Technical Data Sheet

ENGAGE™ 8003 REN Polyolefin Elastomer

Overview

ENGAGE™ 8003 REN Polyolefin Elastomer is an ethylene-octene copolymer that has excellent flow characteristics and performs well in a wide variety of general purpose thermoplastic elastomer applications.

ENGAGE™ 8003 REN Polyolefin Elastomer provides superb impact properties in blends with polypropylene (PP) and polyethylene (PE). It also provides high filler loading capability and outstanding peroxide cure capability. When cross-linked by peroxide, silane, or irradiation, it gives exceptional heat aging, compression set, and weather resistance properties, and may be used to produce high performance electrical insulation and jacketing.

Sustainability Attribute:

Ecolibrium™ Bio-based materials by DOW

Main Characteristics:

- Pellet form
- Excellent flow characteristics
- Improved impact in polypropylene and polyethylene
- High filler loading
- Peroxide, silane, and radiation curable
- Exceptional heat aging, compression set, and weather resistance

Applications:

- General purpose thermoplastic elastomers
- Wire and cable
- Impact modification

Complies with:

- U.S. FDA 21 CFR 177.1520(c)3.2c
- EU, No 10/2011
- ISCC PLUS certification for renewable-based plastics.

Consult the regulations for complete details.

Physical Properties

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Density	0.885	g/cm^3	0.885	g/cm^3	ASTM D792
Melt Index (190°C/2.16 kg)	1.0	g/10 min	1.0	g/10 min	ASTM D1238
Mooney Viscosity (ML 1+4, 250°F (121°C))	22	MU	22	MU	ASTM D1646
Mechanical					
Tensile Modulus - 100% Secant[2]					ASTM D638
(Compression Molded)	696	psi	4.80	MPa	
Tensile Strength[2]					ASTM D638
(Break, Compression Molded)	2640	psi	18.2	MPa	
Tensile Elongation[2]					ASTM D638
Break, Compression Molded	640	%	640	%	
Flexural Modulus					ASTM D790
1% Secant : Compression Molded	4890	psi	33.7	MPa	
2% Secant : Compression Molded	4730	psi	32.6	MPa	
Elastomers					
Tear Strength[3]	348	lbf/in	61.0	kN/m	ASTM D624
Hardness					
Durometer Hardness					ASTM D2240
Shore A, Compression Molded	84		84		
Shore D, Compression Molded	31		31		
Thermal					
Glass Transition Temperature	-50.8	°F	-46.0	°C	Dow Method
Vicat Softening Temperature	145	°F	63.0	°C	ASTM D1525
Melting Temperature (DSC)[4]	171	°F	77.0	°C	Dow Method
Peak Crystallization Temperature (DSC)	140	°F	60.0	°C	Dow Method

1. ASTM: American Society for Testing and Materials
2. 20 in/min (510 mm/min)
3. Die C
4. 10°C/min

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products — from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Medical Applications Policy

Any and all medical application use of Dow materials, whether a device, a component, or any type of primary or secondary packaging of a medically related object or substance, needs to be reviewed and approved by Dow before any Dow material can be tested in such application.

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted. Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. **DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.**

For further information contact your Dow sales or technical representative to request a Medical Application Review Request Form.

Additional details of Dow's Medical Applications Policy are available at:
https://www.dow.com/en-us/support/product-safety.html

Tobacco and Marijuana Policy

Dow does not support or intend for its products to be used, directly or indirectly, in the production of tobacco, the manufacture of tobacco products, the manufacture and use of electronic cigarettes (including vaping devices), the production of marijuana, or the manufacture of marijuana products intended for human consumption, where the Dow product (or its residues) may be present in the finished product or be alleged to facilitate the delivery of nicotine, other tobacco components, marijuana, or marijuana components.

Harmful Applications Policy

Dow does not intend for its products to be used in applications specifically intended to harm humans.

dow.com

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where Dow is represented. The claims made may not have been approved for use in all countries. Dow assumes no obligation or liability for the information in this document. References to "Dow" or the "Company" mean the Dow legal entity selling the products to Customer unless otherwise expressly noted. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED**.

NOTICE: If products are described as “experimental” or “developmental”: (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Dow to change specifications and/or discontinue production; and (4) although Dow may from time to time provide samples of such products, Dow is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

NOTICE: This data is based on information Dow believes to be reliable, as demonstrated in controlled laboratory testing. They are offered in good faith, but without guarantee, as conditions and method of use of Dow products are beyond Dow’s control. Dow recommends that the prospective user determine the suitability of these materials and suggestions before adopting them on a commercial scale.

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability for the accuracy and completeness of such information.

For additional information, not covered by the content of this document, contact us via our web site http://www.dow.com/products_services/.

This document is intended for use within Asia Pacific, Europe, Latin America, North America.