HexPly® Epoxy Matrix
M9.6GF/42%/600T2/HSCF-12k

Product Data Sheet

Description

HexPly® M9.6GF/42%/600T2/HSCF-12k is a Epoxy High Strength Carbon Woven prepreg, whereby M9.6GF is the resin type; 42% is the resin content by weight; 600T2 is the reinforcement reference and HSCF represents High Strength Carbon fibre. This data sheet is complementary to the M9.6GF resin data sheet, which should be consulted for additional information.

Reinforcement Data						
			0°	90°		
Nominal Area Weight	g/m²	600	300	300		
Composition		Twill 2x2				
Fibre Type		High Strength Carbon				
Nominal Fibre Density	g/cm³	1.8				

Matrix Properties		
Glass transition temperature of laminate	°C	110 +/-5 (ISO 11357-5, 10°C/min ramp rate, -40 to 270°C)
(Cure cycle: 30 min @ 120°C)		
Nominal Resin Density	g/cm³	1.1 – 1.2 (ISO 1183-1)

Prepreg Data		
Nominal Area Weight	g/m²	1034
Nominal Resin Content	weight %	42
Volatiles	weight %	hot melt
Tack Level		Medium

Processing			
Cure Cycle		@ 100 °C	*70 +/-15 min
	or	@ 110 °C	*45 +/-10 min
	or	@ 120 °C	*33 +/-7 min
Recommended heat up rate		ºC/min	0,5 - 5
Recommended dwell @ 80 °C		min	120
Pressure gauge		bar	0.5 - 5

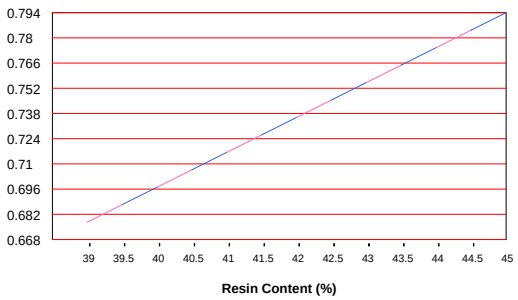
The optimum cure cycle, heat up rate and dwell period depend on part size, laminate construction, oven capacity and thermal mass of tool.

*Time to 95% conversion

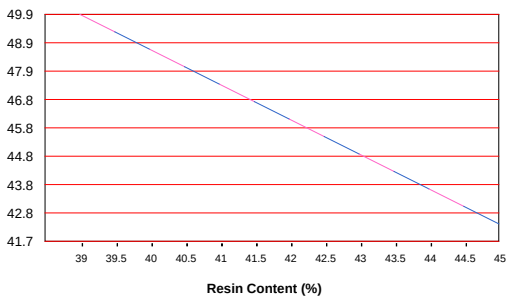
Cured Laminate Properties

(nominal composite density 1.49 g/cm³)

RESIN CONTENT % vs CURED PLY THICKNESS



RESIN CONTENT % vs FIBRE VOLUME %



The above graphs enable the fibre volume content of a laminate to be estimated using the measured cured ply thickness. The calculation assumes no resin loss.

Mechanical Properties

Mechanical Properties are based on 120 °C cure for 60 min, at 5 bar pressure.

Data is the result from several tests on Press cured laminates. Some of the values achieved will have been higher, and some lower, than the figure quoted.

(Normalised to 50% fibre volume, except for ILSS)

Warp (RT / Dry)	Tensile	Flexural	ILSS	Compression
Strength (MPa)	1060	770	48	
Modulus (GPa)	60	53	.	
Test Method	EN ISO 527-4	EN ISO 14125	EN ISO 14130	
Weft (RT / Dry)	Tensile	Flexural	ILSS	Compression
Strength (MPa)	945			
Modulus (GPa)	58		.	
Test Method	EN ISO 527			

Prepreg Storage Life

Shelf Life[1]: 18 months at -18°C/0°F (from date of manufacture).

[1] Shelf Life: the maximum storage life for HexPly® prepreg, when stored continuously, in a sealed moisture-proof bag, at -18°C/0°F or 5°C/41°F. To accurately establish the exact expiry date, consult the box label.

Shelf Life[1]: 6 months at 5°C/41°F (from date of manufacture).

[1] Shelf Life: the maximum storage life for HexPly® prepreg, when stored continuously, in a sealed moisture-proof bag, at -18°C/0°F or 5°C/41°F. To accurately establish the exact expiry date, consult the box label.

Out Life[2]: 6 weeks at Room Temperature.

[2] Out Life: the maximum accumulated time allowed at room temperature between removal from the freezer and cure.

Prepreg should be stored as received in a cool dry place or in a refrigerator. After removal from refrigerator storage, prepreg should be allowed to reach room temperature before opening the polyethylene bag, thus preventing condensation. (A full reel in its packing can take up to 48 hours).

Precautions for Use

The usual precautions when handling uncured synthetic resins and fine fibrous materials should be observed, and a Safety Data Sheet is available for this product. The use of clean disposable inert gloves provides protection for the operator and avoids contamination of material and components.

Important

All information is believed to be accurate but is given without acceptance of liability. All users should make their own assessment of the suitability of any product for the purposes required. All sales are made subject to our standard terms of sale which include limitations on liability and other terms

For more informations

Hexcel is a leading worlwide supplier of composite materials to aerospace and industrial markets.
Our comprehensive range includes:

- HexTow® carbon fibers
- HexForce® reinforcements
- HiMax™ multiaxial reinforcements
- HiTape™ advanced reinforcements
- HexPly® prepregs
- HexMC® molding compounds
- HexFlow® RTM resins
- Redux® adhesives
- HexTool® tooling materials
- HexWeb® honeycombs
- Acousti-CAP® sound attenuating honeycomb
- Engineered core
- Engineered products

For US quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list, please go to:
http://www.hexcel.com/Resources/DataSheets/Prepreg