



EPM505 LOW HEAT RELEASE EPOXY PREPREG

EPM505 is a toughened, low heat release epoxy prepreg system designed for a variety of aircraft interior applications. EPM505 provides the low OSU heat release typically attributed to phenolic systems combined with the mechanical properties of an epoxy system. EPM505 is self-adhesive to honeycomb and has excellent surface finish. EPM505 is offered as a bag grade system. For press applications, we suggest EPM503-1.

FEATURES AND BENEFITS

- Self-extinguishing. Meets FAR 25-853 flammability requirements
- Low heat release (sub 40/40)
- Halogen, antimony, formaldehyde, phenol-free
- Good mechanical properties
- Self-adhesive to honeycomb and metal tooling
- High quality surface finish
- Designed for bag molding operations

PRODUCT FORMS

EPM505 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"
- Uni-directional tape up to 60" wide

PHYSICAL PROPERTIES

Fiber Reinforcement Type	7781 E-Glass
Fiber Areal Weight (gsm)	300
Resin Content (% by wt.)	40
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		Bag/Oven
Tensile Strength	ksi (MPa)	51 (352)
Tensile Modulus	Msi (GPa)	3.2 (22)
Compression Strength	ksi (MPa)	68 (469)
Flexural Strength	ksi (MPa)	81 (558)
Flexural Modulus	Msi (GPa)	2.8 (19)
Short Beam Shear Strength	ksi (MPa)	6.2 (43)

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		Bag/Oven
Long Beam Flexural Strength (1 ply)	ksi (MPa)	17 (114)
Climbing Drum Peel (1 ply)	in lbs/3-inch width	8.4

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 ²	<40
OSU, Total Heat Release Rate	kw/min/m ²	<40

Note: Specimens tested with one ply per side on 1/8" 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.

Oven Bag Cure

- Apply full vacuum at 15 psi
- Ramp 9°F (5°C) per minute
- Hold at 284°F (140°C) for 60 minutes
- Cool 9°F (5°C) per minute

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

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

Note: EPM505 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.