Product Overview

E-761 Epoxy Prepregs

Park's E-761 is a versatile self-adhesive epoxy matrix for use in aerospace and commercial application where ease of processing and cost are key considerations.

Key Features & Benefits

- Controlled flow for ease of processing
- Self adhesive for honeycomb or foam sandwich laminates without the use of film adhesive
- Flexible cure temperature 180°F to 250°F
- Good electrical properties
- Flame and fire retardant per FAR 25.853
- Wet service temperatures up to 160°F

Product Forms

- Available on a wide variety of reinforcements, including fiberglass, quartz (including Astroquartz), graphite and aramid (including Kevlar®)
- Solution coated fabrics up to 60 inches wide
- Also available on aluminized fiberglass (TEF-7)
- Compatible with Autoclave, Vacuum Bag/Oven or Press Cure processes

Applications / Qualifications

- Radomes
- Aircraft Interiors
- Secondary Aircraft Structures
- Sandwich Panels
- MRI Resonators
- Widely specified on commercial and military aircraft programs

- Tested in accordance with BMS-8-79 upon request

Global Availability

For Information about Park's materials:

Americas	+1.316.283.6500
Asia Pacific	+656.861.7117
Europe	+33-562-985290

info@parkelectro.com

www.parkelectro.com

PARK ELECTROCHEMICAL CORP.

Technical Datasheet

E-761 Epoxy Prepregs

Prepreg and Laminate Physical Properties - Glass Reinforced

Reinforcement	7781 E-Glass	120 E-Glass	6781 S2-Glass	4581 Quartz
Fabric Area Weight (Oz/SqYd)	8.95	3.16	8.97	8.5
Prepreg Resin Content (%)	39	45	32	38
Resin Flow (275°F, 50 psi) (%)	14	14	14	18
Volatiles (275°F, 8 min) (%)	1.5	1.5	1.5	1.5
Gel Time (sec)	240	350	240	350
Per Ply Thickness (inches)	.009	.004	.010	.010
Tg (dry, by DMA)	115°C / 240°F			

Prepreg and Laminate Physical Properties – Non-Glass Reinforcements

Reinforcement	3K PW Carbon	3K 8HS Carbon	285 Kevlar®	Spectra® 951 - PT
Fabric Area Weight (Oz/SqYd)	5.69	10.91	5.0	2.9
Prepreg Resin Content (%)	42	42	53	50
Resin Flow (275°F, 50 psi) (%)	10	12	20	6
Volatiles (275°F, 8 min) (%)	2%	2%	2.0	1.0
Gel Time (sec)	360	375	350	490
Per Ply Thickness (inches)	.007	.014	.009	.010
Tg (dry, by DMA)	115°C / 240°F			

Selected Laminate Electrical Properties

	Frequency	Dielectric Constant (Dk)	Loss Tangent (Df)
E-761 w/ E-Glass	9.375 GHz	4.20	0.013
	18 GHz	4.20	0.013
E-761 w/ Quartz	9.375 GHz	3.30	0.009
	18 GHz	3.15	0.008
E-761 w/ Spectra® 951	5 – 18 GHz	2.6 – 2.8	0.010

Sandwich Properties (7781 reinforcement)

	Mold Surface	Bag Surface
Climbing Drum Peel (in-lb/3 in) *ASTM-D-1781, room temp*	14.7	14.8
Flatwise Tensile Strength (psi)	840	693 / 549
Long Beam Flexure Strength (lbs)	205	157 / 130
Long Beam Flexure (P/Y lb/in)	201	152 / 124

All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a Park representative directly. Park reserves the right to change these typical values as a natural process of refining our testing equipment and techniques.

PARK ELECTROCHEMICAL CORP.

E-761 Epoxy Prepregs

Laminate Mechanical Properties - Glass Reinforced

Reinforcement			7781 E-Glass	120 E-Glass	6781 S2-Glass	4581 Quartz
Tensile Strength, 0° (Ksi)		ASTM-D-638				
-65°F	Dry		95	83	--	108
70°F	Dry		72	66	88	86
160°F	Dry		65	60	--	72
200°F	Dry		47	53	--	--
70°F	Wet		59	50	86	86
160°F	Wet		52	42	--	72
Tensile Modulus (Msi)		ASTM-D-638				
-65°F	Dry		3.5	3.1	--	3.0
70°F	Dry		3.7	3.0	--	3.6
160°F	Dry		3.7	3.2	--	2.9
200°F	Dry		3.9	3.2	--	--
70°F	Wet		3.4	3.2	--	2.9
160°F	Wet		3.3	2.9	--	--
Compressive Strength (Ksi)		ASTM-D-695				
-65°F	Dry		84	90	--	74
70°F	Dry		66	70	74	65
160°F	Dry		55	60	--	59
200°F	Dry		52	52	--	--
70°F	Wet		56	58	66	--
160°F	Wet		47	47	--	34
Compressive Modulus (Msi)		ASTM-D-695				
-65°F	Dry		3.7	3.2	--	3.3
70°F	Dry		3.6	3.2	--	2.9
160°F	Dry		3.5	3.1	--	3.1
200°F	Dry		3.5	2.9	--	--
70°F	Wet		3.6	3.3	--	--
160°F	Wet		3.5	3.1	--	3.0
Flexural Strength (Ksi)		ASTM-D-790				
-65°F	Dry		117	110	--	98
70°F	Dry		95	86	118	92
160°F	Dry		77	78	--	70
200°F	Dry		66	66	--	--
70°F	Wet		80	72	--	--
160°F	Wet		65	60	--	31
Flexural Modulus (Msi)		ASTM-D-790				
-65°F	Dry		3.2	2.8	--	2.7
70°F	Dry		3.2	2.8	--	3.2
160°F	Dry		2.9	2.7	--	2.4
200°F	Dry		2.8	2.5	--	--
70°F	Wet		3.0	2.7	--	--
160°F	Wet		2.7	2.5	--	2.2
Short Beam Shear (Ksi)		ASTM-D-2344				
-65°F	Dry		11.5	11.6	--	9.0
70°F	Dry		9.0	8.0	8.6	7.0
160°F	Dry		6.5	6.3	--	5.3
200°F	Dry		5.2	5.4	--	2.2
70°F	Wet		8.0	7.0	--	--
160°F	Wet		6.0	5.2	--	--

All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a Park representative directly. Park reserves the right to change these typical values as a natural process of refining our testing equipment and techniques.

E-761 Epoxy Prepregs

Laminate Mechanical Properties - Non-Glass Reinforced

Reinforcement			3K PW Carbon	3K 8HS Carbon	285 Kevlar®	Spectra® 951 - PT
Tensile Strength, 0° (Ksi)		ASTM-D-638				
70°F	Dry		94	85	76	65
160°F	Dry		86	--	--	--
200°F	Dry		79	--	--	--
70°F	Wet		90	--	61	--
160°F	Wet		82	--	--	--
Tensile Modulus (Msi)		ASTM-D-638				
70°F	Dry		8.8	8.0	5.0	--
160°F	Dry		8.7	--	--	--
200°F	Dry		8.7	--	--	--
70°F	Wet		8.7	--	4.3	--
160°F	Wet		8.4	--	--	--
Compressive Strength (Ksi)		ASTM-D-695				
70°F	Dry		62	74	28	5
160°F	Dry		51	--	--	--
200°F	Dry		45	--	--	--
70°F	Wet		58	--	26	--
160°F	Wet		45	--	--	--
Compressive Modulus (Msi)		ASTM-D-695				
70°F	Dry		9.0	7.7	4.1	3.9
160°F	Dry		9.8	--	--	--
200°F	Dry		8.6	--	--	--
70°F	Wet		8.4	--	3.8	--
160°F	Wet		8.6	--	--	--
Flexural Strength (Ksi)		ASTM-D-790				
-65°F	Dry		--	--	73	--
70°F	Dry		108	6.2	66	14
160°F	Dry		84	--	54	--
200°F	Dry		79	--	48	--
70°F	Wet		100	--	64	--
160°F	Wet		71	--	51	--
Flexural Modulus (Msi)		ASTM-D-790				
-65°F	Dry		--	--	3.6	--
70°F	Dry		7.2	7.9	3.8	--
160°F	Dry		6.8	--	3.6	--
200°F	Dry		6.9	--	3.4	--
70°F	Wet		6.9	--	3.9	--
160°F	Wet		6.8	--	3.8	--
Short Beam Shear (Ksi)		ASTM-D-2344				
-65°F	Dry		--	--	5.6	--
70°F	Dry		7.4	7.9	6.0	--
160°F	Dry		5.5	--	4.9	--
200°F	Dry		4.7	--	--	--
70°F	Wet		6.5	--	5.4	--
160°F	Wet		4.4	--	4.2	--

All test data provided are typical values and not intended to be specification values. For review of critical specification tolerances, please contact a Park representative directly. Park reserves the right to change these typical values as a natural process of refining our testing equipment and techniques.

PARK ELECTROCHEMICAL CORP.

Processing Guidelines

E-761 Epoxy Prepregs

Prepreg Storage Life

Tack Life: 14 days @ 75°F
Out Life: 30 days @ 75°F
Shelf Life: 6 months @ 0°F

Note: The following 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.

Autoclave Cure Cycle

- Apply 24″Hg vacuum (minimum) and 40 -100 psi pressure
- Vent Vacuum when autoclave pressure reaches 15 – 20 psi
- Increase from room temperature to 250 – 260 °F at a rate of 2-5°F/min (maximum)
    - Reduce cure temperature to 230°F (maximum) for Spectra® prepregs
- Hold cure temperature for 90 – 120 minutes
- Cool to 150°F at 8°F/min prior to releasing autoclave pressure

Vacuum Bag / Oven Cure Cycle

- Apply 24″Hg vacuum (minimum) and maintain throughout cure cycle
- Increase from room temperature to 250 – 260 °F at a rate of 2-5°F/min (maximum)
    - Reduce cure temperature to 230°F (maximum) for Spectra® prepregs
- Hold temperature and vacuum for 90 – 120 minutes
- Cool to 150°F at 8°F/min prior to releasing vacuum