



## Vamac<sup>®</sup> HVG

## Ethylene Methylacrylate Elastomer

Vamac® HVG is an unfilled gum ethylene/acrylic elastomer similar to Vamac® G but offering higher compound viscosity.

The higher viscosity of compounds made with Vamac® HVG results in improved green strength and related processing advantages, such as:

- Improved collapse resistance of extrudates;
- Enhanced preform dimensional stability; and
- Improved moldability through elimination of trapped air.

Compounds of Vamac® HVG are often selected for applications such as compression molded goods, highly plasticized compounds, and extruded tubing and hose.

Vamac® HVG contains a small amount of processing aid and has a mild acrylic odor.

Bale size is nominally: 560 x 370 x 165 mm

#### Compound and Vulcanizate Properties

Compounds of Vamac® are formulated and processed by customers to meet their own specific performance requirements. Many of the highest-performing compounds are vulcanizates of Vamac® are proprietary, and cannot be published. We have independently formulated a wide variety of Vamac® compounds for its own short- and long-term properties testing programs.

A typical compound of Vamac® HVG is reviewed below. Vulcanizate performance test data are given to help endusers evaluate the potential fitness of similar compounds for their own applications.

#### Sample Compound, Vamac® HVG

Ingredients	Parts
Vamac® HVG	100
Antioxidant: Naugard® 445	2
Release agent: Stearic acid	1.5
Release agent: Vanfre® VAM (alkylphosphate)	1
Release agent: Armeen® 18D (octadecylamine)	0.5
SRF black (N774)	80
Curative: Diak <sup>TM</sup> No. 1 (hexamethylene diamine carbamate)	1.5
Coaccelerator: DOTG (guanidine coagent)	4
Plasticizer: TP759	10

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#### **Product information**

Resin Identification	AEM	ISO 1043
Part Marking Code	>AEM<	ISO 11469
Colour	Clear <sup>[1]</sup>	
Viscosity, Mooney, ML 1'+4' at 100°C	26	ISO 289-1-2
Volatiles	≤0.4 %	EN 1400 / EN 14350-2

Maximum Service Temperature 175 °C

[1]: clear to light yellow translucent

### Rheological properties

Viscosity, Mooney, compound, ML 1'+4' at 100°C	57		ISO 289-1-2
Scorch, Mooney viscosity, MS at 121°C	≥26		ISO 289-1-2
Scorch, time to 10 unit rise, MS at 121°C	8	min	ISO 289-1-2
Moving Die Rheometer at 180°C, torque	110 - 2600	Nmm	ISO 6502
Moving Die Rheometer at 180°C, t(50)	2.2	min	ISO 6502
Moving Die Rheometer at 180°C, t(90)	7	min	ISO 6502

#### **Cure conditions**

Cure time	5	min
Cure temperature	175	°C
Post cure time	4	h
Post cure temperature	175	°C

### Typical mechanical properties

Tensile stress at 100% strain	6	MPa	ISO 527-1/-2
Tensile stress at break	16	MPa	ISO 527-1/-2
Tensile strain at break	260	%	ISO 527-1/-2
Shore A hardness	63		ASTM D 2240
Compression set, 150°C, 70h	16	%	ISO 815

### Physical/Other properties

Density 1040 kg/m<sup>3</sup> ISO 1183

#### Characteristics

Processing Injection Moulding, Extrusion, Transfer Moulding, Compression moulding

Delivery form Bale

Special characteristics Heat stabilised or stable to heat

#### Additional information

Profile extrusion **Handling Precautions** 

> Because Vamac® HVG contains small amounts of residual methylacrylate monomer, adequate ventilation should be provided during mixing and processing to prevent worker exposure to methylacrylate vapor. Additional information may be obtained in the Material Safety Data Sheet (MSDS), and our bulletin Safe

Handling and Processing of Vamac®.

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#### Chemical Media Resistance

#### Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- ✓ SAE 10W40 multigrade motor oil, 130°C
- ✓ SAE 80/90 hypoid-gear oil, 130°C
- ✓ Insulating Oil, 23°C
- ✓ Motor oil OS206 304 Ref.Eng.Oil, ISP, 135°C
- ✓ Automatic hypoid-gear oil Shell Donax TX, 135°C
- ✓ Hydraulic oil Pentosin CHF 202, 125°C

### Standard Fuels

- ➤ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ➤ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- X Diesel fuel (pref. ISO 1817 Liquid F), >90°C
- ➤ Diesel EN 590, 100°C

#### Symbols used:

✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

🗙 not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, pr

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