

GMS EP-274 PREPREG

Product

GMS Composites EP-274 is a formulated epoxy resin matrix prepreg with long out life and improved handling. The product has a versatile curing cycle from as low as 70°C or as high as 130°C, thus enabling the product to be used to produce a wide range of composite items, from large structures to numerous small components. EP-274 is available in a range of substrates such as carbon, glass or aramid. EP-274 allows faster cycle times at elevated temperatures. The product also has good dynamic strength properties. The improved handling allows for easier moulding of complex parts. The prepreg has good flow and the tack of EP-274 can be varied.

Applications

EP-274 can be used to produce structural components with carbon, glass or aramid fibres. It can also be used in the construction of sandwich structures as well as tooling applications. The versatility of EP-274 means that large, complex structures as well as small basic components can be produced. It is possible to utilise EP-274 in a number of industries and applications such as marine, sports and leisure, industrial components and automotive.

Features

- ◆ **Variable cure cycle 70°C – 130°C**
- ◆ **Good surface finish**
- ◆ **Suitable for a range of structures and processes**
- ◆ **Excellent shelf life**
- ◆ **Wide range of fibre substrates available**
- ◆ **Made in Australia**

Curing

The versatility of GMS Composites EP-274 means a range of cure cycles, pressures and ramp up rates can be adopted all of which will depend greatly on the part being produced. Below is a guide to minimum cure cycles.

Temperature (°C)	Time	Tg (°C) - DSC7
70	16 hours	85
80	8 hrs	97
90	4 hrs	105
100	2 hrs	115
110	1 hr	118
120	30 mins	123
130	15 mins	125

Heat ramp up rate – 2°C / min
 Pressure – 1 bar

Gel Time

Hot plate

Temperature (°C)	Time (min)
110	12-14
120	6 - 7
130	3 - 4

Values are indicative of small samples of neat resin formulation. Gel times may vary significantly in composites depending on fibre content and laminate thickness.

Properties

Properties of cured, neat formulation. Cure cycle 2hrs at 120oC	Unit	Value
Flexural Strength (at 23°C)	MPa	130 - 140
Ultimate Elongation (at 23 °C)	%	7.0 – 9.0
Flexural Modulus (at 23 °C)	MPa	3000 - 3200
Fracture Toughness K1c	MPa√m	0.7 - 0.8
Fracture Energy G1c	J/m ²	150 - 160
Tg (DSC, 10 K/min)	°C	120 - 125
Interlaminar shear strength (12 layers UD e-glass (425gsm) 3.2mm thick laminate)	Mpa	55 - 65

Shelf Life

Room temperature (23°C)	> 5 weeks
Refrigerated (-18°C)	12 months

Handling

Customers should ensure appropriate workplace OH&S guidelines are followed when working with this product. Appropriate measures should be taken to avoid contact with skin and eyes. Avoid inhalation of dust or fumes that may be released or created when machining, cutting or curing.

IMPORTANT

All information in this publication is considered accurate and to the best of knowledge of GMS Composites. GMS Composites reserves the right to implement changes and alterations to our products from time to time without giving prior notice. All specifications, weights and capacities in this brochure are approximate only and are included as measure of past performance and do not constitute a condition, warranty or guarantee of future performance. Customers should make their own assessment as to the suitability of this product for their own condition of use. No liability can be accepted in respect to the use of GMS Composites products in conjunction with other materials. Any advice and or recommendations given by GMS Composites and its employees is given in good faith and is acted upon or followed by the customer entirely at their own risk.