



Product Overview

P²SI 635LM provides a unique balance of thermal stability, resin infusion processability, mechanical performance, and affordability.

Based on P²SI patent pending technology, P²SI 635LM offers significant versatility compared to competitive products in the marketplace, including a high use temperature (up to 550°F continuous), low melt viscosity, large processing window, and flexible cure behavior: cure cycles range from 600°F/4h with a postcure to 700°F/1h without a postcure. The ability to be cured for short times or lower temperatures is amenable to both cure temperature restrictions and component production schedules.

P²SI 635LM exhibits good thermooxidative stability, mechanical performance, and flexibility, making it one of the most versatile new materials.

Key Features

- **Large processing window**
- **Glass transition temperature of 635°F (335°C) without a postcure**
- **Can be cured at temperatures as low as 600°F (316°C) or as high as 700°F (371°C)**
- **No carcinogenic components**
- **Available as PMR-type prepreg or melt processable solid**
- **Low melt viscosity**
- **No crystallization**
- **Processable by resin infusion**
- **Shelf life: infinite (imidized solid); 6 months (resin solution/freezer storage)**

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Durability and Performance

P²SI 635LM Physical/Thermal Properties

Property	Value
Glass Transition Temperature (DSC, 10°C/min) – Neat Resin	335°C (635°F)
Glass Transition Temperature (DMA, 5°C/min) – S-2 Glass/16781	E' = 331°C (628°F) E'' = 361°C (682°F) tan δ = 368°C (694°F)
Maximum Moisture Gain (T650-35/UC309 8 HS; 8-ply)	1.03%
Thermo-oxidative Mass Loss	
600°F/100 h: T650-35/UC309 8 HS; 8-ply	0.51%
550°F/646 h: T650-35/UC309 8 HS; 8-ply	0.45%
600°F/100 h: S-2 Glass/16781/1059; 10-ply	0.73%
Microcracking After Above Aging Conditions (optical microscopy)	none

P²SI 635LM Rheological Properties

Property	Value
Softening Temperature	279°F (137°C)
Cure Exotherm Onset	621°F (327°C)
Processing Window (Δ)	342°F (190°C)
Minimum Dynamic Viscosity	3 P @ 330°C
Pot Life/Maximum Viscosity at 260°C	2 h / 60 P
Pot Life/ Maximum Viscosity at 280°C	2 h / 50 P
Pot Life/ Maximum Viscosity at 300°C	1 h / 40 P

P²SI 635LM Room Temperature Flexural Strength

Fiber Reinforcement	Aging Condition	Flexural Strength, ksi (MPa)
T650-35/UC309/8 HS	Control	136 (938)
	600°F/100 h	116 (800)
	550°F/646 h	109 (752)
	Moisture Saturated	101 (694)
S-2 Glass/16781/1059	Control	127 (876)



P²SI 635LM 550°F (288°C) Flexural Strength

Fiber Reinforcement	Aging Condition	Flexural Strength, ksi (MPa)
T650-35/UC309/8 HS	550°F/646 h	90 (621)
	Moisture Saturated	70 (483)

P²SI 635LM Room Temperature Interlaminar Shear Strength

Fiber Reinforcement	Aging Condition	ILSS, ksi (MPa)
T650-35/UC309/8 HS	Control	12.1 (83.4)
	600°F/100 h	10.3 (71.0)
	550°F/646 h	6.3 (43.4)
	Moisture Saturated	6.8 (46.9)
S-2 Glass/16781/1059	Control	9.8 (67.6)

P²SI 635LM 550°F (288°C) Interlaminar Shear Strength

Fiber Reinforcement	Aging Condition	ILSS, ksi (MPa)
T650-35/UC309/8 HS	550°F/646 h	6.0 (41.4)
	Moisture Saturated	5.3 (36.5)

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