

Product Description

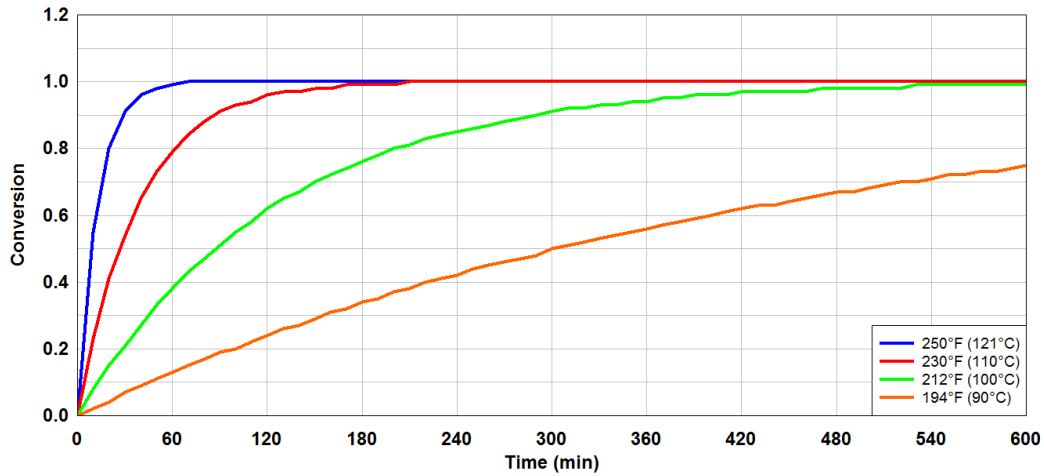
P²SI[®] 250P is a cost-effective unidirectional carbon fiber/epoxy prepreg specifically engineered for the manufacture of thick sections in wind energy applications, such as blade spars and roots. This low exotherm system allows for wind turbine blade manufacturers to use increased ramp rates for the production of thick composite sections with low void content and excellent mechanical properties, and reduces or potentially eliminates the need for intermediate debulking steps and the insertion of dry fabric layers for air removal during cure. P²SI[®] 250P is a low viscosity matrix designed for out-of-autoclave processing. It possesses low tack for ease of handling, a long outlife at room temperature, and cures at 250°F (121°C) in only 30 minutes for increased manufacturing efficiency.

Product Features

- Cost-effective solution for enhanced turbine blade performance
- Out-of-autoclave cure capability
- Low exotherm allows for increased manufacturing heating rates and low product void content
- Long outlife at room temperature
- Low tack for ease of handling
- Solvent-free prepreg system
- Ideal for the manufacture of thick composite sections
- Allows for reduction or potential elimination of the insertion of dry fabric layers
- Excellent mechanical characteristics
- Cures between 194°F (90°C) and 250°F (121°C)
- Full cure at 250°F (121°C) in only 30 minutes

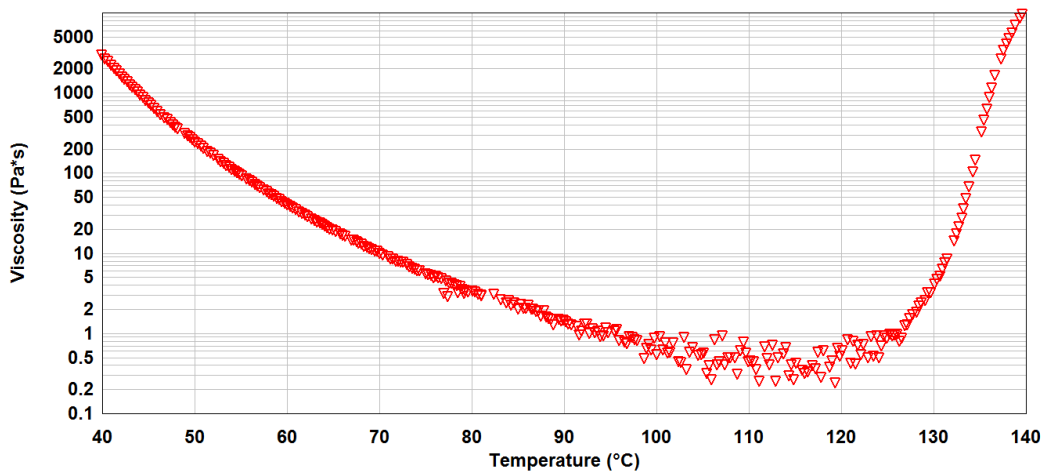
Matrix Cure Kinetics

Conversion as a function of time and temperature



Viscosity Profile

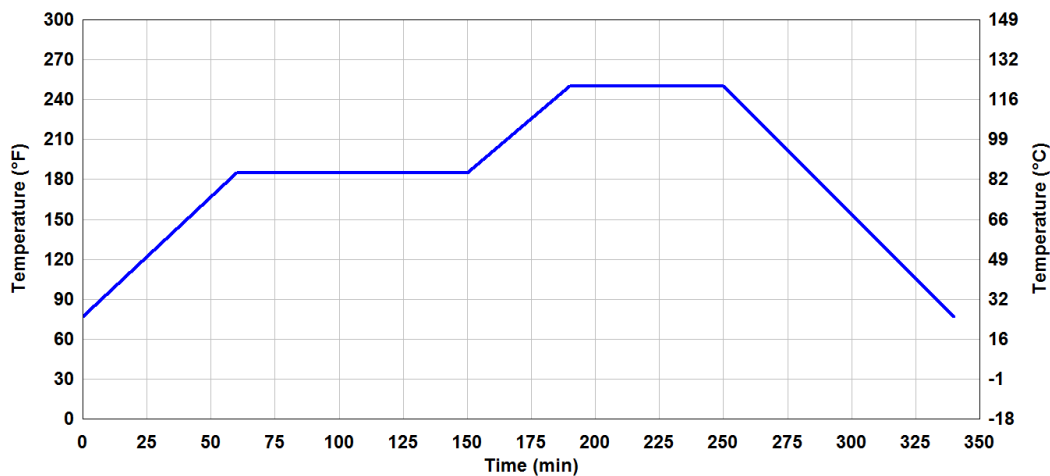
Heated 2°C/min to 140°C



Matrix/Prepreg Properties

Property	Value
Enthalpy (J/g)	182 ± 12
Outlife at 0°F (-18°C)	18 months
Resin Content (wt. %)	34
Fiber Areal Weight (g/m ²)	500
Prepreg Areal Weight (g/m ²)	758

Recommended Cure Cycle



Composite Properties

Property	Unit	Zoltek Panex 35	Grafil TRH50	ASTM Method
Fiber Volume Fraction	%	56	56	D792 / D3171
Glass Transition Temperature	°F (°C)	248 (120)	248 (120)	D4440
0° Tensile Strength	ksi (MPa)	267 (1842)	311 (2143)	D3039
0° Tensile Modulus	Msi (GPa)	19 (131)	20 (138)	D3039
0° Compression Strength	ksi (MPa)	192 (1323)	207 (1426)	D695
0° Compression Modulus	Msi (GPa)	18 (124)	19 (131)	D695
0° ILSS	ksi (MPa)	10 (69)	10 (69)	D2344
0° Flexure Strength	ksi (MPa)	195 (1346)	203 (1399)	D6272

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