



Absorb



Apply



Diffuse



Filter



Vent



Wick

SAFETY IV CATHETER VENTS

Protect healthcare workers and patients from exposure to aerosolized and blood-borne pathogens

The Safety IV catheter is a medical device that is used to access a patient's vein, normally in the lower part of the arm or back of the hand, to introduce intravenous fluids, blood transfusions, chemotherapy and other drugs, and for diagnostics. Vents in the device eliminate blood bypass from the "flashback chamber" to protect healthcare workers and other patients from exposure to aerosolized and blood-borne exposure to both viruses and bacteria. Porex offers a broad portfolio of safety venting configurations that can be selected and customized for a specific device and allow for a maximum Bacterial Filtration Efficiency (BFE) and Viral Filtration Efficiency (VFE).

Did you know?

The average blood exposure rate is 4.4% (4,400 per 100,000 catheter insertions) vs. needle-stick injuries only a fraction of 0.000007% (0.7 per 100,000 safety-engineered IV catheters).

POREX® polyethylene (PE) self-sealing vent plug



POREX® polyethylene (PE) self-sealing in-line vents



POREX Virtek® Sintered PTFE membrane vents



Oxyphen RoTrac® track-etched membrane vents



POREX® PE self-sealing vent plugs & in-line vents

Key Benefits

High Viral (VFE) and Bacterial Filtration Efficiency (BFE) & Protection

- Our self-sealing porous polymer technology has extremely high VFE (>99.9987%) & BFE (99.96%) to maintain the optimal bacterial and viral barriers and airflow to meet (or exceed) FDA & EU guidelines⁴

High Efficiency Airflow and Reduced Back Pressure

- Tested airflow and back pressure at 0.5 psi intervals from 0.5-7.5 psi before maxing out the pressure gauge.
- Range of airflow evenly distributed from 123.99 mL/min at 0.5 psi to 1,566.66 mL/min on the top end at 7.5 psi in a representative sampling of both POREX® polyethylene self-sealing vent plug and in-line vent designs.

Prevents Blood Bypass

- Provides a secure barrier with superior water entry pressure (WEP) performance
- Calibrate to your design specifications:
 - Tested WEP at 0.5 psi intervals from 0.5-20 psi and found no breakthrough or water intrusion in a representative sampling of both POREX's polyethylene self-sealing vent plug or in-line vent designs.

Technical Specifications

Thickness	2-6mm
Typical airflow	261 ml/min (at 1 psi back pressure)
BFE % nominal	>99.9987%
VFE % nominal	>99.9987%
Typical WEP	>20 psi (>1378 mBar)
Typical assembly method	Compression fit / press fit
Acceptable sterilization methods	Gamma, eBeam

POREX Virtek® Sintered PTFE Membrane Vents

Key Benefits

High Viral and Bacterial Filtration Efficacy with Durability

- Our POREX Virtek® PTFE technology has extremely high VFE (>99.999984) & BFE (>99.99999%) for high barrier protection from a durable vent with optimal airflow to meet (or exceed) FDA & EU guidelines²

Free of PFOA

- Compliant with (EC) 1907/2006 REACH / Regulation (EU) 2019/1021 POP

Robust Membrane

- High tensile strength
- No scrim or backing required but PE/PP meshes available if required
- Vent facilitates gas and air passage in flashback chamber

Superior Physical Properties for High-Speed Automation Assembly

- Wide range of bonding techniques: adhesive backing, ultrasonic or heat welding
- Die cut discs from 3mm
- Rolls widths from 8mm to 330mm
- Raw materials in compliance with USP class VI and free of animal-derived additives

Technical Specifications

Material	Thickness, mm Nominal	Typical Airflow, l/hr/cm ² at 70 mbar	BFE % Nominal	VFE % Nominal	WEP, mbar Typical
MD10	0.13	125 (min 70)	>99.9	†	270 (min 175)
MD10L	0.3	85 (min 48)	>99.9	†	270 (min 175)
MD15	0.18	70 (min 45)	>99.99	†	380 (min 265)
MD20	0.25	34 (min 16)	>99.9999	>99.9999	520 (min 350)
MD25	0.19	5 (min 2)	>99.9999	†	1000 (min 750)

All Data are typical values and not meant for specification
 *The Bacterial Filtration Efficiency (BFE) data is based on a modified version of ASTM F2101

Complete testing data and information is available upon request
 ** VFE (Viral Filtration Efficiency), † Not tested but similar results to MD20 expected.
 *** WEP (Water Entry Pressure)



Oxyphen RoTrac® track-etched membrane (TEM) vents

Key Benefits

High Viral and Bacterial Filtration Efficacy & Precise Airflow

- Our RoTrac® track-etched membrane (TEM) technology has extremely high VFE (99.9997%) & BFE (99.999916%) to maintain security with precise controlled flow rate filtration efficacy and airflow to meet (or exceed) FDA & EU guidelines⁶

Precise Controlled Airflow

- Unlike traditional venting membranes, the controlled airflow of RoTrac® Membranes allows a superior performance providing air flow rate > 2.5 l/min cm² bar
- Vent facilitates gas and air passage in flashback chamber
- Hydrophobic membranes repellent to liquids while at the same time allowing optimal airflow

Maintain High Performance After Sterilization

- 100% stable against X-ray and Gamma-irradiation for sterilization

Free of PFOA

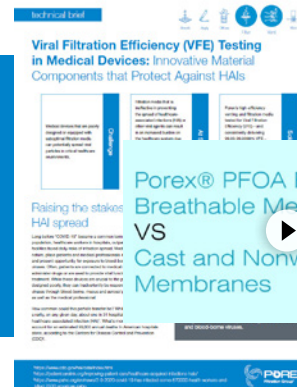
- Compliant with (EC) 1907/2006 REACH / Regulation (EU) 2019/1021 POP

Technical Specifications

Thickness	140 +60/-50 μm
Typical airflow	>2.5 L/min cm ² bar
BFE % nominal	>99.9999%
VFE % nominal	>99.9997%
Typical WEP	≥ 3.0 bar
Typical assembly method	Ultrasonic welding or heat staking
Acceptable sterilization methods	All sterilization methods



View additional resources - including our videos and tech brief – and request a free sample



Data available upon request for all test results mentioned above.

Sources:

1. Jagger, Janine PhD, MPH; Perry, Jane MA; Parker, Ginger MBA; Phillips, Elayne Kornblatt PhD, MPH, RN Blood exposure risk during peripheral IV catheter insertion and removal, *Nursing Critical Care*: November 2012 - Volume 7 - Issue 6 - p 10-15 doi: 10.1097/01.CCN.0000421972.41609.56
2. MEDICAL FACE MASK TESTS AND REQUIREMENTS; U.S.A.: ASTM F2100-19 STANDARD SPECIFICATION FOR PERFORMANCE OF MATERIALS USED IN MEDICAL FACE MASKS; EUROPE: EN 14683:2019 MEDICAL FACE MASKS – REQUIREMENTS AND TEST METHODS. Supporting ASTM Standard covering using test method for other porous media such as Suction Canister Filters, Safety IV Catheters Vents & Arterial Syringe Vent etc. – ASTM F2101 - 19 Standard Test Method for Evaluating the Bacterial Filtration Efficiency (BFE). Scope 1.7 This test method may also be used to measure the bacterial filtration efficiency (BFE) of other porous medical products such as surgical gowns, surgical drapes, and sterile barrier systems.

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