

HexPly® M10/42%/600T2/CHS-12K Epoxy Matrix

Product Data Sheet

Description

HexPly® M10/38%/600T2/CHS-12K is a woven High Strength Carbon Epoxy prepreg, whereby M10 is the resin type; 42% is the resin content by weight; 600T2 is the reinforcement reference and CHS-12K represents High Strength Carbon fibre. **This data sheet is complementary to the M10 resin data sheet, which should be consulted for additional information.**

Reinforcement Data

| | | | | |
|-----------------------|-------------------|--------------------------|-----|-----|
| Nominal Areal Weight | g/m ² | 600 | 0° | 90° |
| Composition | | Twill 2x2 | 300 | 300 |
| Fibre Type | | High Strength Carbon 12K | | |
| Nominal Fibre Density | g/cm ³ | 1.8 | | |

Matrix Properties

| | | |
|--|-------------------|-------------------------------------|
| Glass transition temperature of laminate (Cure cycle: 60 min @ 120°C) | °C | 130 (DMA onset, 5°C/min, 1Hz, 30µm) |
| Nominal Resin Density | g/cm ³ | 1.2 |

Prepreg Data

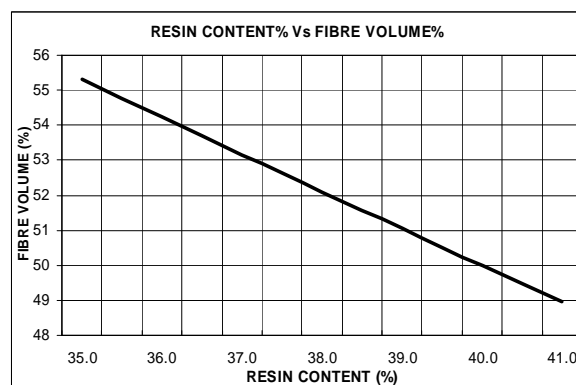
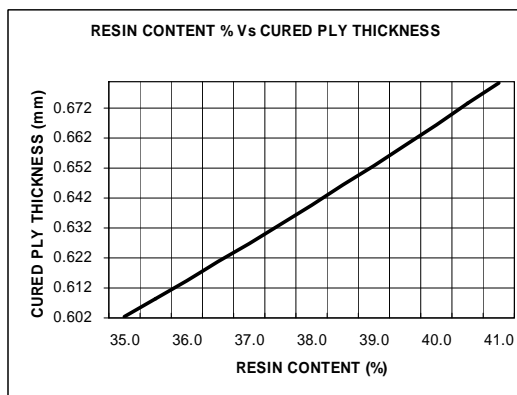
| | | |
|-----------------------|------------------|----------|
| Nominal Areal Weight | g/m ² | 1034 |
| Nominal Resin Content | weight% | 42 |
| Volatiles | weight % | Hot Melt |
| Tack level | | Medium |

Processing

| | | | |
|--------------------------|----|----------|-------------|
| Cure Cycle | | @ 85 °C | 960 min |
| | or | @ 120 °C | 60 min |
| | or | @ 150 °C | 10 min |
| Recommended heat up rate | | °C/min | 3 - 5°C/min |
| Pressure (gauge) | | bar | 0.3 to 5 |

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

Cured Laminate Properties (nominal composite density 1.51 g/cm³)



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.



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Mechanical Properties (at 55% fibre volume)

Mechanical Properties are based on 120°C cure for 60 mins at 5 bar pressure and 0.9 bar vacuum.

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

| warp (Dry & RT) | Tensile | Flexural | ILSS | Compression |
|-----------------|-----------|----------|---------|-------------|
| Strength (MPa) | 841 | 792 | 49 | 510 |
| Modulus (GPa) | 60 | 49 | - | 51 |
| Test Method | EN 2561 B | EN 2562 | EN 2563 | EN 2850 B |

Prepreg Storage Life

- **Shelf Life¹**: 12 months at -18°C/0°F (from date of manufacture)
- **Out Life²**: 60 days at Room Temperature
- **Tack Life³**: 60 days at Room Temperature

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 or 5°C/41°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.

³Tack Life: the time, at room temperature, during which prepreg retains enough tack for easy component lay-up.

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).



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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.

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