



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 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 | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Tensile Modulus - 100% Secant ¹ (Compression Molded) | 696 psi | 4.80 MPa | ASTM D638 |
| Tensile Strength ¹ (Break, Compression Molded) | 2640 psi | 18.2 MPa | ASTM D638 |
| Tensile Elongation ¹ 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 ² | 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 | |
| Thermal | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Glass Transition Temperature | -50.8 °F | -46.0 °C | Dow Method |
| Vicat Softening Temperature | 145 °F | 63.0 °C | ASTM D1525 |

| Thermal | Nominal Value (English) | Nominal Value (SI) | Test Method |
|--|--------------------------------|---------------------------|--------------------|
| Melting Temperature (DSC) ³ | 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.

¹ 20 in/min (510 mm/min)

² Die C

³ 10°C/min

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