Low colour removal is an additional advantage.

- **Pure water supply**

For use in ultrapure water treatment systems (including Water-For-Injection), as either a sterilisation filter or for bioburden reduction





Additional Information

Range

Van Borselen Filters Supplies a full range of filtration products: e.g.:
Filtercartridges (Meltblown/ Membranes/ Activated Carbon)
Filter housings, Filterbags, Lenticular Module Filters, Self Cleaning
Filters, Filter Sheets, Sieving Machines, Porous Sintered Metal,
Oil skimmers, Strainers and many more..

Material Conformity and Validation

The bio-safety of all materials used in the manufacture of **BorsoNylo** cartridges is assured by FDA approval to Title 21CFR.177. and EC 10/2011

Chemical Compatibility

The **BorsoNylo** materials of construction are compatible with a wide range of chemicals and solvents, however care must be taken to select the appropriate seal material. Advice on chemical compatibility is available. Since operating conditions vary considerably between applications, verification by the end user is recommended.

Quality control

Our factories are all located in Western Europe and are accredited to ISO 9001-2008.

All our filters are fully traceable and manufactured under clean room conditions.

Engineering capacities

One of our strengths is developing filter vessels for critical applications in the chemical industry.

We have a wide experience in supplying filter vessels, like Duplex (UNS S31803), Super-Duplex (UNS S32750/60), Titanium, RvS316L, CS (optionally with a coating or lining).

Our filter vessels comply with the necessary design codes (ASME VIII, EN13445, U-stamp and PD5500) and comply to ATEX and PED 97/23/EC standards. Both liquids and gases PED classes I, II, III, IV, all modules



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