

## GMS EP-272 RESIN FILM

### Product

---

GMS Composites EP-272 is a formulated epoxy resin film with long out life. 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-272 is a resin film available on a lightweight scrim or without a scrim. The EP-272 resin is compatible with EP270 prepregs. The resin film has good flow and the tack of EP-272 can be varied.

### Applications

---

EP-272 is used as a resin film layer, used with EP270 prepregs. EP-272 is designed to be used as a film in the construction of sandwich structures. The versatility of EP-272 and EP-270 means large complex structures as well as small basic components can be produced.

### 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-272 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 <sup>2</sup>	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)	> 3 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 accept 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.