Ultra-Vent

ePTFE Membrane Cartridge Filters for Autoclave Venting

Ultra-Vent cartridges are manufactured using a highly hydrophobic ePTFE membrane and are designed for autoclave venting. The enhanced ePTFE membrane offers exceptionally high gas flow rates at low pressure differentials (see graph).

Ultra-Vent cartridges are designed with a ½" BSP male thread for autoclave and small tank venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Ultra-Vent filter cartridge particularly suitable for rapid vacuum break in autoclaves.

Applications

Ultra-Vent ePTFE membrane cartridges meet the demanding filtration requirements of pharmaceutical, laboratory and sterile production environments. They are suitable for a wide range of small-scale sterile venting applications.

- **Autoclave vents**
  The safe sterile venting of autoclaves in pharmaceutical and laboratory processes.
- **Sterile product storage vessels**
  The venting of sterile air to reduce the risk of vacuum formation in pharmaceutical, laboratory and small-scale processes.

World Class Filtration Solutions

Features and Benefits

- **Ultra-Vent cartridges**
  The ePTFE membrane is recognised as the world leading gas sterilising hydrophobic membrane. The membrane of choice is also used in all **Porvair** Fluorofil™ filter cartridges.
- **Guaranteed microbial ratings in a liquid challenge**
  Ultra-Vent cartridges are validated for bacterial removal in liquids in accordance with PDA, HIMA guidelines and ASTM F838-05, with a log reduction value >7. This test is stringent in comparison to an airborne particulate challenge test.
- **Bacterial spores and viruses**
  The retention of bacterial spores and viruses carried in aerosols over extended time periods has been independently validated in tests carried out by the UK Health Protection Agency.
- **Flow ΔP characteristics**
  The unique characteristics of the ePTFE membrane, combined with the construction of the Ultra-Vent filter cartridge, results in exceptionally high gas flowrates at low pressure differentials. This allows rapid vacuum-break conditions to be reached.
- **Steam sterilisation**
  Ultra-Vent cartridges have been designed and validated to be repeatedly steam sterilised in-situ at temperatures of up to 135°C (275°F) for 100 cycles at 20 minutes per cycle. Steam sterilisation in the reverse direction for in excess of 70 cycles in a venting application, without loss of integrity, has been independently validated by customers.
- **Cartridge integrity and low TOC levels**
  All Ultra-Vent cartridges are integrity tested and supplied clean, having been flushed with pure water. When required they can be pulse flushed with 18MΩ.cm pyrogen-free ultra-clean water.
- **Full traceability**
  All Ultra-Vent cartridges are individually and batch identified with a unique serial number. Each Ultra-Vent cartridge is supplied with a Certificate of Quality and an operating instruction leaflet.
- **Controlled manufacturing environment**
- Ultra-Vent cartridges are manufactured in an ISO Cleanroom environment by fully gowned staff, minimising the risk of contamination.

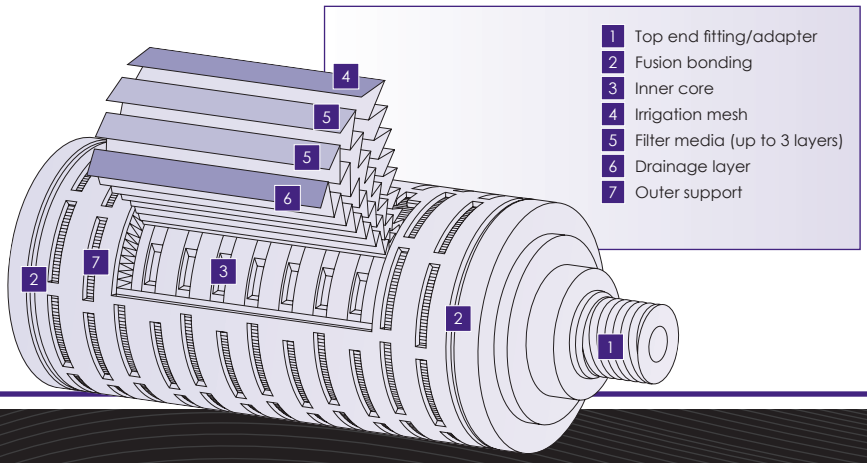
Cartridge Construction

Ultra-Vent cartridges are manufactured from a multi-layer combination of irrigation mesh, filter membrane, membrane support and drainage material. Ultra-Vent 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, Ultra-Vent 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 135°C (275°F).

All components used in the construction of Ultra-Vent cartridges are FDA approved to 21CFR.



Specifications

Materials of Manufacture

Filter membrane:	ePTFE
Membrane support:	Polypropylene
Irrigation mesh (support):	Polypropylene
Drainage layer:	Polypropylene
Inner core:	Polypropylene
Outer support:	Polypropylene
End fittings:	Polypropylene
Sealing:	Fusion bonding

Cartridge Dimensions (Nominal)

Diameter:	70mm (2.8")
Length:	127mm (5")
	64mm (2.5")

Effective Filtration Area

Absolute Microbial Rating (in liquids)	Effective Filtration Area (for 5" cartridge)
0.2µm	0.19m² (2.0ft²)

Cartridge Treatment

Standard:	Cleaned and flushed, without further treatment.
Rinsed:	Ultra-clean, pulse flushed to give a system resistivity of 18MΩ.cm.

Adaptor and O-Ring

Silicone. ½" BSP male thread.

Maximum Differential Pressure

Normal flow direction at:

20°C (68°F):	6.0bar (87lb/in²)
80°C (176°F):	4.0bar (58lb/in²)
100°C (212°F):	3.0bar (43lb/in²)
120°C (248°F):	2.0bar (29lb/in²)
125°C (257°F):	1.5bar (22lb/in²)

Sterilisation

In situ steam 70 x 25 minute cycles at 135°C (275°F).

Extractables

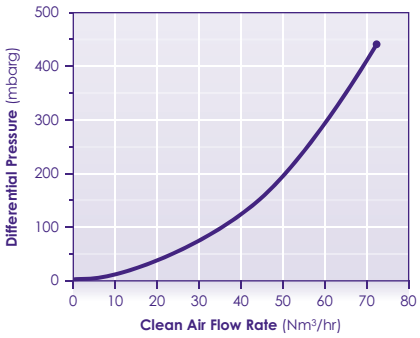
Minimum total extractables. Please refer to the PF-PT Validation Guide.

Integrity Testing

Each Ultra-Vent 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 Diffusive Flow, Water Intrusion, Pressure Hold and Bubble Point, can be performed by customers. Procedural details are available from **ultrafilter**.

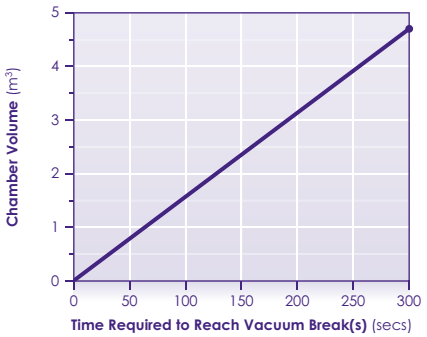
Clean Air Flow Rates

- Typical clean air flow rate:
  A 136mm (5") Ventafil™ cartridge exhibits the flow-**Δ**P characteristics indicated below.



Filter Selection

- Vacuum break application:
  If the initial vacuum is at -980 mbarg, the time required before the vacuum break conditions required to safely open the autoclave door (at -20mbarg) are achieved, is indicated below.



ULTRAFILTER
THE FILTRATION MANUFACTURER

Kronsbein ultrafilter ®

ABOUT US

The ultrafilter group is a privately owned family company. Founded by Dipl. Ing. Dean Kronsbein in Germany, the group now serves the global filtration market with local presence throughout Europe, the Americas, Asia and Australia.

With the help of our products from ultrafilter GmbH in Germany, world renowned, market leading companies have made ultrafilter GmbH their first choice for the Purification of compressed air, technical gases and liquids.

Our passion to manufacture superior and innovative products is the guarantee for cost effective and reliable filtration solutions.

ultrafilter GmbH
Otto-Hahn-Str. 1
40721 Hilden
Tel. +49 (0) 2103 33 36 0
Fax: +49 (0) 2103 33 36 36
info@ultra-filter.de
www.ultra-filter.de

ultrafilter G. Britain LTD
90- Church Road
Hereford • HR1 1RS
Tel.: +44 (0) 1432 367 975
Fax : +44 (0) 1432 807103
info@ultrafilter.uk.com
www.ultrafilter.uk.com

ultrafilter AG
Leutschenbachstrasse 45
8050 Zürich / Schweiz
Tel. +41 (0) 44 224 6060
Fax: +41 (0) 44 224 6061
info@ultraair.ch
www.ultraair.ch

ultrafilter Skandinavia ApS
Sunekær 1
5471 Søndersø / Denmark
Tel. +45(0) 82 303 020
info@ultra-filter.com
www.ultra-filter.com

ultrafilter USA, Inc.
Tel.: 393-321-3809
Fax : 866-389-7888
mike.lewis@ultra-filter.us
www.ultrafilterusa.com

ultrafilter Mexico
Sor Juana Ines de la Cruz # 71B,
Col. Viveros de la Loma, C.P. 54080,
Tlalnepantla, Estado de México.
Tel. +55 5362 8452
Fax: +55 5361-5444
contacto@solvik-int.com
www.solvik-int.com

PT ultrafilter Indonesia
Patra Jasa Office Tower Floor 20th.
JL. Gatot Soeberto Kav. 32 – 34.
Jakarta 12950 - Indonesia.
Tilp ; +62 21 52900590 – 52900598 /
+62811819355
usemedhi@ultrafilter.co.id
info@ultrafilter.co.id
www.ultrafilter.co.id

YOUR FILTRATION SUPPLIER FOR

AIR · LIQUID · GAS · WATER