Dow DOWLEX™ IP-51 High Density Polyethylene Resin (HDPE)

Category : Polymer , Thermoplastic , Polyethylene (PE) , HDPE

Material Notes:

DOWLEX™ IP-51 is an Improved Processing high density resin designed to offer excellent process-ability and impact performance. This resin was designed by optimization of the breadth, shape and peak molecular weight, with a slightly lower density for increased impact strength. Information provided by Dow

Order this product through the following link:
http://www.lookpolymers.com/polymer_Dow-DOWLEX-IP-51-High-Density-Polyethylene-Resin-HDPE.php

Physical Properties	Metric	English	Comments
Density	0.947 g/cc	0.0342 lb/in³	ASTM D792
Melt Index of Compound	50 g/10 min @Load 2.16 kg, Temperature 190 °C	50 g/10 min @Load 4.76 lb, Temperature 374 °F	ASTM D1238

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	48	48	Molded and tested in accordance with ASTM D4976; ASTM D2240
Tensile Strength at Break	22.1 MPa	3200 psi	Molded and tested in accordance with ASTM D4976; ASTM D638
Tensile Strength, Yield	23.4 MPa	3400 psi	Molded and tested in accordance with ASTM D4976; ASTM D638
Elongation at Break	10 %	10 %	Molded and tested in accordance with ASTM D4976; ASTM D638
Elongation at Yield	4.0 %	4.0 %	Molded and tested in accordance with ASTM D4976; ASTM D638
Flexural Modulus	0.800 GPa	116 ksi	2% Secant; Molded and tested in accordance with ASTM D4976; ASTM D790 B
Tensile Impact Strength	42.0 kJ/m²	20.0 ft-lb/in²	Molded and tested in accordance with ASTM D4976; ASTM D1822, Type S

Thermal Properties	Metric	English	Comments
Melting Point	127 °C	261 °F	Dow Method (DSC)
Crystallization Temperature	115 °C	239 °F	Dow Method (DSC)
Deflection Temperature at 0.46 MPa (66 psi)	60.0 °C	140 °F	Molded and tested in accordance with ASTM D4976; ASTM D648
Vicat Softening Point	120 °C	248 °F	ASTM D1525
Brittleness Temperature			Molded and tested in accordance with

Thermal Properties	Metric	English	Comments
	-72.8 °C	-99.0 °F	ASTM D4976; ASTM D746

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