

# BorsoVino

Double Layer Membrane Filters For Wine And Beer Filtration

VAN BORSELEN FILTERS



**BorsoVino** membrane cartridges have been specifically designed, by Van Borselen Filters for wine and beer filtration, as a final filter for cold biological stabilisation. **BorsoVino** cartridges utilise a double layer of naturally hydrophilic polyethersulphone (PES) membrane with a mirrored asymmetric pore structure, which provides graded filtration throughout its depth, resulting in higher throughputs and long service life. When combined with quality all-polypropylene components and high integrity manufacturing techniques, the **BorsoVino** filter cartridge is ideally suited to the most demanding process conditions.

**BorsoVino** 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 **BorsoVino** cartridges are also very suited to critical particle control down to 0.2 micron ratings. **BorsoVino** cartridges offer high flux rates and low differential pressures, a feature common to polyethersulphone membranes.

**BorsoVino** cartridges benefit from the low binding characteristics of polyethersulphone membranes. They are also highly resistant to integrity failure caused by steam sterilisation and have excellent compatibility with CIP sterilising agents.

As a consequence **BorsoVino** cartridges provide a combination of features and benefits not hitherto available from cartridges based on PVDF, nylon, mixed esters of cellulose or polysulphone membranes. They are suitable for applications ranging from sterile filtration, stabilisation and the clarification of a wide range of beverages.



## Features and Benefits:

### • BorsoVino Cartridges

The **BorsoVino** 0.45 micron rated filter removes yeasts and moulds including the smallest spoilage bacteria such as *Oenococcus oeni*. The **BorsoVino** 0.65 micron rated filter removes contaminating yeast, moulds, and spoilage bacteria from beverages. The **BorsoVino** 0.2 micron rated cartridges provide sterile filtration for bottled water and other beverage grade water applications.

### • Guaranteed microbial ratings

**BorsoVino** 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.).

### • Low binding and fouling

**BorsoVino** cartridges have excellent low colour removal characteristics and are resistant to fouling, typically 10 times lower than nylon, 2 times lower than polysulphone and similar to PVDF.

### • Will not hydrolyse

The polyethersulphone membrane used in **BorsoVino** cartridges is extremely resistant to hydrolysis. Resistance to continuous steam sterilisation and hot water sanitisation.





# Specifications

## Materials of Manufacture

Filter membrane:	Dual Polyethersulphone
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:	1 module (short): 125mm (5")
	1 module: 254mm (10")
	2 modules: 508mm (20")
	3 modules: 762mm (30")
	4 modules: 1016mm (40")

## Effective Filtration Area

Up to 0.48m<sup>2</sup> per 10".

## Gaskets and O-Rings

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

## Operating Temperature

Maximum continuous: 85-90°C (185-194°F)

## Maximum Differential Pressure

Normal flow direction at:

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

Reverse flow direction at:

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

## Sterilisation

In situ steam 80 x 20 minute cycles at 125°C (257°F).

Hot water 100 x 20 minute cycles at 85-90°C (185-194°F).

## Extractables

Minimum total extractables. Please refer to the **BorsoVino** Validation Guide.

## Foodgrade approved

FDA 21 CFR 177.1520

FDA 21 CFR 177.2600

EC 10/2011

## Cartridge Construction

**BorsoVino** cartridges are manufactured from a multi-layer combination of irrigation mesh, dual filter membrane, membrane support and drainage material. **BorsoVino** 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, **BorsoVino** 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 **BorsoVino** cartridges are FDA approved to 21CFR and meet or exceed the latest EC Directives for Food Contact.



# Applications

BorsoVino cartridges are suitable for the sub-micronic filtration of a wide range of beverage fluids, in applications where the characteristics of a naturally hydrophilic membrane are required.

- **Wine and sparkling wine**

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

- **Beer**

For the stabilisation of beer, including the removal of yeast and spoilage organisms.

- **Mineral water and soft drinks**

For applications where an integral prefiltration membrane is required.

- **Pocess water supply**

For use in water treatment systems 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 **BorsoVino** cartridges is assured by FDA approval to Title 21CFR.177. and EC 10/2011

## Chemical Compatibility

The **BorsoVino** 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 gasses PED classes I, II, III, IV, all modules



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