Whatman *Steri*VENT (0.2µm PTFE)

Product Information sheet

Introduction

Important

Read these instructions carefully before using the products.

Intended use

The products are intended for research use only, and shall not be used in any clinical or *in vitro* procedures for diagnostic purposes.

Description

The *Steri*VENT family of integral VENT filters provides a unique range of dedicated products for the venting of vessels. These products are constructed from a single standardized set of materials (polypropylene & PTFE).

Typical Applications for *Steri*VENT

VENTING of[1]	ISOLATION of[2]
Filling Vessels	Incubators
Mixing Vessels	Autoclaves
Holding Vessels	Lyophilizers
Autoclave Vessels	EtO Sterilizers
Fermentation Vessels	Fermentors
Shipping Vessels	
Dispensing Vessels	

[1] Sterile Venting

[2] Gases Pass, Liquids/Aerosols are Stopped

Especially Useful For

Biotech:

Sterile vents & exhausts for growth environments.

Pharmaceutical & Diagnostics:

Vents for liquid vessels.

Food & Beverage:

Vents for holding, shipping and dispensing vessels.

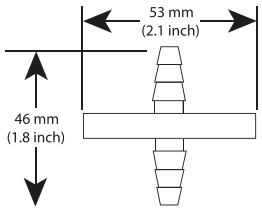
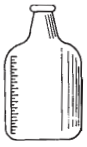
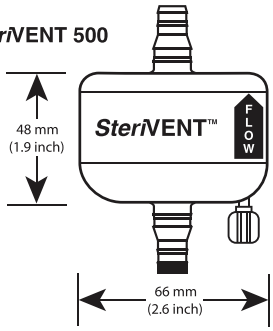
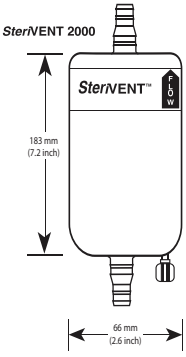
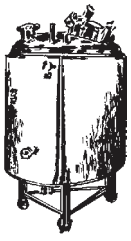
Bulk tanks may store food products, biological products, or deionized water. Vent filters on these tanks allow only sterile, microfiltered air to replace the liquid drawn off for use.

Positive pressure may develop in some vessels as liquids or gases are pumped into the vessel. Reaction gases must be safely vented off, without contaminating either the environment or the tank's contents.

A properly designed sterile vent allows pressure within a sealed vessel to equalize with external atmospheric pressure. In some applications, protection of the environment from contaminants in the vessel is the objective; in other applications, the objective is to protect the contents of the vessel from external contamination.

- Integral
- Bi-Directional
- Sterilizing Grade Filters
- Pure virgin polypropylene structure
- Hydrophobic PTFE membrane
- Autoclavable
- Passes the HIMA Challenge Test
- Broad family of devices specifically for venting
- Product identification and lot numbers are shown on each filter.

The *Steri*VENT family of VENT Filters Shown with Top Toward Atmosphere

Physical Size	Filter area	Connections	Typical Vessel Size
***Steri*VENT 16** 	16 cm^2	Stepped Hose Barbs ¼ to ⅜ in. (6 mm to 10 mm)	 ≈ 5 Gal ≈ 19 L
***Steri*VENT 500** 	500 cm^2	Stepped Hose Barbs ⅜ to ½ in. (10 mm to 12 mm)	 Bulk Tank Vessels
	2000 cm^2	Stepped Hose Barbs ⅜ to ½ in. (10 mm to 12 mm) 1½ in. (38 mm) Sanitary Flange Fitting	 Process Tanks

Operating Instructions: Venting

Safety:

Considering the special factors of your application, consult the table of Technical Data to determine the correctness of use. Key safety concern is to not exceed the pressure, temperature, or chemical compatibility recommendations.

PTFE membrane considerations:

PTFE membrane is hydrophobic and will not allow water (aqueous solutions) to pass without high pressures. These pressures are called the Water Breakthrough Test (WBT) values and change with the pore size of the membrane.

Autoclaving:

Autoclave, at 121°C (132°C Max.) for 20 minutes. Multiple autoclave cycles may be possible, however, reuse is the responsibility of the operator, who should protect the device from cross contamination and detect loss of integrity by appropriate testing. (EtO sterilization should be possible but no studies have been conducted. Radiation is destructive to PTFE.)

Filtration Installations:

Vents:

The atmosphere outlet connector is indicated by the labeled side or the flow arrow. Attach the other connector to the vessel. If exhaust gas is saturated with moisture, install vent filter in a vertical position to allow collected moisture to drain back into vessel rather than fill (and block) vent filter housing.

Integrity Testing:

Water Breakthrough Pressure (WBT):

The PTFE membrane is hydrophobic. This feature allows a simple yet practical test to be conducted with water to determine gross integrity of the filter device. This procedure is particularly helpful in testing "in situ" devices when used as vents. Use sterile water to fill **outlet side of filter**. Apply 5.0 psi (0.3 bar) controlled pressure for 15 seconds. An integral membrane should hold water. This test is not designed to be definitive for pore size. A WBT cannot be performed following use of alcohol.

Technical Data: *Steri*VENT Filters for Sterile Venting

The *Steri*VENT family of VENT filter devices has been designed with a PTFE membrane and polypropylene housing.

Consistent filtration devices provide greater labour efficiency while ensuring consistent filtration performance when compared to assembled reusable filter housings.

Compact designs provide a highly effective filtration area in a small size.

Light weight is extremely important for vents. (Heavy filters can cause collapsed tubing, stopping the intake of air).

Manufactured in Clean Room.

Product Code	Name	PTFE Membrane	EFA[1] Cm²	Description: Housing	Description: Connections[2]	Qty/Pk
2103	*Steri*VENT 500	0.2 µm	500	Capsule 36 (Vented)	SB ⅜ to ½" (10 to 12 mm)	1
2107	*Steri*VENT 2000	0.2 µm	2000	Capsule 150 (Vented)	SB ⅜ to ½" (10 to 12 mm)	1
2108	*Steri*VENT 2000S	0.2 µm	2000	Capsule 150 (Vented)	1½" (38 mm) Sanitary	1

[1] EFA = Effective Filtration Area.

[2] SB = Stepped Hose Barb. The tubing ID is specified for each SB

Maximum Pressure

- **Housing Burst:** 60 psi
- **Operating:** 29 psi (2 bar)

Materials of Construction

- **Housing & Supports:** Polypropylene
- **Filter Media:** PTFE 0.2 µm

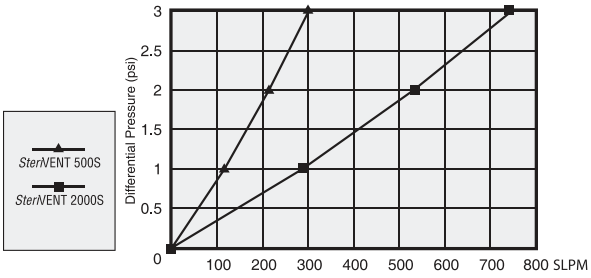
Flow Direction: Bi-directional. (Atmosphere connection is indicated by the label or the flow arrow.)

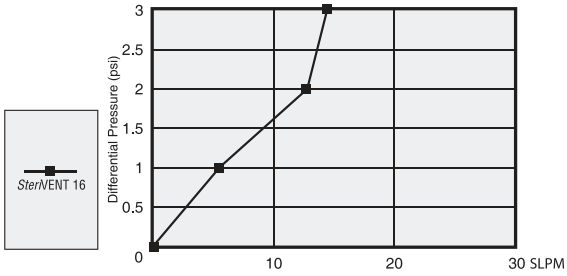
Connections: See specific product

Autoclaving: Autoclave at 121°C (132°C Max) for 20 minutes. Multiple autoclave cycles are possible, however reuse is the responsibility of the operator, who should protect the device from cross contamination and detect loss of integrity by appropriate testing.

Integrity Testable: WBT, Water Breakthrough - Test from **Outlet side only** - See instructions.

*Steri*VENT, Typical Flow Rates in Air





SteriVENT Filters' Retention and Hydrophobicity

Retention of aqueous solutions by hydrophobic microporous membranes is a function of their WBT value, rather than the pore size. Liquid water presented to the surface of a hydrophobic membrane at a pressure lower than the WBT pressure will be blocked by the membrane. Water in its vapor form may pass through a hydrophobic membrane as single molecules, which may condense again to form a liquid on the downstream side. However, it has been reported that no viable organisms have been found on the downstream side of hydrophobic membranes presented with a biological challenge at pressures below the WBT pressure.

Particle retention of membrane filters in air streams is more efficient than in liquid streams by a factor of 10 or more. Retention of particles in liquids is principally by mechanical entrapment while retention in air is by interception, inertial impaction, diffusion, gravitational setting, and electrostatic attraction.

HIMA Challenge Test

*Steri*VENT products pass the HIMA Challenge Test for sterilizing-grade filters. They retain >10^7 CFU/cm^2 *Brevundimonas diminuta* per ASTM F838-83. The microbial retention of *Steri*VENT capsules is correlated to 100% integrity testing during manufacturing.

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For local office contact information, visit cytiva.com/contact

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