## Park Advanced Composite Materials

## **Product Overview**

## E-720 Epoxy Prepregs

Park's E-720 is a modified epoxy resin system designed to retain excellent mechanical properties after extended exposure to high temperature. E-720 has a proven history in many demanding aerospace applications.

### **Key Features & Benefits**

- Excellent retention of mechanical properties after long-term high temperature exposure
- Long out-time for easy processing
- Good electrical properties

#### **Product Forms**

- Available on a wide variety of reinforcements including fiberglass and quartz
- 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

## **Global Availability**

### For Information about Park's materials:

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## Park Advanced Composite Materials

## **Processing Guideline**

## E-720 Epoxy Prepregs

## **Prepreg and Laminate Physical Properties**

Reinforcement	7781 E-Glass	581 Quartz
Fabric Area Weight (gsm)	300	292
Prepreg Resin Content (%)	33 – 37	33 – 37
Resin Flow (163°C, 345 kPa) (%)	10 – 24	10 – 24
Volatiles (135°C) (% max)	2.0	2.0
Gel Time (min)	1 – 2	1 – 2
Laminate Tg – std cure (°C)	180	180
Laminate Tg – post cure (°C)	230	230
Barcol Hardness	80	
Dielectric Constant (Dk)	4.2	3.3 – 3.6
Loss Tangent (Df)	0.015	0.012 - 0.014

### **Prepreg Storage Life**

Tack Life: 14 days @ 24°C Out Life: 30 days @ 24°C Shelf Life: 6 months @ -18°C <u>Note</u>: 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 414 kPa autoclave pressure.
- Raise product temperature from RT to 110°C at 2 3°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 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.

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# Park Advanced Composite Materials

## Technical Datasheet

# E-720 Epoxy Prepregs

## **Laminate Mechanical Properties**

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Reinforcement		7781	581
		E-glass	Quartz
Tensile Streng	gth, 0° (MPa)		
24°C	Dry	414	621
177°C	Dry	345	
216°C	Dry	310	414
260°C	Dry	310	
ASTM-D-638			
	Strength (MPa)		
24°C	Dry	414	345
177°C	Dry	359	
216°C	Dry	359	207
260°C	Dry	310	
ASTM-D-695			
Flexural Strer			
24°C	Dry	586	621
177°C	Dry	414	
216°C	Dry	345	276
260°C	Dry	207	
ASTM-D-790	I (0D.)		
Flexural Modu			
24°C	Dry	23.4	23.4
177°C	Dry	20.0	
216°C	Dry	19.3	13.8
260°C	Dry	16.5	
ASTM-C-790	hoor Ctonath (MDs)		
	Shear Stength (MPa)	40.0	
24°C	Dry	46.2	
177°C ASTM-D-2344	Dry	33.1	
A3 I IVI-D-2344			

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