

EPOXY PREPREG

Epoxy resins are a family of thermosets that offer a broad variety of performance characteristics. Epoxies are well known for their strength, toughness and their ability to be formulated to cure under a wide variety of time and temperature conditions. Epoxy prepregs are structural materials that are used in a wide variety of applications in the composites industry. In protective applications they can provide structural support to strengthen and stiffen soft armor structures as well as to reinforce ceramic plates to provide multi-hit resistance to armor piercing rounds.

FEATURES AND BENEFITS

- Variety of cure temperature and times
- Snap cure grades available
- Flame retardant grades available
- Wide variety of temperature resistance

PRODUCT FORMS

Barrday's epoxy systems are available on a wide variety of fabrics such as E-glass, S-glass, aramid and carbon fibers. Unidirectional prepregs are available as well.

PROCESS INFORMATION

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

	High Performance	Fast Cure, Toughened Epoxy	Low Temperature
Resin	EPM105	EPM301 ^{(1) (2)}	EP200HT ⁽²⁾
Temperature	250 °F (121 °C)	275°F (135°C)	170 – 210°F (77 – 99°C)
Pressure (psi)	45 – 70	45 – 70	45 – 70
Time (min)	60-90 min	20 min	60 min at 210°F (99°C)
Shelf Life	4 Weeks at 77°F (25°C) 12 Months at 0°F (-18°C)	10 days at 77°F (25°C) 12 Months at 0°F (-18°C)	4 Weeks at 77°F (25°C) 12 Months at 0°F (-18°C)

(1) Passes both 60 second and 12 second vertical ignition tests listed in FAR 25.253.

(2) Good for co-molding with high molecular weight polyethylene

COMMON EPOXY CONFIGURATIONS

	Style 1144 EPM105	Style 1144 EPM301	Style 7781 EPM105
Applications	Helmets/Plates	Helmets/Plates	Plates
Finished (Coated / Impregnated) Fabric Weight	9.9 oz/yd ² 335 g/m ²	9.9 oz/yd ² 335 g/m ²	15.4 oz/yd ² 524 g/m ²
Pick Count	13 x 13	13 x 13	57 x 54
Weave Type	2 x 2 Twill	2 x 2 Twill	8H Satin
Fiber Denier	1780 Denier (1980 Dtex)	1780 Denier (1980 Dtex)	68 Denier (75 Dtex)
Fiber Type	3K T300 Carbon	3K T300 Carbon	E-Glass
Typical Resin Content	38 ± 2%	38 ± 2%	43 ± 2%

Disclaimer: The data presented herein has been developed under controlled manufacturing conditions and is considered accurate. No warranty is expressed or implied regarding the accuracy or use of this data. It is the responsibility of the end user to determine suitability for use.