



# ENGAGE™ 8180

## Polyolefin Elastomer

### Overview

ENGAGE™ 8180 Polyolefin Elastomer is a lower density, high performance ethylene-octene copolymer that has excellent flow characteristics and provides superb impact properties in blends with polypropylene (PP) and polyethylene (PE). It is widely used in TPO applications where excellent flow temperature impact properties are desired.

ENGAGE 8180 also provides high filler loading capability and excellent electrical properties. When cross-linked by peroxide, silane, or irradiation, it gives exceptional heat aging, compression set, and weather resistance properties.

#### 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 when cured

#### Applications:

- General purpose thermoplastic elastomers
- Impact modification
- Thermoplastic olefins (TPO)
- Wire and cable

#### Complies with:

- EU, No 10/2011
- U.S. FDA 177.1520(c)3.2c
- U.S. FDA DMF

Consult the regulations for complete details.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.863 g/cm <sup>3</sup>	0.863 g/cm <sup>3</sup>	ASTM D792
Melt Index (190°C/2.16 kg)	0.50 g/10 min	0.50 g/10 min	ASTM D1238
Mooney Viscosity (ML 1+4, 250°F (121°C))	37 MU	37 MU	ASTM D1646
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus - 100% Secant <sup>1</sup> (Compression Molded)	276 psi	1.90 MPa	ASTM D638
Tensile Strength <sup>1</sup> (Break, Compression Molded)	914 psi	6.30 MPa	ASTM D638
Tensile Elongation <sup>1</sup> Break, Compression Molded	910 %	910 %	ASTM D638
Flexural Modulus			ASTM D790
1% Secant : Compression Molded	1230 psi	8.50 MPa	
2% Secant : Compression Molded	1120 psi	7.70 MPa	
Elastomers	Nominal Value (English)	Nominal Value (SI)	Test Method
Tear Strength <sup>2</sup>	183 lbf/in	32.0 kN/m	ASTM D624
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness			ASTM D2240
Shore A, 1 sec, Compression Molded	63	63	
Shore D, 1 sec, Compression Molded	16	16	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Glass Transition Temperature	-67.0 °F	-55.0 °C	Dow Method
Vicat Softening Temperature	106 °F	41.0 °C	ASTM D1525

<b>Thermal</b>	<b>Nominal Value (English)</b>	<b>Nominal Value (SI)</b>	<b>Test Method</b>
Melting Temperature (DSC) <sup>3</sup>	117 °F	47.0 °C	Dow Method
Peak Crystallization Temperature (DSC)	89.6 °F	32.0 °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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Published: 2000-11-30

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