ENGAGE[™] 8180

Polyolefin Elastomer

The Dow Chemical Company

Message:

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.

General Information					
Agency Ratings	DMF Unspecified Rating				
	EU No 10/2011				
	FDA 21 CFR 177.1520(c) 3.2c				
Forms	Pellets				
Physical	Nominal Value	Unit	Test Method		

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.863	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16			
kg)	0.50	g/10 min	ASTM D1238
Mooney Viscosity (ML 1+4, 121°C)	37	MU	ASTM D1646
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness			ASTM D2240
Shore A, 1 sec, Compression Molded	63		
Shore D, 1 sec, Compression Molded	16		
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus - 100% Secant ¹			
(Compression Molded)	1.90	MPa	ASTM D638
Tensile Strength ² (Break, Compression			
Molded)	6.30	MPa	ASTM D638

Tensile Elongation 3 (Break, Compression Molded)910%ASTM D638Flexural ModulusASTM D7901% Secant : Compression Molded8.50MPa2% Secant : Compression Molded7.70MPaElastomersNominal ValueUnitTest MethodTear Strength 432.0kN/mASTM D624ThermalNominal ValueUnitTest MethodGlass Transition Temperature-55.0°CInternal MethodVicat Softening Temperature (DSC) 547.0°CASTM D1525Mething Temperature (DSC) 532.0°CInternal MethodNominal Value°CInternal MethodMethodVicat Softening Temperature (DSC) 547.0°CInternal MethodPeak Crystallization Temperature (DSC)32.0°CInternal MethodPack Crystallization Temperature (DSC)510 mm/minInternal Method1.S10 mm/minInternal MethodS10 mm/min2.S10 mm/minInternal MethodInternal Method3.S10 mm/minInternal MethodInternal Method4.Din mm/minInternal MethodInternal Method5.Nom/minInternal MethodInternal Method5.Dir MrminInternal Meth				
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2% Secant : Compression Molded7.70MPaElastomersNominal ValueUnitTest MethodTear Strength 432.0kN/mASTM D624ThermalNominal ValueUnitTest MethodGlass Transition Temperature-55.0°CInternal MethodVicat Softening Temperature41.0°CASTM D1525Melting Temperature (DSC) 547.0°CInternal MethodPeak Crystallization Temperature (DSC)32.0°CInternal MethodNOTE110 mm/min''''1.510 mm/min''''3.510 mm/min''''4.Die C''''				
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Tear Strength 432.0kN/mASTM D624ThermalNominal ValueUnitTest MethodGlass Transition Temperature-55.0°CInternal MethodVicat Softening Temperature41.0°CASTM D1525Melting Temperature (DSC) 547.0°CInternal MethodPeak Crystallization Temperature (DSC)32.0°CInternal MethodNOTE1.510 mm/min::1.510 mm/min:::3.510 mm/min:::4.Die C:::	2% Secant : Compression Molded	7.70	MPa	
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4. Die C	2.	510 mm/min		
	3.	510 mm/min		
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	5.	10°C/min		

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