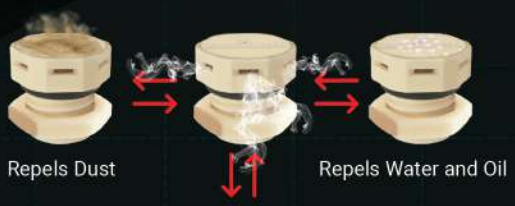
PRESSURE RELEASE VENTS FOR BATTERY PACKS

PorVent®

WHY DO BATTERIES NEED VENTS?

Electric vehicle batteries generate electricity through chemical reactions, leading to heat and gas byproducts. They endure varying operational conditions, including weather, temperature, and altitude changes, as well as temperature shifts during charge cycles. This results in pressure differences and further heat and gas production. PorVent® Pressure Release Vents offer a 2 stage breathable solution that allows air and gas exchange while blocking water, dust, and contaminants in normal operating conditions. Stage 2 activates when the battery goes through a thermal runaway event.

STAGE 1
Normal Operating Conditions



STAGE 2
Thermal Runaway Event

Ingress Protection
PorVent® Pressure Release Vents are IP66/67/68/6K9K rated and are available with Hydro phobic and Oleophobic membrane alternatives

Constant Pressure equalization
PorVent® Pressure Release Vents help in constantly equalizing pressure which helps protect the battery housing against over or under pressure – extending the life of the battery

Reduce Condensation
Continued venting allows damp air, which could accumulate inside the battery housing, to be expelled with each warming-up recycle, helping reduce potential internal condensation

Performance Enhancement
Efficient gas release ensures the battery operates within its ideal temperature range, maximizing both output and longevity

Thermal Runaway Safety
PorVent® Pressure Release Vents are crucial when rising temperatures and increased gas production pose a risk to battery integrity

Critical Pressure Membrane Burst/ Valve Open
At this point, the vent's precisely designed valve opens for dual vents, and the membrane ruptures for burst vents when internal pressure reaches a critical threshold due to gas and pressure accumulation.

Rapid Pressure & Gas Release
The open valve or membrane rupture facilitates an unimpeded and rapid release of gases that helps avert potential hazards like fires or explosions

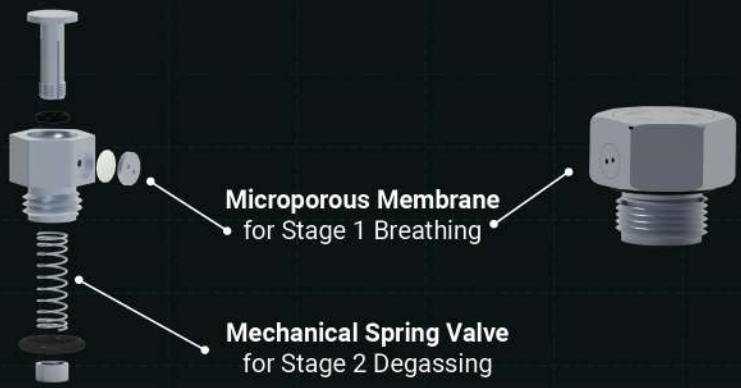
Scan to view videos of how PorVent® Pressure Release Vents function

SPECIALIZED PRVS FOR BATTERY PACKS

DUAL VENTS

PorVent® dual vents feature an advanced design, utilizing a microporous membrane for stage 1 venting in normal conditions and a spring-based mechanism to enable degassing in stage 2.

- Hybrid venting system with Membrane breathing and Mechanical degassing
- Early and precise opening pressure
- Quick degassing



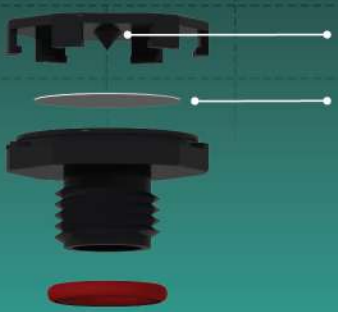
M12 x 1.5 6g

M20 x 1.5 6g

Material: Aluminium HE30

EARLY BURST SCREW-IN VENT

PorVent® early burst screw-in vents are equipped with a pin to assist with stage 2 degassing, ensuring the membrane ruptures at a specific pressure range.



M14 x 1.5 6g
Material: PA6

PORVENT® PRESSURE RELEASE VENTS

Screw-in Vents

PRODUCT	PRODUCT CODE	SPECIFICATION
	PVSV-M10*	Material : PA6 M10 x 1.5 6g
	PVSV-M12	Material : PA6 M12 x 1.5 6g
	PVSV-M12-SS	Material: SS316L M12 x 1.5 6g
	PVSV-M12-AL	Material : AL HE30 M12 x 1.5 6g
	PVSV-M14	Material: PA6 M14 x 1.5 6g
	PVSV-M20	Material : PA6 M20 x 1.5 6g
	PVSV-M40*	Material : PA6 M40 x 1.5 6g

Dual Vents

PRODUCT	PRODUCT CODE	SPECIFICATION
	PVSDV-M1202B-AL	Material : AL HE30 M12 x 1.5 6g
	PVSDV-M2002B-AL	Material : AL HE30 M20 x 1.5 6g

Snap-fit Vents

PRODUCT	PRODUCT CODE	SPECIFICATION
	PVSF-S	Material: PA6 Wall Thickness: 4mm
	PVSF-M	Material: PBT GF15 Wall Thickness: 3.5mm

Press-fit Vents

PRODUCT	PRODUCT CODE	SPECIFICATION
	PVPF-S	Cap Material: PP Inner Material: TPE

* Lock nut not available for this specification.

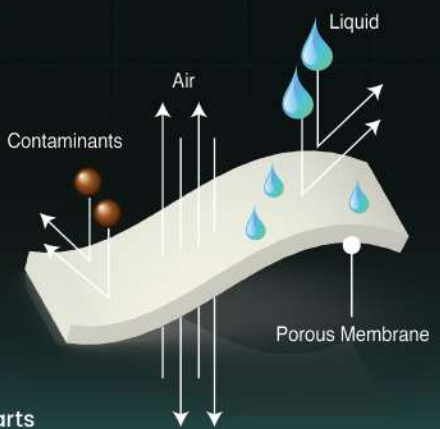
PorVent® offers a wide range of screw-in, snap-fit and press-fit vents with different sizes, shapes, materials, and membrane options to suit your specific needs. We can help you choose a venting component that fits your enclosure, material, environment, protection needs and required airflow.

CERTIFIED TO MEET INDUSTRY STANDARDS

Water & Dust ingress : IP66, 67 & 68#, IP6K9K
Flammability : UL 94 V-0, 5VA
Outdoor suitability : UL 746C f2
Thermal cycle : IEC 60068-2-14:2009
Salt Fog* : IEC 60068-2-11
Vibration : AIS 156 (Annexure 8A)
Mechanical Impact* : IK10

RoHS COMPLIANT EU Directive 2011/65/EU

#IP68 is a user defined test | *applicable to metal parts



SINTERED PTFE

Sintered PTFE (sPTFE) membranes are made from pure PTFE powder that is heated and pressed to create a porous structure. This process enhances the material's mechanical properties without altering its inherent characteristics.

- Hydrophobic and Grade 8 Oleophobic
- Thermal Stability: Withstands -40°C to 260°C
- Unique Property: Ability to flex under pressure
- Durability: Battle tested against harsh conditions
- High density porous structure
- 100% PTFE with no additives or supportive layers
- Ease of Use: Designed for straightforward handling and use

Best suited for: EV Battery Packs, Gearbox, Motors, Powertrain Components, Fluid Reservoirs

EXPANDED PTFE

Expanded PTFE (ePTFE) is a microporous form of PTFE that is created by expanding the PTFE material to form a porous structure. This process enhances its flexibility and breathability while maintaining the inherent properties of PTFE.

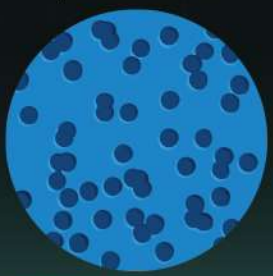
- Hydrophobic and >6 Grade Oleophobic
- Thermal Stability (PET Backed): Withstands -40°C to 180°
- Thermal Stability (PP Backed): Withstands -40°C to 100°C
- Lamination Options: Unlaminated, PP or PET
- Airflow: Optimized for breathability and efficiency
- Pressure Tolerance: Withstands high water entry pressure
- Weldability: Seamless integration into diverse systems

Best suited for: Automotive Power Electronics, Automotive Lights, Controllers, Power Distribution Units, Horns

PET TRACK ETCHED MEMBRANE

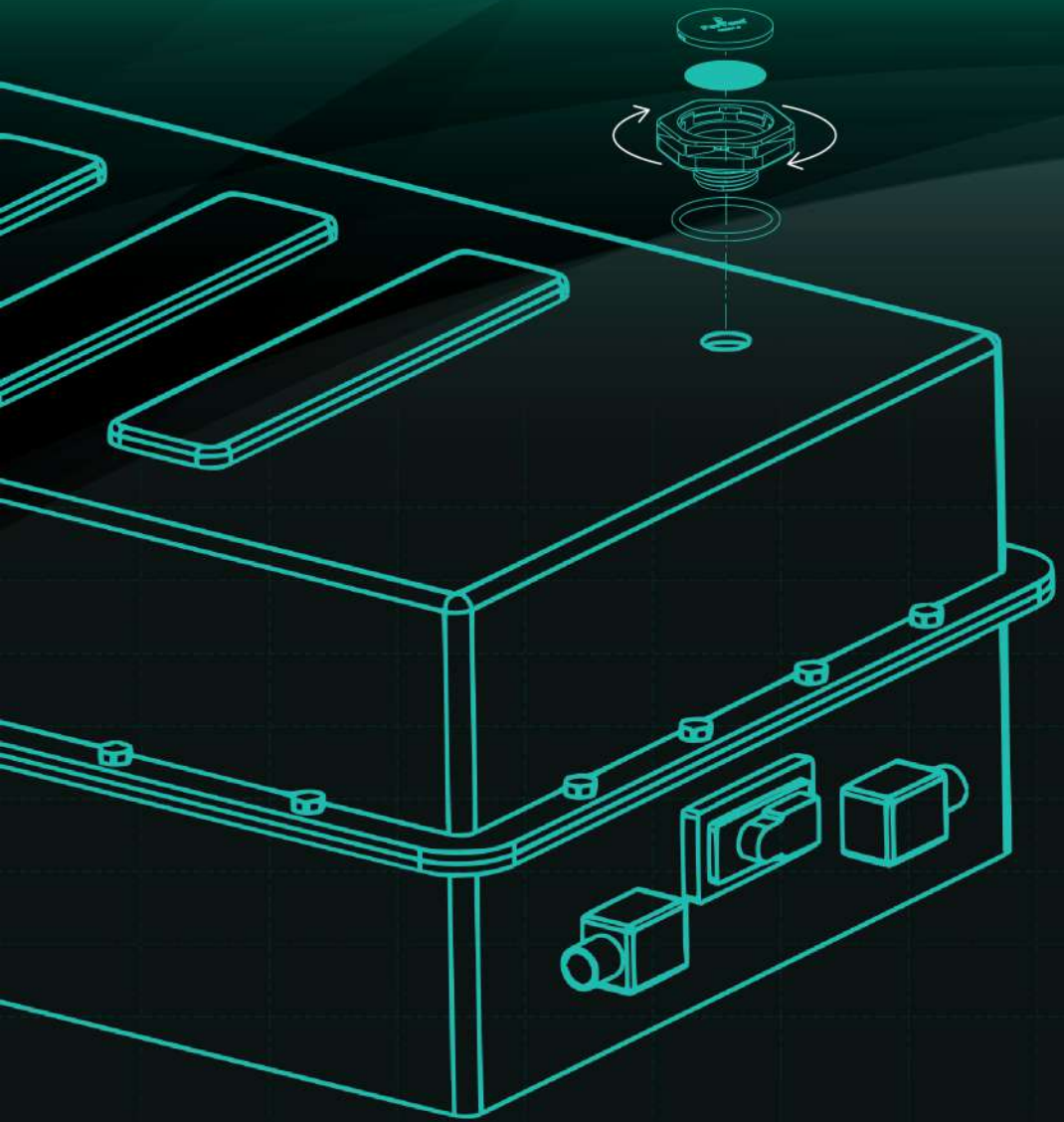
PFAS FREE

PET track-etched membranes are microporous membranes created by ion beaming process on a PET film with accelerated ions, creating tracks that are then chemically etched to form pores. This process results in a membrane with precisely defined pore sizes and densities.



- Hydrophobic
- Thermal Stability: Withstands -40°C to 160°C
- Airflow Tolerance Precision: Offers finest control over airflow range
- Environmental, Health & Safety : Does not contain Per- and polyfluoroalkyl substances (PFAS Free)

Best suited to: Automotive Lights, Sensors, Battery Packs, Fuel Cells



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