

E-746 Epoxy Prepregs

Park's E-746 is a modified epoxy resin system designed to retain excellent mechanical properties after extended exposure to high temperature. E-746 has a proven history in many demanding aerospace applications

Key Features & Benefits

- Excellent retention of mechanical properties after long-term high temperature exposure
- Soft tack and drape properties
- Long ambient out-time for maximum process flexibility
- Good electrical properties for RF applications
- Meets requirements of MIL-R-9300B Type II

Product Forms

- Available on a wide variety of reinforcements
- Solution coated fabrics up to 60 inches wide
- Compatible with Autoclave or Press Molding processes

Prepreg Storage Life

- Tack Life: 14 days @ 75°F
- Out Life: 30 days @ 75°F
- Shelf Life: 12 months @ 0°F

Autoclave Cure Cycle

- Apply 24" Hg vacuum (minimum) for 1 hour before beginning heat cycle
- Apply 45 – 80 psi autoclave pressure.
- Vent vacuum when autoclave pressure reaches 15 – 20 psi
- Raise product temperature from RT to 230°F at 2 – 5°F/min
- After 30 minute hold time at 230°F, continue ramp to 350°F
- Hold product at cure temperature for 2 hours
- Cool product to 150°F at no more than 8°F/min
- Recommended post-cure: 1 hours at 500°F or 4 hours at 400°F

Note: These guidelines are provided to assist Park material users with general recommendations for successful processing. The recommendations are for general review purposes only and process adjustments may be required to achieve optimum results in your specific manufacturing environment.

Applications / Qualifications

- Secondary Aircraft Structures
- Radomes
- Nacelles
- Inlet Ducts
- Fairings

Qualified Specifications

- SS9578
- GMS4001

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Aerospace Composite Materials

E-746 Epoxy Prepregs

Technical Datasheet

Prepreg and Laminate Physical Properties

Reinforcement	7781 E-Glass	581 Quartz	3k 5HS Carbon
Fabric Area Weight (gsm)	300	292	280
Prepreg Resin Content (%)	34- 40	34- 40	35-41
Resin Flow (325°F, 50 psi) (%)	7 – 21	7 – 21	7-21
Volatiles (325°F) (% max)	2.0	2.0	2.0
Gel Time (min)	1 – 3	1 – 3	1 – 3
Laminate Tg – std cure (°C)	180	180	180
Laminate Tg – post cure (°C)	230	230	230
Dielectric Constant (Dk) @ 9.375GHz	4.2	3.3 – 3.6	-
Loss Tangent (Df) @ 9.375GHz	0.016	0.12 – 0.014	-

Laminate Mechanical Properties

Reinforcement	7781 E-glass	7781 E-glass	3k 5HS Carbon
Cure Cycle	Autoclave	Autoclave With Post-Cure	Autoclave
Tensile Strength, 0° (Ksi)			
75°F Dry	65	70	90
280°F Dry	50	55	--
350°F Dry	45	65	--
420°F Dry	45	60	--
500°F Dry	45	60	--
ASTM-D-638			
Compressive Strength (Ksi)			
75°F Dry	75	60	--
280°F Dry	50	55	--
350°F Dry	--	50	--
420°F Dry	--	30	--
500°F Dry	--	25	--
ASTM-D-695			
Flexural Strength (Ksi)			
75°F Dry	90	85	127
280°F Dry	75	75	--
350°F Dry	40	50	--
420°F Dry	30	40	--
500°F Dry	20	30	--
ASTM-D-790			
Short-Beam Shear Strength (Ksi)			
75°F Dry	6.9	6.5	7.3
250°F Dry	--	--	6.4
350°F Dry	3.0	4.5	4.5
ASTM-D-2344			

All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a company representative directly.

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