



HexPly® M52

120°C/250°F curing epoxy

Product Data

Description

HexPly® M52 is a modified epoxy matrix with good mechanical and temperature performance, specifically designed for rapid press curing.

HexPly M52 is ideal for small to high volume industrial applications where short cure cycles and a high quality cosmetic finish are required.

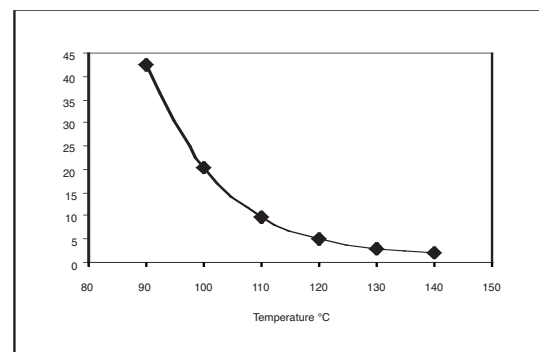
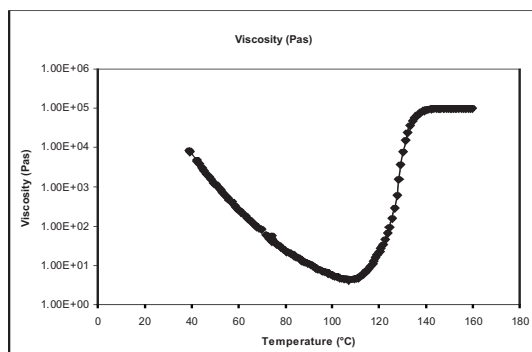
HexPly M52 is a very versatile product and typical applications include sporting goods, bicycles, prosthetics, small automotive parts & body panels, motorsport & motor bike parts, loud speakers and other general industrial applications.

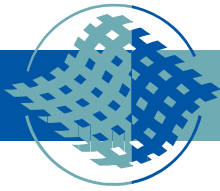
HexPly M52 is available with UD & fabric reinforcements.

Benefits and Features

- Fast curing 15 mins @ 120 °C
- Versatile process – autoclave, vacuum bag, but specifically suitable for press
- Excellent surface finish
- Versatile cure system (100°C to 140° C)
- Easy to demould at hot temperatures
- Medium flow
- Low tack
- Maximum service temperature 80°C

Resin Matrix Properties





Prepreg Curing Conditions

HexPly M52 can be cured at temperatures from 100°C to 140°C using a variety of curing processes including press and autoclave.

A typical press cure cycle for a monolithic laminate is 15 minutes at 120°C.

Cure Temperature (°C)	Cure Time (minutes)	Glass Transition Temperature Onset (°C)
100	90	100
140	10	87

Performance testing should accompany alternative cure cycles to ensure suitability for the particular application.

Heat-up rates are dependent on component thickness, eg, slow heat-up rates should be used for thicker components and large tools. Accurate temperature measurements of the component should be made during the cure cycles by using thermocouples.

Cured Prepreg Properties

Physical Properties

	Units	M52/40%/193P/CHS-3K	M52/38%/UD150/CHS/460mm
Fibre Weave/UD Fibre Mass	g/m ²	HS Carbon Plain 193	150
Nominal Prepreg Mass	g/m ²	322	242
Nominal Cured Ply Thickness	mm	0.216	0.161
Nominal Fibre Volume	%	50.3	52.4
Resin Density	g/cm ³	1.20	
Fibre Density	g/cm ³	1.78	1.78
Nominal Laminate Density	g/cm ³	1.49	1.50

Mechanical Properties

Test	Units	Method	M52/40%/193P/CHS-3K	M52/38%/UD150/CHS/460mm
ILSS	MPa	EN2563	60	75
Tensile Strength	MPa	EN2561	751	1500
Tensile Modulus	GPa	EN2561	63.8	
Compression Strength	MPa	EN2850B	604	
Compression Modulus	GPa	EN2850B	61	
Flexural Strength	MPa	EN2562	971	1400
Flexural Modulus	GPa	EN2562	65.6	100
Glass Transition Temperature	°C	DMA Onset	85-90	

Results after a press cure of 3 bar, at 120°C for 15 minutes.

Fabric samples tested in the warp direction.

Fabric data normalised to Vf = 55%, except for ILSS.

Storage and Handling

- Shelf Life¹ : 12 months at –18°C (0°F) (from date of manufacture)
- Out Life² : 24 days at RT (23°C/73°F)

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

²Out 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. 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 important terms.

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For More Information

Hexcel is a leading worldwide supplier of composite materials to aerospace and other demanding industries. Our comprehensive product range includes:

- Carbon Fibre
- RTM Materials
- Honeycomb Cores
- Continuous Fibre Reinforced Thermoplastics
- Carbon, glass, aramid and hybrid prepregs
- Reinforcement Fabrics
- Structural Film Adhesives
- Honeycomb Sandwich Panels
- Special Process Honeycombs

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:

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