



MULTIPREG E730

135°C (275°F) Curing Modified Epoxy Resin Component Prepreg

E730 is a toughened epoxy resin system of medium viscosity for cures at 135°C (275°F), pre-impregnated into high performance fibers such as carbon, glass and aramid. Designed for structural applications in the motor racing and marine industries, also for general aircraft fittings, sporting equipment, and for a wide range of engineering applications.

CHARACTERISTICS:

- Glass transition temperature 195°C (383°F) with suitable postcure
- Medium tack level, easily laminates to mold surface
- Excellent drapeability – complex shapes easily formed
- Good fracture toughness
- Autoclave, vacuum bag or press cures
- Low volatile content – no solvents used during processing
- 1 month shelf life at ambient temperature

RESIN PROPERTIES

Density 1.23 g/cm³ (76.8lbs/ft³) at 23°C (73°F)

Tg (DMTA) after 4hr post cure at 180°C (356°F) Onset: 172°C (342°F)
Peak Tan δ: 195°C (383°F)



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PROCESSING

Following removal from refrigerated storage, allow prepreg to reach room temperature before opening the polythene bag, to avoid moisture condensation.

Cut patterns to size and lay up the laminate in line with design instructions taking care not to distort the prepreg. If necessary, the tack of the prepreg may be increased by gentle warming with hot air. The lay up should be vacuum debulked at regular intervals using a P3 (pin pricked) release film on the prepreg surface, vacuum of 980 mbar (29 in Hg) is applied for 20 minutes.

For autoclave cures, use of a non-perforated release film on the prepreg surface trimmed to within 25-30mm of prepreg edge is recommended for the cure cycle, a vacuum bag should be installed using standard techniques.

CURING CYCLES

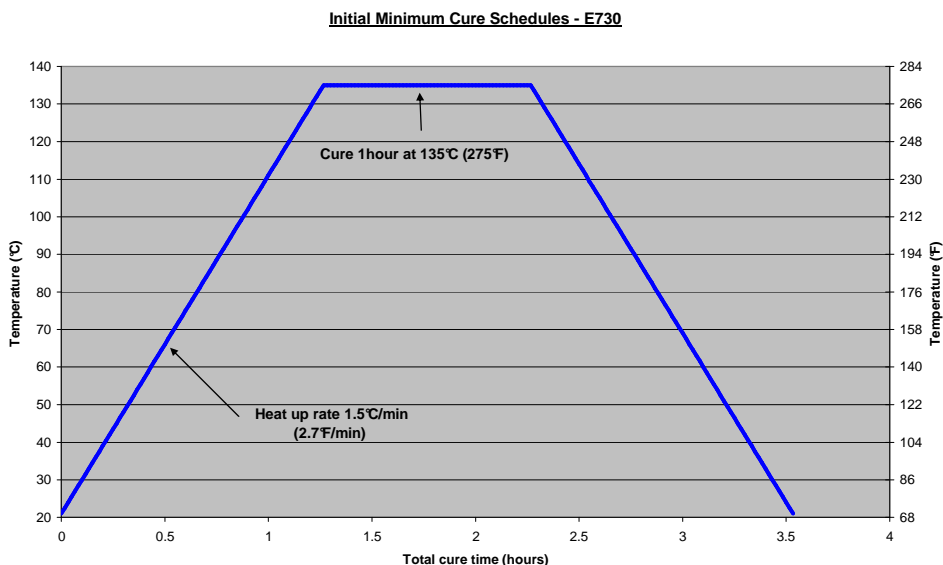
E730 can be successfully molded by vacuum bag, autoclave, or matched die molding techniques.

Increase autoclave pressure to 1.4 bar (20 psi) with vacuum applied.

Vent to atmosphere and raise pressure to 6.2 bar (90 psi) (or max allowed by the core material).

Increase air temperature at 1.5°C (2.7°F) / min and hold for 1 hour at 135°C (275°F). Allow to cool to 60°C (140°F) before removal of pressure.

To obtain the maximum T_g it is essential that a suitable postcure is carried out e.g. For T_g 195°C (383°F), ramp from initial cure temperature to 180°C (356°F) at 0.5 °C/min and hold for 4 hours minimum. Cool to 60°C at 3.0 °C (5.4°F)/min.





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EXOTHERM

In certain circumstances, such as the production of thick section laminates rapid heat up rates or highly insulating masters, E730 can undergo exothermic heating leading to rapid temperature rise and component degradation in extreme cases.

Where this is likely, a cure incorporating an intermediate dwell of 1 hr at 90°C (194°F) is recommended in order to minimize the risk.

TYPICAL LAMINATE PROPERTIES (at Room Temperature)

**T800 (6K) 280g/m² 5HS carbon 0/90° configuration woven laminates, cu red
1hr at 135°C (275°F), results normalised to 55% Vf.**

Tensile Strength	990 MPa	EN ISO 527-4
Tensile Modulus	69 GPa	
Tensile Poisson's Ratio	T.B.A	
Tensile Strain to failure (%)	1.3	
Compression Strength	625 MPa	EN 2850
Compression Modulus	77 GPa	
Flexural Strength	914 MPa	CRAG 200
Flexural Modulus	78 GPa	
Apparent ILSS	72 MPa	CRAG 100
Mode I Fracture Toughness	550 J/m ²	AITM 1.0005

**IM7 (6K) 200g/m² 2/2 twill carbon 0/90° configuration woven laminat es, cured
1hr at 135°C (275°F), results normalised to 55% Vf.**

Tensile Strength	1045 MPa	EN2561
Tensile Modulus	68.1 GPa	
Tensile Poissons Ratio	0.05	
Compression Strength	640 MPa	EN2850
Compression Modulus	64.1 GPa	
In-Plane Shear Strength	98 MPa	ASTM D3518
In-plane Shear Modulus	3.2 GPa	



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T800 (6K) 200g/m² 2/2 twill carbon 0/90° configuration woven laminates, cured 1hr at 135°C (275°F), results normalised to 55% Vf.

Tensile Strength	969 MPa	EN2561
Tensile Modulus	64.6 GPa	
Tensile Poissons Ratio	0.06	
Compression Strength	603 MPa	EN2850
Compression Modulus	67.1 GPa	
In-Plane Shear Strength	106 MPa	ASTM D3518
In-Plane Shear Modulus	3.3 GPa	

STORAGE

Shelf life is at least 1 month at ambient temperature 20°C (68°F)

Refrigerated storage life is 12 months at -18°C (0°F)

To avoid moisture condensation: Following removal from cold storage, allow prepreg to reach room temperature before opening the polythene bag.

HANDLING SAFETY

Observe established precautions for handling epoxy resins and fibrous materials.

For further information refer to Material Safety Data Sheet.

FURTHER INFORMATION

Please contact Amber Composites for additional information.

This is not a specification. The information given in this data sheet in relation to the performance, storage and other characteristics of the product is based on results gained from experience and tests and is believed to be accurate. Given, however, that conditions of use and storage will vary, Amber Composites will not be liable for any loss or damage resulting from reliance upon such information. The purchaser is recommended to carry out his own tests to establish the suitability of the product for its particular purpose. The use of the product in certain processes may require third party consent.