GORE® Automotive Vents
for weldable installation

RELIABLE PROTECTION FOR SENSITIVE ELECTRONICS IN DEMANDING OPERATING CONDITIONS

To survive harsh operating conditions, automotive control units, sensors, actuators and motors need reliably-sealed enclosures. GORE® Automotive Vents can improve component reliability and service life. They reduce pressure differentials that can stress seals and gaskets, while blocking contaminants such as water, chemicals, salts, dirt and mud. As a qualified automotive partner, Gore delivers advanced venting technologies in a variety of forms to fit any application — weldable vents, snap-fit vents and adhesive vents.

GORE® Automotive Vents for weldable installation

Weldable GORE® Vents save space, install easily and securely, and provide lasting hydrophobic and oleophobic protection for sensitive electronics. Two performance options, in multiple sizes, meet varied under-hood or under-carriage applications. Our engineering team can work with you to identify the optimal venting solution for your application.

- **High Airflow Series:** uses a multi-layer laminate construction to deliver our highest airflow and good chemical resistance in typical operating temperatures from -40 °C to 125 °C. Available as cut discs in bags.
- **High Temperature Series:** offers our highest temperature- and chemical-resistance, in our thinnest format. The 100% ePTFE construction withstands operating temperatures from -40 °C to 160 °C. Available as cut disks on rolls.

Sustained protection for electronics, with the attributes you asked for:

- **exceptional resistance** to temperatures, UV and chemicals, plus high roll-off
- **a choice of performance options** and sizes for varied application requirements
- **low installed height** for easy integration in very small or tightly-configured housings
- **excellent compatibility** with most plastic housing materials
- **easy installation and secure bond** to housing, using standard welding methods and tools

Together, improving life

High Airflow Series

Product Name (order number for samples)	**AVS 47**	**AVS 49**	**AVS 50**	**AVS 51**	**AVS 52**
Product Number (order number for series production)	AMP300056-00057	AMP300049-00080	AMP300125-00100	AMP300032-00117	AMP300066-00140
Product quantity/form	4,000 pcs./ESD-bag	2,000 pcs./ESD-bag	2,000 pcs./ESD-bag	5,000 pcs./ESD-bag	4,000 pcs./ESD-bag

Product Performance Characteristics

Minimum Water Entry Pressure (WEP) [1] at standard ambient temperature and pressure	≥ 60 kPa/30 sec
Minimum airflow at standard ambient temperature and pressure	≥ 16.3 l/h/cm² at 7 kPa (≥ 46 cm³/min/cm² at 1.22 kPa)
Typical airflow at standard ambient temperature and pressure	~ 32.5 l/h/cm² at 7 kPa (~ 94 cm³/min/cm² at 1.22 kPa)
Operating temperatures [2] (See Environmental Performance pp. 2 & 3)	T_{min} = - 40 °C T_{max} = + 125 °C
Membrane characteristic	Hydrophobic and oleophobic
Membrane construction	ePTFE-PET (multi-layer laminate construction)

Design & Dimensions

Vent thickness	0.48 ± 0.09 mm				
Vent diameter	5.70 mm	8.00 mm	10.00 mm	11.70 mm	14.00 mm

Environmental Performance

GORE® Automotive Vents for weldable installation have been extensively tested [2] according to the following performance standards. Please contact your Gore representative for more detailed information.

Thermal Shock Resistance Test

Vent durability under changing temperature conditions

METHOD: ISO 16750-4

TEST CONDITIONS:
- cycling temperatures between T_{min} and T_{max} within 30 seconds
- 45 minutes conditioning at each temperature
- 500 cycles

Ice-Water-Shock Resistance Test

Vent resistance to repeated thermal shock by submersion in ice water

METHOD: ISO 16750-4

TEST CONDITIONS:
- heating up to T_{max} of product for 60 minutes
- rapid submersion in 5% NaCl ice water for 5 minutes
- 20 cycles

Temperature Resistance Test

Vent durability under high and low temperature conditions

METHOD: ISO 16750-4

TEST CONDITIONS:
- T_{max} for 2,000 hours
- T_{min} for 1,000 hours

1. WEP (Water Entry Pressure) Resistance: WEP Resistance measures how much pressurized water a membrane can withstand before it leaks.
2. Tests were performed using GORE® Vents welded to PBT and PA6.6 plastic with 30% glass content.

High Temperature Series

Product Name (order number for samples)	**AVS 26**	**AVS 108**	**AVS 39**	**AVS 28**	**AVS 29**
Product Number (order number for series production)	AMP200024-00060	AMP200082-00080	AMP200069-00100	AMP200055-00120	AMP200023-00140
Product quantity/form	7,500 pcs./roll	6,000 pcs./roll	5,000 pcs./roll	4,000 pcs./roll	3,900 pcs./roll

Product Performance Characteristics

Minimum Water Entry Pressure (WEP) [1] at standard ambient temperature and pressure	≥ 60 kPa/30 sec
Minimum airflow at standard ambient temperature and pressure	≥ 4.5 l/h/cm² at 7 kPa (≥ 12.5 cm³/min/cm² at 1.22 kPa)
Typical airflow at standard ambient temperature and pressure	~ 9.6 l/h/cm² at 7 kPa (~ 28 cm³/min/cm² at 1.22 kPa)
Operating temperatures [2] (See Environmental Performance pp. 2 & 3)	T_{min} = -40 °C T_{max} = +160 °C
Membrane characteristic	Hydrophobic and oleophobic
Membrane construction	100% ePTFE construction

Design & Dimensions

Vent thickness	0.195 ± 0.06 mm				
Vent diameter	6.00 mm	8.00 mm	10.00 mm	12.00 mm	14.00 mm

Environmental Performance (continued)

Fluid Resistance Test

Vent protection against typical automotive chemical loads

METHOD: ISO 16750-5

Product performance depends on application method (i.e., cotton cloth, brush, spray, immersion, pouring) and the specific contaminant applied.

Climate Resistance Test

Vent durability in hot, humid environments

METHOD: DIN-EN-60068-2-67

TEST CONDITIONS:
- 85 °C temperature
- 85% relative humidity
- 1,000 hours

Salt Spray Resistance Test

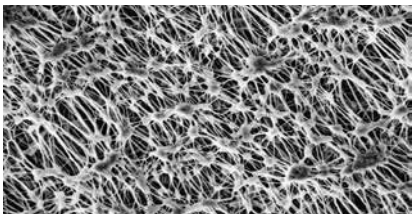
Vent resistance to salt, water and mist over an extended period

METHOD: ISO 16750-4

TEST CONDITIONS:
- according to IEC 60068-2-52
- severity level 5 (equals a four-week test period)

Why the GORE Membrane matters

Only GORE® Automotive Vents incorporate the performance benefits of the GORE Membrane. Made of expanded polytetrafluoroethylene (ePTFE), it's engineered with billions of pores. These pores are 700X larger than an air molecule, to ensure reliable airflow and pressure equalization. Yet at 20,000X smaller than a drop of water, these pores effectively block entry of liquids, dirt and debris.



The GORE Membrane
magnified 40,000 times

The GORE Membrane is:

- chemically inert
- non-shedding
- UV-resistant
- temperature-resistant
- hydrophobic and oleophobic

What GORE® Automotive Vents can offer you

GORE® Automotive Vents deliver innovative technology, backed by decades of research and testing. Our product portfolio has proven itself in the harshest environments: literally billions of our vents have been installed in automotive applications worldwide. Today, virtually every global OEM trusts GORE® Automotive Vents to extend the reliability and longevity of their exterior lighting, electronics and powertrain products and assemblies.

Our vents have been engineered with varied properties to fit in any automotive application. With technical support and testing centers in the US, Germany, Japan, Korea and China, our application engineers are easily accessible — and ready to work in close partnership with your design team, from product concept through manufacturing integration.

Contact Us

To discuss options and solutions for your newest application, call your local Gore representative or send your inquiry from our website: **gore.com/autovents**

INTERNATIONAL CONTACTS

Australia +61 2 9473 6800
China +86 21 5172 8299
EMEA +49 89 4612 2211
India +91 22 6768 7000
Japan +81 3 6746 2570
Korea +82 2 393 3411
Mexico +52 81 8288 1281
Singapore +65 6733 2882
South America +55 11 5502 7800
Taiwan +886 2 2173 7799
USA +1 410 506 7812

W. L. Gore & Associates GmbH
Hermann-Oberth-Str. 26, 85640 Putzbrunn, Germany
T +49 89 4612 2211 **F** +49 89 4612 2302 **E** ipd-deutschland@wlgore.com
gore.com/autovents

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