

### 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 152 cm wide
- Compatible with Autoclave or Press Molding processes

#### Applications / Qualifications

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

#### Qualified Specifications

- SS9578
- GMS4001

#### Global Availability

##### For Information about Park's materials:

##### North America

Waterbury, CT +1.203.755.1344

Newton, KS +1.316.281.6231

Asia Pacific +656.861.7117

Europe +33-562-985290

[info@parkelectro.com](mailto:info@parkelectro.com)

[www.parkelectro.com](http://www.parkelectro.com)

### E-746 Epoxy Prepregs

#### 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 (163°C, 345 kPa) (%)	7 – 21	7 – 21	7-21
Volatiles (163°C) (% 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	-

#### Prepreg Storage Life

Tack Life: 14 days @ 24°C  
Out Life: 30 days @ 24°C  
Shelf Life: 12 months @ -18°C

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 610 Torr vacuum (minimum) for 1 hour before beginning heat cycle
- Apply 310 – 552 kPa autoclave pressure.
- Vent vacuum when autoclave pressure reaches 103 – 138 kPa
- Raise product temperature from RT to 110°C at 2 – 5°C/min
- After 30 minute hold time at 110°C, continue ramp to 177°C
- Hold product at cure temperature for 2 hours
- Cool product to 66°C at no more than 5°C/min
- Recommended post-cure: 1 hours at 260°C or 4 hours at 204°C

*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-746 Epoxy Prepregs

#### Laminate Mechanical Properties

Reinforcement	7781 E-glass	7781 E-glass	3k 5HS Carbon
<b>Cure Cycle</b>	Autoclave	Autoclave With Post-Cure	Autoclave
<b>Tensile Strength, 0° (Mpa)</b>			
24°C Dry	448	483	621
138°C Dry	345	379	--
177°C Dry	310	448	--
216°C Dry	310	414	--
260°C Dry	310	414	--
ASTM-D-638			
<b>Compressive Strength (Mpa)</b>			
24°C Dry	517	414	--
138°C Dry	345	379	--
177°C Dry	--	345	--
216°C Dry	--	207	--
260°C Dry	--	172	--
ASTM-D-695			
<b>Flexural Strength (Mpa)</b>			
24°C Dry	621	586	876
138°C Dry	517	517	--
177°C Dry	276	345	--
216°C Dry	207	276	--
260°C Dry	138	207	--
ASTM-D-790			
<b>Short-Beam Shear Strength (Mpa)</b>			
24°C Dry	47.6	44.8	50
121°C Dry	--	--	44
177°C Dry	20.7	31.0	31
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. The above processing guides are recommendations only and intended for general review purposes. Process adjustments may be required to achieve optimum results in your specific manufacturing environment.

Park Electrochemical Corp. reserves the right to make changes without notice to any products described herein. Park does not assume any liability arising out of the application or use of any product described herein; and it does not grant any license under its patent or other rights or any such rights of others. Park also disclaims all warranties whether expressed, implied or statutory, including implied warranties of merchantability or fitness for a particular purpose.

Aeroglide™, CoreFix®, Easycure™, Nelco®, Nelcote®, Nova™, PeelCote™ and Powerbond™ are trademarks of Park Electrochemical Corp.

