

Hexcel® HexTOOL™ M81 Multi-Axial High Temperature Epoxy Tooling Compound

Category : Other Engineering Material , Polymer , Thermoset , Epoxy

Material Notes:

HexTOOL™ M81 Tooling Compound is randomly layered strips of uni-directional prepreg which is consolidated into rolled goods. It can be utilized as multi-ply quasi-isotropic hand lay-up, and subsequently CNC milled to close tolerance. HexTOOL™ M81 has proved to be dimensionally stable with the ability to hold vacuum integrity before and after machining. Fabricated from Hexcel's epoxy resin HexPly® M81, HexTOOL™ M81 tools are ideally suited for 120°C to 150°C cure carbon fiber tools but can also accept several cure cycles to at 180°C. This makes them also lighter weight, more energy efficient than tools made of steel or aluminum but also more cost-effective with tighter mould tolerance than standard composites tools. Information provided by Hexcel

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hexcel-HexTOOL-M81-Multi-Axial-High-Temperature-Epoxy-Tooling-Compound.php

Physical Properties	Metric	English	Comments
Thickness	32.5 microns	1.28 mil	Cured Ply Thickness

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	170 MPa	24700 psi	Dry; EN2561
	@Temperature 120 °C	@Temperature 248 °F	
	175 MPa	25400 psi	Dry; EN2561
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Modulus	40.0 GPa	5800 ksi	Dry; EN2561
	@Temperature 120 °C	@Temperature 248 °F	
	43.0 GPa	6240 ksi	Dry; EN2561
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Compressive Strength	250 MPa	36300 psi	Dry; EN2850B
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	250 MPa	36300 psi	Dry; EN2850B
	@Temperature 120 °C	@Temperature 248 °F	
Compressive Modulus	30.0 GPa	4350 ksi	Dry; EN2850B
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	30.0 GPa	4350 ksi	Dry; EN2850B
	@Temperature 120 °C	@Temperature 248 °F	
	35.0 MPa	5080 psi	

Shear Strength Mechanical Properties	Metric @ Temperature 120 °C	English @ Temperature 248 °F	Dry: EN2563 Comments
	45.0 MPa	6530 psi	Short Beam Shear, Dry; EN2563
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	5.00 µm/m-°C	2.78 µin/in-°F	In Plane; ASTM E289-95
Maximum Service Temperature, Air	185 °C	365 °F	
Glass Transition Temp, Tg	220 °C	428 °F	Postcured, Dry

Processing Properties	Metric	English	Comments
Shelf Life	12.0 Month	12.0 Month	
	@Temperature -18.0 °C	@Temperature -0.400 °F	

Descriptive Properties	Value	Comments
Autoclave Work Life (Days)	20	At 21°C
Minimum Initial Cure Temperature (°C)	125	
Nominal Fibre Volume (%)	55	
Nominal Ply Areal Weight (g/m2)	2000	
Nominal Resin Content (%)	38	By weight

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