

# Technical Data Sheet

## Evopreg EPT100

Low temperature cure epoxy prepregs for tooling applications

### Introduction

Evopreg EPT100 tooling prepregs are based on a low temperature curing, toughened epoxy resin system, formulated specifically for high temperature performance, ease of lay-up and excellent surface finish.

The prepregs can be supplied with a range of reinforcement fibres and fabric constructions, including carbon, glass and flax, and they are best consolidated in an autoclave.

### Key Features & Benefits

- Low curing temperature 45-70°C
- Service temperature 180°C after post-cure
- Suitable for autoclave processes
- 6 days out-life at room temperature
- 12 months storage life at -18°C
- Good tack and drape
- Toughened
- Excellent surface finish
- Excellent release from patterns
- Available on a range of reinforcement fabrics

### Processing & Curing

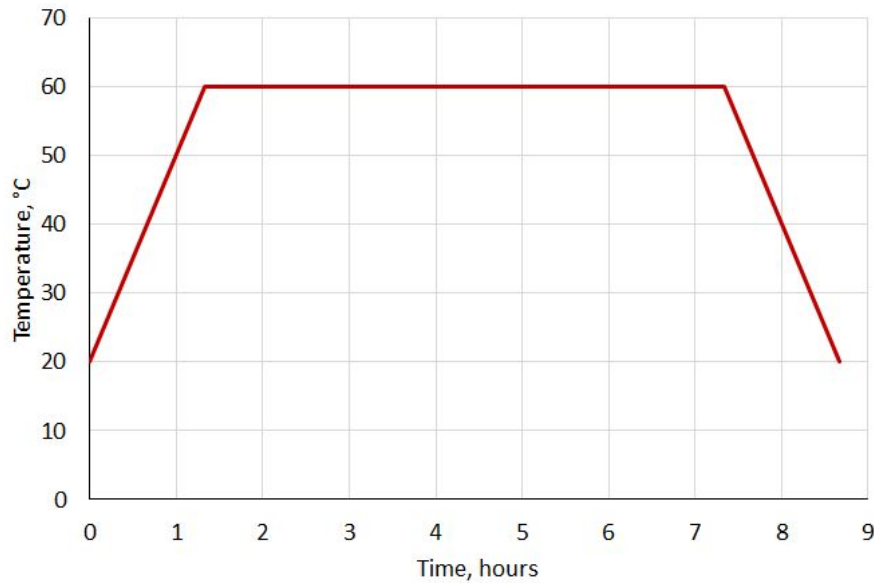
It is recommended to perform an initial cure at low temperature in an autoclave followed by a free-standing post-cure to achieve best performance. Suggested cure cycles are shown below.

#### Initial Cure

Initial cure temperature	Minimum cure time
45°C	40 hours
60°C (recommended)	6 hours
70°C (maximum)	4 hours

- Recommended ramp rate for initial cure 0.5°C/min
- Care should be taken to heat and cool slowly and steadily to avoid exothermic reactions and prevent distortion and cracking of patterns
- Cure times may need to be extended to account for thermal lag in large tools

Suggested initial cure cycle (ramp rate 0.5°C/min, dwell 6 hours at 60°C):

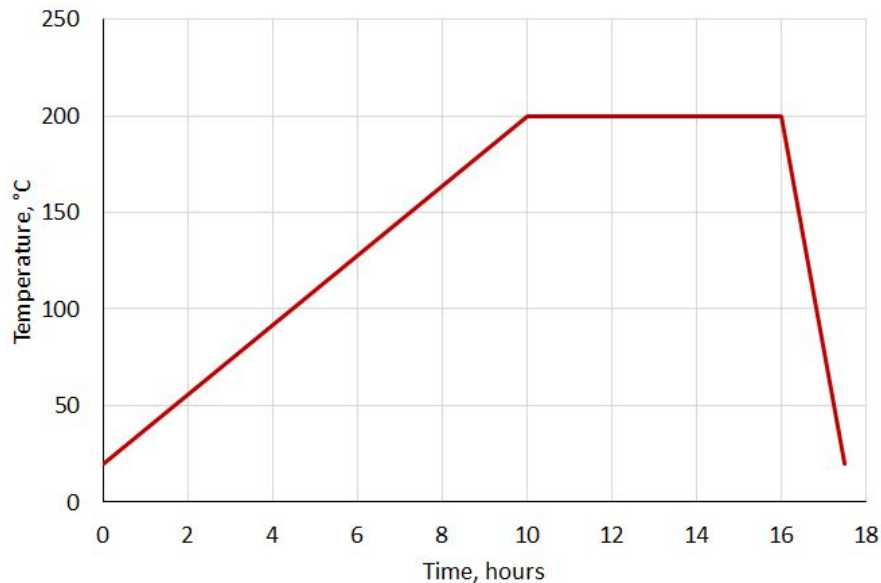


## Post-Cure

Post-cure temperature	Cure time	Glass transition temperature, T <sub>g</sub>	
		T <sub>g</sub> , onset E'	T <sub>g</sub> , peak tan δ
150°C	6 hours	162°C	185°C
200°C (maximum)	6 hours	193°C	219°C

- Recommended ramp rate for post-cure 0.3°C/min
- Care should be taken to heat slowly and steadily to avoid exothermic reactions
- Maximum post-cure temperature for flax 150°C
- Larger moulds may require support during post-cure to prevent distortion

Suggested post-cure schedule (ramp rate 0.3°C/min, dwell 6 hours at 200°C):



## Available Products

Evopreg EPT100 prepregs are available with a wide range of reinforcements, including woven, non-crimp stitched and unidirectional fabrics. Standard products are as follows:

- Carbon - 200g/m<sup>2</sup> 2x2 twill 3K surface ply and 650g/m<sup>2</sup> 2x2 twill 12K bulking ply
- Flax - 400g/m<sup>2</sup> 2x2 twill alternative bulking ply
- Glass - 300g/m<sup>2</sup> 8H satin surface ply and 870g/m<sup>2</sup> 2x2 twill bulking ply

## Storage

The material must be stored in a freezer at -18°C and sealed in a polythene bag. To avoid moisture condensation, allow the material to defrost fully and reach room temperature before opening the polythene bag. Typical thaw time for full roll is 4-6 hours. Keep material sealed in polythene bag when not in use to prevent moisture absorption. Out-life at room temperature is 6 days. Storage life at -18°C is 12 months.

## Packaging

The material is typically delivered in rolls and with a silicone coated release paper on the bottom and a polythene release film on the top. Typical packaging - 76mm (3") diameter cardboard core, polythene bag, cardboard box and end supports. Where relevant, multiple boxes are typically stacked on a standard wooden pallet, strapped and covered with stretch wrap. Other packaging may be available on request.

## Health & Safety

Please refer to Safety Data Sheet (SDS) before use. This material contains epoxy resin and fibres which can cause irritation to skin and eyes and allergic reactions. Wear appropriate PPE including overalls and impervious gloves, and ensure adequate ventilation.

Evopreg EPT100 prepregs contain a highly reactive epoxy resin formulation which can undergo severe exothermic reactions. Particular care must be taken when curing thick laminates. Do not exceed recommended ramp rates.

## Disclaimer

The information provided here is believed to be accurate but should be considered indicative only. It is the responsibility of the customer to check the suitability of the product for their specific application prior to use.