Celanese
The chemistry inside innovation™

Vamac® GLS

Ethylene Methylacrylate Elastomer

Vamac® GLS is a terpolymer of ethylene, methyl acrylate, and a cure site monomer cured using a diamine-based vulcanization system.

Compared with Vamac® G, Vamac® GLS offers significantly improved resistance to oil swell and chemicals such as diesel fuel. Vamac® GLS elastomer contains a small amount of processing aid. It has a mild acrylic odor. Storage stability is excellent.

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® GLS 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® GLS

Ingredients	Parts
Vamac® GLS	100
Antioxidant: Naugard® 445	2
Release agent: Stearic acid	1.5
Release agent: Vanfre® VAM (alkylphosphate)	1
Release agent: Armeen® 18 (octadecylamine)	0.5
FEF black (N550)	60
Curative: Diak™ No. 1 (hexamethylene diamine carbamate)	1.5
Coaccelerator: DOTG (guanidine coagent)	4
Plasticizer: TP-759	10
Total Parts	180.5

Product information

Resin Identification	AEM		ISO 1043
Part Marking Code	>AEM<		ISO 11469
Colour	Clear[1]		
Viscosity, Mooney, ML 1'+4' at 100°C	18.5		ISO 289-1-2
Volatiles	≤0.4	%	EN 1400 / EN 14350-2
Maximum Service Temperature	175	°C	

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[1]: clear to light yellow translucent

Rheological properties

Viscosity, Mooney, compound, ML 1'+4' at 100°C	40		ISO 289-1-2
Scorch, Mooney viscosity, MS at 121°C	≥15		ISO 289-1-2
Scorch, time to 10 unit rise, MS at 121°C	10	min	ISO 289-1-2

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	6.4	MPa	ISO 527-1/-2
Tensile stress at break	16	MPa	ISO 527-1/-2
Tensile strain at break	270	%	ISO 527-1/-2
Shore A hardness	68		ASTM D 2240
Compression set, 150°C, 70h	20	%	ISO 815
Compression set, 150°C, 168h	28	%	ASTM D 395B
Compression set, 180°C, 168h	24	%	ASTM D 395B
Tear strength, parallel	34	kN/m	ISO 34-1

Thermal properties

Glass transition temperature, 10°C/min	-30	°C	ASTM D 3418

Physical/Other properties

Density	1030	kg/m^3	ISO 1183

Characteristics

Processing	Injection Moulding, Extrusion, Transfer Moulding, Compression moulding
Delivery form	Bale
Special characteristics	Heat stabilised or stable to heat, Low Warpage

Additional information

Compression molding

Handling Precautions

Because Vamac® GLS contains small amounts of residual methyl acrylate monomer, adequate ventilation should be provided during storage and processing to prevent worker exposure to methyl acrylate vapor. Additional information may be found in the Vamac® GLS product Safety Data Sheet (SDS), 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
- ✔ 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).