

EPH302

RAPID CURE EPOXY

EPH302 is a moderate T_g, highly toughened, controlled flow epoxy prepreg system that can cure in as low as 3 minutes via compression molding process and is designed for high volume, structural applications in automotive and other industrial markets.

FEATURES AND BENEFITS

- Rapid (sub-5 minute) curing system
- Outstanding delamination resistance
- High clarity
- Versatile cure cycle

PRODUCT FORMS

EPH302 is available as a uni-directional tape or woven fabric prepreg in a variety of reinforcements. Resin content, tack and other specifications can be tailored as per customer requirements.

- Standard fabric prepreg widths: 50", 60"
- Unidirectional tape up to 70" wide

PHYSICAL PROPERTIES

Fiber Reinforcement Type	Standard Modulus Carbon UD Tape	3k 2 x 2 Twill
Fiber Areal Weight (gsm)	205	195
Resin Content (% by wt.)	41	40
Volatiles (% max)	1	1
T _g (onset, DMA)	285°F (140°C)	285°F (140°C)
Specific gravity	1.5	1.5

LAMINATE PROPERTIES - ROOM TEMPERATURE DRY CONDITION

	Units	Standard Modulus 50K UD Tape	3K 2x2 Twill
Cure Type		Press	Press
Tensile Strength (0°)	Ksi (MPa)	258 (1,778)	136 (939)
Tensile Modulus (0°)	Msi (GPa)	20.6 (142)	10.4 (72)
Tensile Strength (90°)	Ksi (MPa)	9.1 (63)	
Tensile Modulus (90°)	Ksi (MPa)	1.2 (8.2)	
Compression Strength (0°)	Ksi (MPa)	223 (1,534)	99 (682)
Compression Modulus (0°)	Msi (GPa)	19.1 (132)	10.4 (72)
Compression Strength (90°)	Ksi (MPa)	24.5 (169)	
Compression Modulus (90°)	Msi (GPa)	1.4 (9.6)	
In-plane Shear Strength	Ksi (MPa)	13.5 (93)	15.4 (106)
In-plane Shear Modulus	Msi (GPa)	0.6 (3.9)	0.6 (4.5)
Short Beam Shear Strength (0°)	Ksi (MPa)	13.8 (95)	

Note: Values are average and do not constitute a specification. 0° tensile and compression values normalized to fiber vf of 60%.



LAMINATE PROPERTIES - 185°F (85°C) DRY CONDITION

	Units	Standard Modulus 50K UD Tape
Cure Type for Evaluation		Press
Tensile Strength (0°)	Ksi (MPa)	224 (1,544)
Tensile Modulus (0°)	Msi (GPa)	19.9 (137)
Tensile Strength (90°)	Ksi (MPa)	7.8 (54)
Tensile Modulus (90°)	Ksi (MPa)	1.0 (6.6)
Compression Strength (0°)	Ksi (MPa)	147 (1,016)
Compression Modulus (0°)	Msi (GPa)	20.0 (138)
Compression Strength (90°)	Ksi (MPa)	16.0 (110)
Compression Modulus (90°)	Msi (GPa)	1.0 (7.1)
In-plane Shear Strength	Ksi (MPa)	0.8 (57)
In-plane Shear Modulus	Msi (GPa)	0.3 (2.4)

Note: Values are average and do not constitute a specification. 0° tensile and compression values normalized to fiber vf of 60%.

PROCESS INFORMATION

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

Press Cycle (In-out, Out-hot)

- Recommended 300-500 psi pressure
- Cure at 300°F (150°C) for 3-5 min.
- Cure at 285°F (140°C) for 5-10 min.
- Cure at 265°F (130°C) for 20 -30 min.
- Cure at 250°F (121°C) for 45-60 min.

Autoclave Cycle

- 2-4°F (1-2°C)/min. ramp to 250°F (121°C) at 100-150 psi
- Hold for 60 min.

Shelf Life	
Room Temperature (77°F/25°C)	4 weeks
0°F (-18°C)	1 year

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

Note: EPH302 Prepreg 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.

