

Hexcel® HexFlow® RTM651 One-part Modified BMI Resin

Category : Polymer , Thermoset , Epoxy , Epoxy Cure Resin

Material Notes:

HexFlow® RTM651 is a one-component modified bismaleimide for resin transfer molding (RTM). Upon heating to 212-248°F, the resin will become a low viscosity homogeneous liquid that has a long pot-life and processes easily. Postcure can be carried out free standing.

HexFlow® RTM651 is a premixed bismaleimide system for service temperature to 450°F. Features: Monocomponent system; High glass transition temperature (545°F); Excellent elevated temperature properties; Easy to process; Free standing postcure; Short, simple cure cycles.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hexcel-HexFlow-RTM651-One-part-Modified-BMI-Resin.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.25 g/cc	1.25 g/cc	
Viscosity	>= 15 cP	>= 15 cP	
	@Temperature 156 °C	@Temperature 313 °F	
	50 cP	50 cP	0 Hour
	@Temperature 120 °C	@Temperature 248 °F	
	67 cP	67 cP	1 Hour
	@Temperature 120 °C	@Temperature 248 °F	
	80 cP	80 cP	0 Hour
	@Temperature 110 °C	@Temperature 230 °F	
	120 cP	120 cP	1 Hour
	@Temperature 110 °C	@Temperature 230 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	72.4 MPa	10500 psi	Resin property; RT; Dry
	286 MPa	41500 psi	Laminate property; Open Hole Tension; Conditioning: 158°F 85% RH sat
	@Temperature 175 °C	@Temperature 347 °F	
	288 MPa	41800 psi	Laminate property; Open Hole Tension; Conditioning: 158°F 85% RH sat
	@Temperature 190 °C	@Temperature 374 °F	
	291 MPa	42200 psi	Laminate property; Open Hole Tension; Conditioning: 14 days Water 158°F
	@Temperature 175 °C	@Temperature 347 °F	
	298 MPa	43200 psi	Laminate property; Open Hole Tension; Conditioning: 14 days Water

Mechanical Properties	@Temperature 190 °C Metric	@Temperature 374 °F English	158°F Comments
	789.4 MPa	114500 psi	Laminate property; Dry
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Elongation at Break	2.19 %	2.19 %	Resin property; RT; Dry
Tensile Modulus	4.07 GPa	591 ksi	Resin property; RT; Dry
	62.1 GPa	9000 ksi	Laminate property; Dry
	@Temperature 73.0 °C	@Temperature 163 °F	
Flexural Yield Strength	141 MPa	20400 psi	Resin property; RT; Dry
	109 MPa	15800 psi	Resin property; Dry
	@Temperature 177 °C	@Temperature 350 °F	
Flexural Modulus	4.22 GPa	612 ksi	Resin property; RT; Dry
	3.14 GPa	455 ksi	Resin property; Dry
	@Temperature 177 °C	@Temperature 350 °F	
Fracture Toughness	1.05 MPa-m ^{1/2}	0.956 ksi-in ^{1/2}	
Shear Modulus	2.96 GPa	430 ksi	Laminate property; In Plane Shear; Conditioning: 14 days Water 158°F
	@Temperature 175 °C	@Temperature 347 °F	
	3.24 GPa	470 ksi	Laminate property; In Plane Shear; Conditioning: 158°F 85% RH sat
	@Temperature 175 °C	@Temperature 347 °F	
	4.83 GPa	700 ksi	Laminate property; In Plane Shear; Conditioning: Dry
	@Temperature 22.8 °C	@Temperature 73.0 °F	
Shear Strength	33.1 MPa	4800 psi	Laminate property; In Line Shear; Conditioning: 14 days Water 158°F
	@Temperature 175 °C	@Temperature 347 °F	
	37.2 MPa	5400 psi	Laminate property; In Line Shear; Conditioning: 158°F 85% RH sat
	@Temperature 175 °C	@Temperature 347 °F	
	47.6 MPa	6900 psi	Laminate property; In Plane Shear; Conditioning: Dry
	@Temperature 22.8 °C	@Temperature 73.0 °F	
	57.9 MPa	8400 psi	Laminate property; In Line Shear; Conditioning: Dry
	@Temperature 22.8 °C	@Temperature 73.0 °F	
	64.8 MPa	9400 psi	Laminate property; In Plane Shear; Conditioning: 14 days Water 158°F
	@Temperature 175 °C	@Temperature 347 °F	

Mechanical Properties	64.8 MPa Metric	9400 psi English	Laminate property; In Plane Shear; Conditioning: 158°F 85% RH sat
	@Temperature 175 °C	@Temperature 347 °F	

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	219 °C	426 °F	Wet, (DMA, E" Peak)
	285 °C	545 °F	Dry, (DMA, E" Peak)

Processing Properties	Metric	English	Comments
Gel Time	5.00 min	5.00 min	
	@Temperature 200 °C	@Temperature 392 °F	
	23.0 min	23.0 min	
	@Temperature 177 °C	@Temperature 351 °F	
	62.0 min	62.0 min	
	@Temperature 160 °C	@Temperature 320 °F	
	98.0 min	98.0 min	
	@Temperature 150 °C	@Temperature 302 °F	
Shelf Life	12.0 Month	12.0 Month	
	@Temperature -17.8 °C	@Temperature 0.000 °F	

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