



HexPly[®] M49

120°C curing epoxy matrix

Provisional Product Data

Description

HexPly M49 is a 120°C curing toughened epoxy matrix with good impact resistance suitable for use in performance cars. The matrix is highly tolerant of a wide variety of production techniques and equipment making it easy to process.

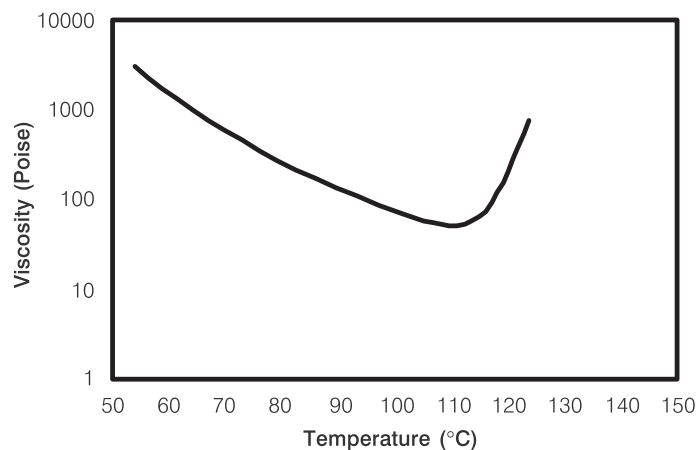
Benefits and Features

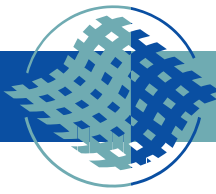
- Toughened epoxy
- Good impact resistance
- Autoclave or vacuum bag processing
- Long shelf life and out life at room temperature

Resin Matrix Properties

Colour	White
Density (g/cm ³)	1.18
Curing Enthalpy (J/g)	290
Gel time at 177°C (min)	12 - 14
Minimum viscosity (poise)	50
Tg after 120°C 60 min cure dry (°C)	120
Tg wet (°C)	95

Viscosity Profile (heat up rate 2°C/min)





HexPly® M49

Prepreg Types

Fibre Designation	C280T4	C370S5	C193PW	C193PW
Fibre Volume (%)	49.5	49.5	49.5	49.5
Type	3K high strength carbon	6K high strength carbon	HTA	AS4-C
Style	Twill 4 x 4	Satin weave, 5H	Plain weave	Plain weave
Weight (g/m ²)	280	370	193	193
M49 Resin Content by Weight (%)	42	42	42	42

Cured Prepreg Properties (cured at 120°C)

Property	Test Method	Conditioning	Test Temp	C280T4	C370S5	C193PW HTA	C193PW AS4-C
0° Tensile Strength (MPa) Modulus (GPa)	ASTM D-3039	23°C 23°C	23°C 23°C	882 56	741 54	940 57	820 61
0° Compressive Strength (MPa)	ASTM D-965	23°C 23°C	23°C 90°C	514 422	610 350	592 419	649 461
0° Flexural Strength (MPa) Modulus (GPa)	ASTM D-790	23°C 23°C 23°C 23°C	23°C 90°C 23°C 90°C	818 515	921 518 41 37	946 672 40 37	934 549 50 55
0° Interlaminar Shear Strength (MPa)	ASTM D-2344	23°C 23°C 60°C-90%RH	23°C 90°C 60°C	66 36	69 36 29	66 43 40	64 38 40

Results for cured prepregs at 49.5% fibre volume.

Prepreg Curing Conditions

90 minutes at 120°C, 1 - 7 bar pressure

Heat up rate 2 - 3°C/minute

Prepreg Storage Life

Out Life: 30 days at RT (23°C/73°F)

Shelf Life: 12 months at -18°C (0°F) (from date of manufacture)

Definitions:

Shelf 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.

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

Storage Conditions

HexPly M49 prepregs 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 polythene bag, thus preventing condensation. (A full reel in its packaging 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, glass, aramid and hybrid prepregs ■ Honeycomb cores
- Structural film adhesives ■ Honeycomb sandwich panels
- Special process honeycombs ■ RTM materials

For further information, please contact your nearest sales office, or visit our website at www.hexcel.com

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