

Lubrizol Isoplast® 101 Engineering Thermoplastic Polyurethane Resin

Category : Polymer , Thermoplastic , Polyurethane, TP

Material Notes:

ISOPLAST® 101 is an engineering thermoplastic polyurethane resin. Available in Americas, Europe, Middle East, Africa, India and Asia. Data provided by Lubrizol. Lubrizol acquired the Isoplast product line from Dow in 2009.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lubrizol-Isoplast-101-Engineering-Thermoplastic-Polyurethane-Resin.php

Physical Properties	Metric	English	Comments
Density	1.19 g/cc	0.0430 lb/in ³	ASTM D792
Water Absorption	0.17 %	0.17 %	24 hrs at 23°C; ASTM D570
Linear Mold Shrinkage	0.0040 - 0.0060 cm/cm	0.0040 - 0.0060 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	116	116	ASTM D785
Tensile Strength, Ultimate	48.0 MPa	6960 psi	ASTM D638
Tensile Strength, Yield	48.0 MPa	6960 psi	ASTM D638
Elongation at Break	160 %	160 %	ASTM D638
Elongation at Yield	6.0 %	6.0 %	ASTM D638
Tensile Modulus	1.50 GPa	218 ksi	ASTM D638
Flexural Strength	68.0 MPa	9860 psi	ASTM D790
Flexural Modulus	1.80 GPa	261 ksi	ASTM D790
Izod Impact, Unnotched	1.60 J/cm	3.00 ft-lb/in	ASTM D256
	@Thickness 3.20 mm, Temperature -40.0 °C	@Thickness 0.126 in, Temperature -40.0 °F	
	11.0 J/cm	20.6 ft-lb/in	ASTM D256
	@Thickness 6.40 mm, Temperature 23.0 °C	@Thickness 0.252 in, Temperature 73.4 °F	
	12.8 J/cm	24.0 ft-lb/in	ASTM D256
Dart Drop, Total Energy	68.0 J	50.2 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	68.0 J Metric	50.2 ft-lb English	Comments ASTM D1763
	@Temperature -29.0 °C	@Temperature -20.2 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	81.0 µm/m-°C @Temperature 20.0 °C	45.0 µin/in-°F @Temperature 68.0 °F	ASTM D1525
Deflection Temperature at 0.46 MPa (66 psi)	71.0 °C	160 °F	Unannealed; ASTM D648
	82.0 °C	180 °F	Annealed; ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	60.0 °C	140 °F	Unannealed; ASTM D648
	77.0 °C	171 °F	Annealed; ASTM D648
Vicat Softening Point	89.0 °C	192 °F	ASTM D696

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	205 °C	401 °F	
Middle Barrel Temperature	220 °C	428 °F	
Front Barrel Temperature	220 °C	428 °F	
Nozzle Temperature	230 °C	446 °F	
Melt Temperature	220 - 245 °C	428 - 473 °F	
Drying Temperature	85.0 - 90.0 °C	185 - 194 °F	

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