ARTERIAL SYRINGE VENTS

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

The arterial syringe is used to collect blood for blood gas analysis directly from an artery to measure oxygen and carbon dioxide levels in the blood. A vent in the cap both seals the sample airtight so that it is preserved during transport to the lab for analysis and protects healthcare workers and other patients from exposure to aerosolized and blood-borne viruses and bacteria. Porex offers a broad portfolio of arterial syringe 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?

According to guidelines published recently (May 08, 2020) in Medscape, *"Healthcare personnel should wear gloves and eye protection for the duration of the arterial blood gas (ABG) sampling procedure and should follow hospital policies regarding management of body fluid samples."* [1]

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 Filtration Group®

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 guidelines[2]

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 airlow	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 (>99.9999%) for high barrier protection from a durable vent with optimal airflow to meet (or exceed) FDA & EU guidelines[2]

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/cm² 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)

POREX Filtration Group®

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 guidelines[2]

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 cm^2 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 airlow	>2.5 L/min cm2 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 tech brief:
Viral Filtration Efficiency (VFE) Testing in Medical Devices

Data available upon request for all test results mentioned above.

Sources:

1. Mauricio Danckers, MD, FCCP; Chief Editor: Vincent Lopez Rowe, MD, Arterial Blood Gas Sampling Technique, *Medscape* May 08, 2020 https://emedicine.medscape.com/article/1902703-technique
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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