

# EPM503-1

## LOW HEAT RELEASE EPOXY PREPREG

EPM503-1 is a toughened, low heat release epoxy prepreg system designed for a variety of aircraft interior applications. EPM503-1 provides the low OSU heat release typically attributed to phenolic systems combined with the mechanical properties of an epoxy system. EPM503-1 is self-adhesive to honeycomb and has excellent surface finish. EPM503-1 is currently offered as a press grade system.

### FEATURES AND BENEFITS

- Self-extinguishing. Meets FAR 25-853 flammability requirements
- Very low heat release (30/30)
- Halogen, antimony, formaldehyde, phenol-free
- Good mechanical properties
- Self-adhesive to honeycomb
- High quality surface finish

### PRODUCT FORMS

- EPM503-1 is available as a woven fabric prepreg in carbon and glass reinforcements. Resin content and other specifications can be tailored as per customer requirements.
- Standard fabric prepreg widths: 50", 60"

### PHYSICAL PROPERTIES

Fiber Reinforcement Type	7781 E-Glass
Fiber Areal Weight (gsm)	300
Resin Content (% by wt.)	35-41
Resin Flow (%)	10-20
Gel (min.)	5-8
Volatiles (% max)	<1
Tg (onset, DMA)	288°F (142°C)
Cured per Ply Thickness	0.009" (0.23mm)

Note: Resin Flow, Gel and Volatiles tested at 275°F (135°C)

### LAMINATE PROPERTIES

Fiber Reinforcement Type	Units	7781 E-Glass
Cure Type for Evaluation		Press
Tensile Strength	ksi (MPa)	70 (482)
Tensile Modulus	Msi (GPa)	4.0 (28)
Compression Strength	ksi (MPa)	80 (549)
Compression Modulus	Msi (GPa)	4.9 (34)
Flexural Strength	ksi (MPa)	92 (630)
Flexural Modulus	Msi (GPa)	3.5 (24)
Short Beam Shear Strength	ksi (MPa)	9.3 (64)

Note: Room temperature, dry condition. Values are average and do not constitute a specification.



### SANDWICH PROPERTIES

Fiber Reinforcement Type	Units	7781 E-Glass
Cure Type for Evaluation		Press
Long Beam Flexural Strength (2 ply)	ksi (MPa)	34 (234)
Climbing Drum Peel (1 ply)	in lbs/3-inch width	15

Note: Room temperature, dry condition. Values are average and do not constitute a specification.  
Specimens tested on nomex honeycomb, 0.5" thick, 3.0 pcf, 1/8" cell

### FLAMMABILITY PROPERTIES

Fiber Reinforcement Type	Units	7781 E-Glass
OSU, Peak Heat Release Rate	kw/m <sup>2</sup>	<30
OSU, Total Heat Release Rate	kw/min/m <sup>2</sup>	<30
Smoke Density (ASTM E662-96)	Ds	10

Note: Specimens tested with one ply per side on 0.25" thick nomex honeycomb.

	Units	7781 E-Glass
60 Second Vertical Ignition		
Flame Time	seconds	0
Burning Length	inches	1.3
Drip Extinguish Time	seconds	0

Note: Specimens tested with one ply per side on 0.25" thick nomex honeycomb.

### PROCESS INFORMATION

The following are general recommendations for successful processing. Adjustments may be required to achieve optimum results in your specific manufacturing environment.

#### Press Cycle

(In-hot, Out-hot)

- Recommended 60 - 90 psi pressure
- Cure at 260 - 280°F (127 - 138°C) for 30 - 60 min.
- Bumps recommended (no later than 5 min.)

Shelf Life	
Room Temperature (77°F/25°C)	6weeks
0°F (-18°C)	12 months

Quality Certifications - Barrday Composite Solutions is ISO9001 and AS9100 certified.

Note: EPM503 Prepreg is wound with a polyethylene film liner or paper backing for easy release. The rolls are sealed in polyethylene film bags to protect prepreg from moisture and other contaminants. The bags should remain sealed while the prepreg is under refrigeration and only removed when the prepreg has had sufficient time to warm to room temperature. When not in use, the prepreg should be returned to refrigerated storage. Care should be exercised to limit out-time of the prepreg in order to insure maximum shelf life. Torn bags should be replaced. The data presented herein has been developed under controlled manufacturing. No warranty is expressed or implied regarding the accuracy or use of this data or the use of this product. It is the responsibility of the end user to determine suitability for use.

