Evopreg® EPC300 component prepreg is based on a medium-temperature-curing toughened epoxy resin, formulated for high performance, ease of lay-up, and excellent surface finish. It can be supplied with a range of reinforcement fibres and fabric constructions, and can be consolidated by vacuum bagging, autoclave or press moulding. It is applicable to a range of applications including automotive, motorsport, sporting goods and general industrial.

KEY FEATURES & BENEFITS

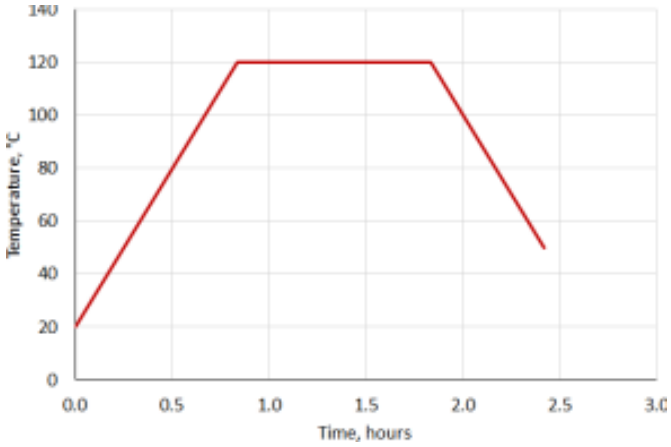
- Flexible cure temperature 80-120°C
- Service temperature up to 130°C
- Suitable for vacuum bag/oven, autoclave and press moulding
- Excellent adhesion to core materials, including honeycomb
- Excellent surface finish
- Available with a wide range of reinforcement fabrics

CURE PROFILES

		Glass transition temperature, Tg	
Cure Temp	Min Cure Time	Tg, onset E’	Tg, peak tan δ
80°C	12 hours	88°C	107°C
120°C	1 hour	123°C	142°C

- Recommended ramp rate 1-3°C/min
- Cure times may need to be extended to account for thermal lag in large tools
- Optional post-cure 130°C for 1 hour - Tg onset E’ 124°C, Tg peak tan δ 145°C
- Tg data for laminates made from a woven carbon-reinforced epoxy prepreg (Evopreg® EPC300-C205T-HS-3K-42)

Suggested cure cycle for standard autoclave cures at 120°C:



Alternative cure cycle to optimise surface finish for vacuum bag/oven cures at 120°C:

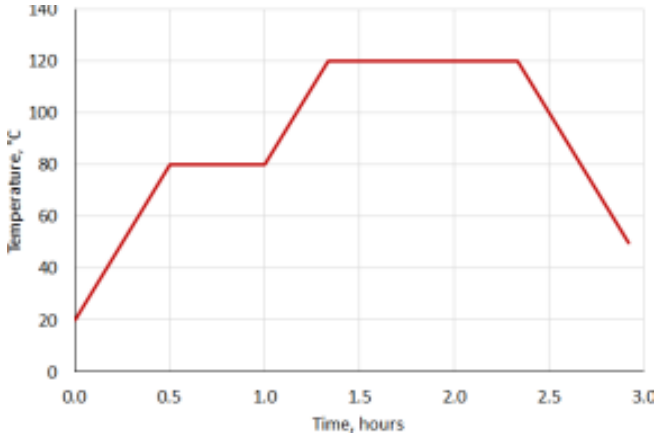
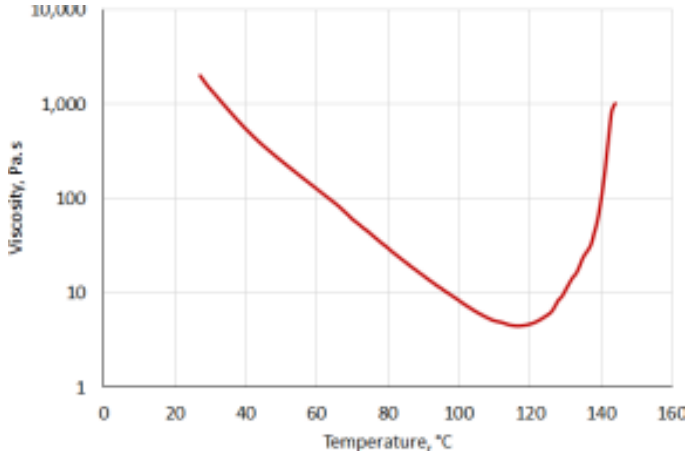


Plate-on-plate, ambient temperature 25°C, shear rate 20s-1, ramp rate 2°C/min:



COMPOSITE PROPERTIES

Mechanical Properties of Monolithic Laminates

Carbon

Typical data for laminates made from Evopreg® EPC300 205g/m2 2x2 twill high strength carbon fibre prepreg (Evopreg® EPC300-C205T-HS-3K-42-1250) cured in an autoclave for 1 hour at 120°C and 6 bar pressure.

Property	Result	Test method
Fibre content by volume, Vf	47 %	-
Density	1.48 g/cm^3	-
Cured ply thickness	0.24 mm/ply	-
Flexural strength, 0°	827 MPa	ISO 14125
Flexural modulus, 0°	48.2 GPa	ISO 14125
Tensile strength, 0°	617 MPa	ISO 527-4
Tensile modulus, 0°	59.2 GPa	ISO 527-4
Compressive strength, 0°	631 MPa	ISO 14126
Compressive modulus, 0°	49.2 GPa	ISO 14126
Apparent interlaminar shear strength (ILSS), 0°	70.8 MPa	ISO 14130
In-plane shear strength, ±45°	73 MPa	ISO 14129[1]
In-plane shear modulus, ±45°	2.9 GPa	ISO 14129
Out-of-plane shear (13) strength	71 MPa	ASTM D5379-19e1
Out-of-plane shear (13) modulus	2.7 GPa	ASTM D5379-19e1

1. No clear failure, value taken at 5% strain

Typical data for laminates made from Evopreg® EPC300 380 g/m2 2x2 twill high strength carbon fibre prepreg (Evopreg® EPC300-C380T-HS-12K-40-1250) cured in an autoclave for 1 hour at 120°C and 6 bar pressure.

Property	Result	Test method
Typical fibre content by volume, Vf	48%	-
Density	1.44	-
Cured ply thickness	0.44 mm	-
Tensile strength, 0°	648 MPa	ISO 527-4
Tensile modulus, 0°	57.2 GPa	ISO 527-4
Compressive strength, 0°	434 MPa	ASTM D6641
Apparent interlaminar shear strength (ILSS), 0°	56 MPa	ISO 14130
In-plane shear strength, ±45°	64 MPa	ISO 14129 [1]
In-plane shear modulus, ±45°	3.5 GPa	ISO 14129
Out-of-plane shear (13) strength	66 MPa	ASTM D5379-19e1
Out-of-plane shear (13) modulus	2.6 GPa	ASTM D5379-19e1

1. No clear failure, value taken at 5% strain

Typical data for laminates made from Evopreg® EPC300 650g/m2 2x2 twill high strength carbon fibre prepreg (Evopreg® EPC300-C650T-HS-12K-38-1250) cured in an autoclave for 1 hour at 120°C and 6 bar pressure.

Property	Result	Test method
Fibre content by volume, Vf	51%	-
Density	1.49 g/cm^3	-
Cured ply thickness	0.69 mm/ply	-
Flexural strength, 0°	737 MPa	ISO 14125
Flexural modulus, 0°	46.0 GPa	ISO 14125
Tensile strength, 0°	709 MPa	ISO 527-4
Tensile modulus, 0°	55.0 GPa	ISO 527-4
Compressive strength, 0°	402 MPa	ASTM D6641
Apparent interlaminar shear strength (ILSS), 0°	57.3 MPa	ISO 14130
In-plane shear strength, ±45°	64 MPa	ISO 14129 [1]
In-plane shear modulus, ±45°	3.4 GPa	ISO 14129
Out-of-plane shear (13) strength	68 MPa	ASTM D5379-19e1
Out-of-plane shear (13) modulus	3.0 GPa	ASTM D5379-19e1
1. No clear failure, value taken at 5% strain		

STORAGE & OUTLIFE

- Outlife at 18°C: 30 days
- Storage life at -18°C: 12 months
- To store material, keep it frozen at -18°C in a polythene bag.
- Material must remain in the unopened bag until fully thawed.
- If all material is not used, then reseal in a polythene bag to prevent moisture absorption.

HEALTH & SAFETY

Please refer to the Safety Data Sheet (SDS) before use. Suitable PPE should be worn when handling epoxy resin products. This material contains resin and fibres which can cause irritation to skin and eyes, and allergic reactions. Ensure adequate ventilation. Exothermic reactions can occur when curing resins, and particular care must be taken when curing thick laminates.