



MULTIPREG E720

120°C (248°F) Honeycomb Bondable Epoxy Resin Component Prepreg

E720 is a toughened epoxy resin system of medium viscosity for cures at 120°C (248°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.

*E720 is compatible for co-cure with Amber Composites 120°C (248°F) cure resin film EF72 and Amber Composites syntactic core Amlite SC72A. If fire retardant properties are required consult separate data sheet for MULTIPREG E721-FR.

CHARACTERISTICS:

- Excellent adhesive properties – ideal for honeycomb sandwich construction without the use of a resin film
- At least 1 month shelf life at ambient temperature
- Medium tack level – easily laminated onto mold surfaces
- Good impact resistance
- Available in woven fabric and unidirectional fibers
- Good surface finish
- Low volatile content – no solvents used during processing

RESIN PROPERTIES

Density	1.2g/cm ³ (74.9lbs/ft ³) at 23°C (73°F)
Tg (DMTA) after 1 hr at 120°C (248°F)	Onset: 110°C (230°F) Peak Tan δ: 121°C (250°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.

E720 may also be used for single shot production of sandwich structures incorporating honeycomb or foam cores.

CURING CYCLES

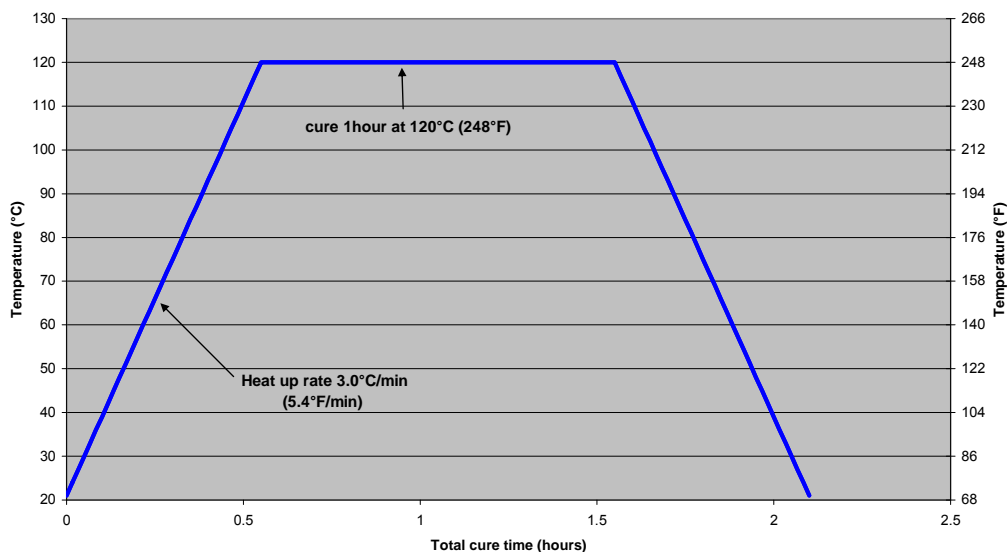
E720 can be successfully molded by vacuum bag, autoclave, or matched die molding techniques.

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 3°C (5.4°F) / min and hold for 1 hour at 120°C (248°F). Allow to cool to 50°C (122°F) before removal of pressure.

Initial Minimum Cure Schedules - E720





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EXOTHERM

In certain circumstances, such as the production of thick section laminates rapid heat up rates or highly insulating masters, E720 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 ADHESIVE PROPERTIES (at Room Temperature)

Climbing drum peel strength at 20°C (68°F) according to DTD 5577 using 2 plies of 200g/m² Multipreg E720 on Aluminium honeycomb 5.2-1/4-25-3003.

200 g/m² T300 type carbon 2/2 twill 46% R.W.

Surface	Peel Strength (N/76mm)
Top	280
Bottom	340
Mean	310

Ramped at 2°C/min from 30 °C (86 °F) – 120°C (248°F)
Held at 120°C (248°F) for 1 hour
25 P.S.I pressure applied



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TYPICAL LAMINATE PROPERTIES (at Room Temperature)

T300 (3K) 280g/m² 5HS carbon 0/90° configuration woven laminates, cured 1hr at 120°C(248°F), results normalised to 55% Vf.

Tensile Strength	620.5 MPa	EN ISO 527-4
Tensile Modulus	58.4 GPa	
Tensile Poisson's Ratio	0.05	
Tensile Strain to failure (%)	0.9	
Compression Strength	487.6 MPa	EN 2850
Compression Modulus	70.0 GPa	
In-plane Shear Strength	98.7 MPa	EN ISO 14129
In-plane Shear Modulus	3.5 GPa	
Flexural Strength	801 MPa	EN ISO 14125
Flexural Modulus	52.4 GPa	
Apparent ILSS	62.1 MPa	EN ISO 14130

T800 (6K) 276g/m² 2/2 twill carbon 0/90° configuration woven laminates, cured 1hr at 120°C (248°F), results normalised to 55% Vf.

Tensile Strength	1061.9 MPa	EN ISO 527-4
Tensile Modulus	68.2 GPa	
Tensile Poisson's Ratio	0.05	
Tensile Strain to failure (%)	1.4	
Compression Strength	530.0 MPa	EN 2850
Compression Modulus	84.1 GPa	
In-plane Shear Strength	108.6 MPa	EN ISO 14129
In-plane Shear Modulus	3.7 GPa	
Flexural Strength	866.4 MPa	EN ISO 14125
Flexural Modulus	63.0 GPa	
Apparent ILSS	60.6 MPa	EN ISO 14130



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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 – wear gloves

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.