



Vamac[®] Ultra DX for Injection Molding

Ethylene Methylacrylate Elastomer

Vamac® ethylene acrylic elastomer, introduced in 1975, has been successfully used for many years in demanding automotive applications, where excellent resistance to heat, engine and transmission fluids or Blow-By is required. our latest manufacturing technology allows production of enhanced AEM grades that have significantly improved compared to the existing standard Vamac® elastomers. These grades, designated and sold as Vamac® Ultra, provide a step-change improvement in processability, performance and customer value for targeted applications, including for peroxide cure E/MA dipolymer grade with Vamac® Ultra DX (formerly VMX2122).

Bale size is nominally: 560 x 370 x 165 mm

Major Performance Properties and Applications

Higher viscosity is the major difference between the standard AEM grades and the Vamac® Ultra family of polymers. Four Terpolymers of the Ultra grades, cured by Diamine curatives, are now commercial. Vamac® Ultra DX is a high viscosity version of Vamac® DP. It provides improved mold release, and is comparable to Vamac® Ultra Terpolymers.

Increased green strength of compounds helps to avoid collapse during extrusion processes, and may help in applying reinforcement layers without cutting the inner tube by filaments. The optimized polymer structure ensures gains in physical properties, resulting in improved performance of rubber parts such as cables, seals, gaskets or extruded hoses.

Best physical properties of Vamac® Ultra DX are obtained in rubber parts having a hardness range between 50 and 90 Shore A.

Compound and Vulcanisate 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® Ultra DX for injection moulding applications 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® Ultra DX for Injection Moulding applications

Ingredients	Parts
Vamac® Ultra DX	100
Antioxidant: Naugard® 445	1
Stearic Acid Reagent (95%)	0.5
Vanfre® VAM	1.25
Spheron® SOA (N 550)	50
Luperox® DC 40 P	8
Rubber chem HVA-2	2
Total Parts	162.75

Printed: 2025-05-28



Vamac[®] Ultra DX for Injection Molding

Ethylene Methylacrylate Elastomer

Vamac® Terpolymers are usually the material of choice for parts that are produced in Injection, Transfer or Compression Moulding. In the past, dipolymers were rarely chosen due to the stickiness of peroxide cured AEM compounds. Vamac® Ultra DX showed excellent properties in demoulding in lab trials, reaching performance levels comparable to Vamac® Ultra IP.

The procedure used in our labs to determine mould release uses a horizontal injection moulding machine, and a mold with 40 cavities of O-rings, Size AS-214. Cold runners are used, and central single point injection. The mold is cleaned according to the same procedure before each new compound is tested. Mould temperature has been set at 185°C. Cure time has been set at 30 seconds, where blister-free O-rings have been obtained. After mould opening, a brush is removing most of the O-rings from the mould. The number of O-rings sticking to the mould after brushing is counted.

Product information

Colour	Clear	
Viscosity, Mooney, ML 1'+4' at 100°	C 28	ISO 289-1-2
Volatiles	≤0.4 %	EN 1400 / EN 14350-2
Maximum Service Temperature	175 °C	
Cure conditions		
Cure time	0.5 min	
Cure temperature	185 °C	
Characteristics		
Processing	Injection Moulding, Transfer Moulding	
Delivery form	Bale	
Special characteristics	Heat stabilised or stable to heat	

Additional information

Handling Precautions

Because Vamac® Ultra DX 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® Ultra DX Safety Data Sheet (SDS), and our bulletin, Safe Handling and Processing of Vamac® (VME-A10628), available on our website.

Mixing

Vamac® Ultra DX has higher viscosity than Vamac® DP which permits better and faster dispersion of fillers and other compounding ingredients. Due to the general good scorch safety of peroxide cured compounds, changes in mixing cycle due to higher viscosity are not considered necessary.





Vamac[®] Ultra DX for Injection Molding

Ethylene Methylacrylate Elastomer

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

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).

X 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).

Printed: 2025-05-28

Page: 3 of 3

Revised: 2021-12-15 Source: Celanese Materials Database

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, processing conditions and environmental exposure. Other than those product 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 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 the lowest that texist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and achere to the manufact

© 2025 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.