



# ENGAGE™ 8003

## Polyolefin Elastomer

**Overview** ENGAGE™ 8003 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 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.

**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

**Complies with:**

- U.S. FDA 21 CFR 177.1520(c)3.2c
- EU, No 10/2011
- Japan Hygienic Olefin and Styrene Plastics Association
- U.S. FDA DMF

Consult the regulations for complete details.

**Applications:**

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

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.885 g/cm <sup>3</sup>	0.885 g/cm <sup>3</sup>	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	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus - 100% Secant <sup>1</sup> (Compression Molded)	696 psi	4.80 MPa	ASTM D638
Tensile Strength <sup>1</sup> (Break, Compression Molded)	2640 psi	18.2 MPa	ASTM D638
Tensile Elongation <sup>1</sup> Break, Compression Molded	640 %	640 %	ASTM D638
Flexural Modulus			ASTM D790
1% Secant : Compression Molded	4890 psi	33.7 MPa	
2% Secant : Compression Molded	4730 psi	32.6 MPa	
Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tear Strength <sup>2</sup>	348 lbf/in	61.0 kN/m	ASTM D624
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness			ASTM D2240
Shore A, Compression Molded	84	84	
Shore D, Compression Molded	31	31	

<b>Thermal</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Glass Transition Temperature	-50.8 °F	-46.0 °C	Dow Method
Vicat Softening Temperature	145 °F	63.0 °C	ASTM D1525
Melting Temperature (DSC) <sup>3</sup>	171 °F	77.0 °C	Dow Method
Peak Crystallization Temperature (DSC)	140 °F	60.0 °C	Dow Method

### Notes

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

<sup>1</sup> 20 in/min (510 mm/min)

<sup>2</sup> Die C

<sup>3</sup> 10°C/min

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