

Product Data

Prepreg Systems



Toughened Epoxy Prepreg system

RP507

Medium Temperature Cure Resin System
90°C - 160°C

Applications

- Aerospace
- Automotive
- Racing Car Components
- Motorsport Components
- Marine
- Defence

Processing Methods

- Vacuum bag
- Autoclave
- Press moulding
- Tube rolling
- Pressure bag





Introduction

RP507 is a general purpose, 90°C to 160°C curing, super tough modified epoxy prepreg, designed for the production of high performance, low void laminates.

The system has good out life properties and is suitable for a variety of processing, from shrink tape wrapped low-pressure processes to higher pressure laminating techniques where controlled flow is required.

It can be supplied with any commercially available Carbon, Aramid, or glass fibre roving, other specialist fibres can be considered subject to production constraints.

The prepreg has moderate tack at room temperature, increasing with mild heat application.

The resin system is specifically designed to remain intact when being handled, without the need to resort to glass scrim.

Main Features

- Carbon weight : 35 - 400 g/m²
- Resin content : 20 - 55%
- Volatile content : maximum 0.6 wt %
- Flow : 12 - 20% (cure cycle: 150°C, 5 bar, 15 minutes)
- Tack prepreg-prepreg : 0.5 - 1.5 N/cm at 21 +/- 2°C
- Gel time : 8 - 11 minutes at 120°C
- Tg : 121°C (DSC) after post cure

Storage

This product should be stored in refrigerated conditions.

Shelf life is 3 months at 5°C and 23 months at -18°C.

Health and Safety - Refer to the full Material Safety Datasheet before use.



Processing and Properties

RP507 prepreg resin system may be processed at room temperature using established prepreg moulding techniques on properly prepared moulds. The cure cycle depends on the construction of the component and processing method. If honeycomb core is used in the part, the temperature ramp should be increased at a slower rate to enable a controlled flow of the resin to form a fillet between the core and skin.

Cure cycle

Standard cure cycle:

2hr dwell at 120°C under vacuum with 5 bar pressure.

Heat up rate: 2°C/min

Alternative cycles:

DWELL	TEMPERATURE (°C)	PRESSURE (BAR) /VACUUM
10/15 min	160	5 + V
> 60 min	120	3 + V
5 h	100	1 + V
12 h	90	1 + V

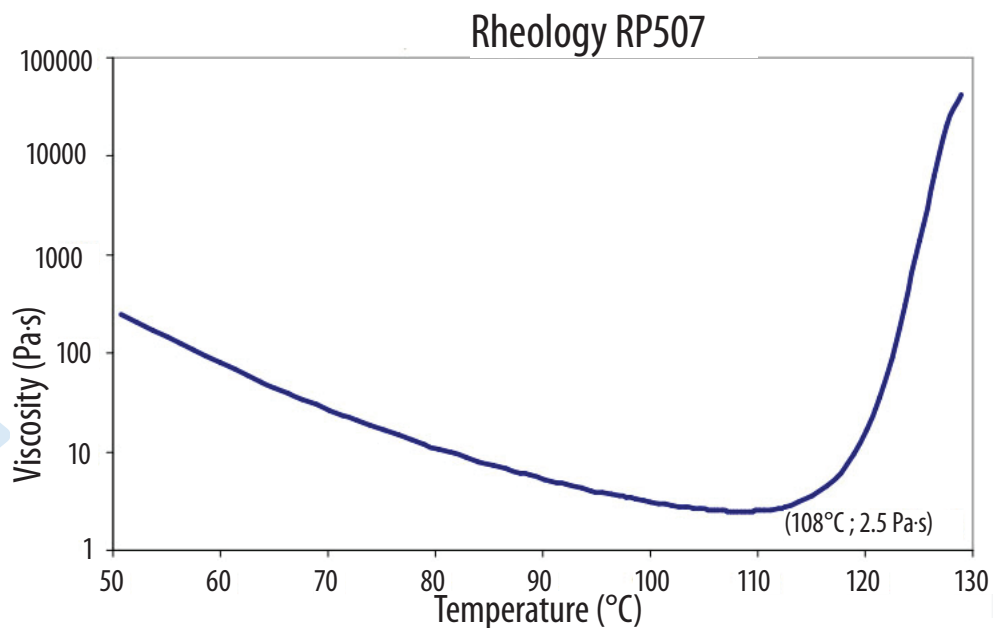
Performance testing should accompany alternative cure cycles to ensure suitability for particular applications.

Resin Properties

Heat up rate: 2°C/min

Gel time at 120°C:
8 to 11 minutes

Density of cured resin:
1.21





Mechanical Properties

Laminate of UD tape, 300 g/m² HT carbon fibre / 38% RP507 resin content: 6 layers of CTE1 30/RP507 at 0°

Cure cycle: 120°C for 2h / 5 bars + vacuum

Typical mechanical performance with 55% fibre volume content:

TESTS	STANDARD	PERFORMANCES	UNITS	DRY AT 23°C
ILSS	EN 2563	Strength	MPa	84
Tensile 0°	EN 2561 A type test piece	Strength	MPa	2212
		Modulus	GPa	131
Compression 0°	EN 2850 B1 type test piece	Strength	MPa	953
	EN 2850 B2 type test piece	Modulus	GPa	109
Flexural 0°	EN 2562 A type test piece	Strength	MPa	1651
		Modulus	GPa	111

All values are nominal.

Find out what PRF can do for your business

Make an enquiry today at:

t: +44 (0) 1202 680022

e: enquiries@prfcomposites.com

www.prfcomposites.com

PRF Composite Materials

3 Upton Road

Poole

Dorset BH17 7AA

Important Notice

All statements, technical information and recommendations offered are only for consideration and evaluation. Whilst they are believed to be accurate they are not guaranteed and are provided without warranty of any kind. No undertaking is given that the goods/products supplied are fit for its particular purpose. The buyer/user shall assume all risks and liabilities in connection therewith.

RP507 ed. 4.0 Mar 2016



Prepreg



Reinforcements



Resin



Aerospace
Adhesives



Shears



Tooling Block



Mould Release



Consumables