PROOF® Research
ADVANCED COMPOSITES DIVISION

PRODUCT : P²SI® 635LM RTM RESIN

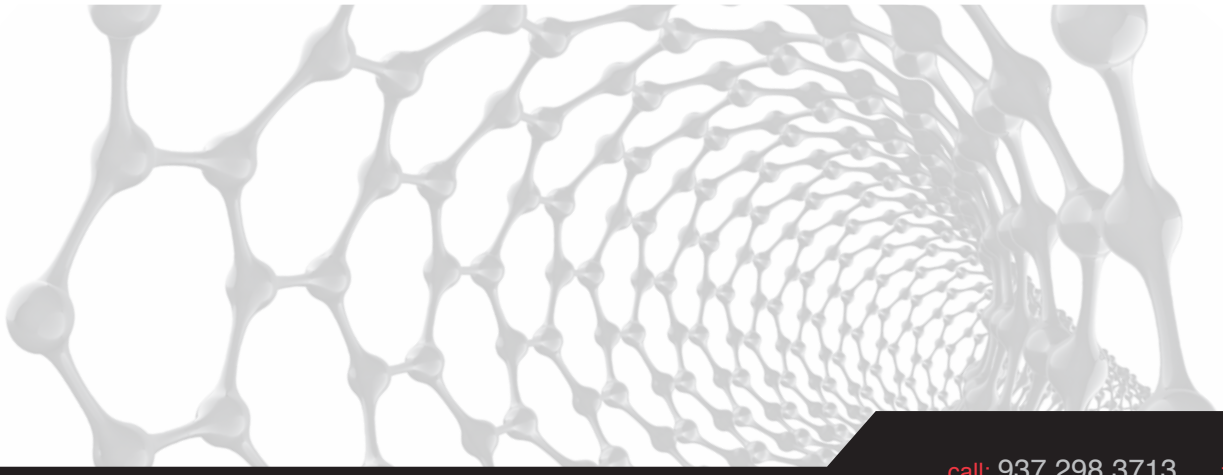
P²SI® 635LM provides a unique balance of thermal stability, resin infusion processability, mechanical performance, and affordability. P²SI® 635LM offers significant versatility compared to competitive products in the marketplace, including a high-use temperature (up to 550°F continuous), low-melt viscosity, large processing window, and flexible cure behavior. Cure cycles range from 600°F/4h with a post cure to 700°F/1h without a post cure. 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 thermo-oxidative stability, mechanical performance, and flexibility, making it one of the most versatile new materials we offer. P²SI® 635LM is available as a PMR-type prepreg or as a melt-processable solid.

RHEOLOGICAL PROPERTIES

PROPERTY	VALUE
Softening Temperature, °F (°C)	**279 (137**
Cure Exotherm Temperature, °F (°C)	**621 (327)**
Processing Window (Δ), °F (°C)	**342 (190)**
Minimum Dynamic Viscosity, Poise	
626°F (330°C)	**3**
Pot Life at Temperature, h	
500°F (260°C)	**2**
536°F (280°C)	**2**
572°F (300°C)	**1**
Maximum Viscosity at Temperature, Poise	
500°F (260°C)	**60**
536°F (280°C)	**50**
572°F (300°C)	**40**

RESIN PROPERTIES

PROPERTY	NEAT RESIN	T650-35 8HS/UC309	16781 S-2 GLASS	TEST METHOD
Glass Transition Temperature, °F (°C)	**635 (335)**	—	—	**ASTM D3418**
Glass Transition Temperature, °F (°C)				**ASTM D7028**
Storage Modulus, E'	—	—	**628 (331)**	
Loss Modulus, E"	—	—	**682 (361**	
tanδ	—	—	**694 (368)**	
Maximum Moisture Gain, 8-ply, %	—	**1.03**	—	**ASTM D5229**
Thermo-Oxidative Mass Loss, %				—
600°F (316°C) / 100h	—	**0.51**	**0.73**	
550°F 288°C) / 646h	—	**0.45**	—	



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PRODUCT : P²SI® 635LM RTM RESIN

TYPICAL MECHANICAL PROPERTIES FOR TEXTILE COMPOSITE LAMINATES

PROPERTY	T650-35 8HS/UC309	16781 S-2 GLASS	TEST METHOD
THREE-POINT FLEXURAL STRENGTH, ksi (MPa)			**ASTM D790**
75°F 23°C)	**136 (938)**	**127 (876)**	
Aging: 600°F (316°C) / 100h			
75°F 23°C)	**116 (800)**	—	
Aging: 550°F (288°C) / 646h			
75°F 23°C)	**109 (752)**	—	
550°F 288°C)	**90 (621)**	—	
Aging: Moisture Saturated			
75°F 23°C)	**101 (694)**	—	
550°F 288°C)	**70 (483)**	—	
INTERLAMINAR SHEAR STRENGTH, ksi (MPa)			**ASTM D2344**
75°F 23°C)	**12.1 (83.4)**	**9.8 (67.6)**	
Aging: 600°F (316°C) / 100h			
75°F 23°C)	**10.3 (71.0)**	—	
Aging: 550°F (288°C) / 646h			
75°F 23°C)	**6.3 (43.4)**	—	
550°F 288°C)	**6.0 (41.4)**	—	
Aging: Moisture Saturated			
75°F 23°C)	**6.8 (46.9)**	—	
550°F 288°C)	**5.3 (36.5)**	—	

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