Adhesive Prepregs for Composite Manufacturers, LLC

DA 4518
Epoxy Prepreg System

DESCRIPTION

DA 4518 is an epoxy prepreg designed for a temperature range of -67°F (-55°C) to 350°F (177° C), with a cure of 250°F (121°C) for one hour and or a cure of 350º F (177ºC) for 1 hour. This material needs to be post cure or cured to 350ºF to get the 350º properties

PHYSICAL PROPERTIES:

Form:	Modified epoxy impregnated fabric
Resin Content:	45 to 50% by Weight
Volatiles:	Less than 1%
Separator:	Release paper and poly film
Tack:	Medium
Gel Time:	10 minutes at 250°F
Shelf Life:	One year at 0°F Six months at 40°F Thirty days at 75°F

MECHANICAL PROPERTIES

The data supplied are averages obtained on 12 plies of DA 4518 on 7781 glass cured one hour at 250°F (121°C) with a heat up rate of 5° per minute from room temperature.

Tensile Strength (ASTM D 638)	@	75°F (24°C)	72,000 psi
Tensile Strength	@	180°F (82°C)	69,000 psi
Tensile Modulus	@	75°F (24°C)	4.3 X 106 psi
Tensile Modulus	@	180°F (82°C)	4.5 X 106 psi
Flexural Strength (ASTM D 790)	@	75°F (24°C)	114,000 psi
Flexural Strength	@	180°F (82°C)	110,000 psi
Flexural Strength	@	350°F (177°C)	42,000 psi
Flexural Strength after 24 hours	@	350°F (177°C)	42,000 psi
Flexural Modulus	@	75°F (24°C)	4.6 X 106 psi
Flexural Modulus	@	180°F (82°C)	4.6 X 106 psi

ADHESIVE PREPREGS FOR COMPOSITES MANUFACTURERS
P.O. BOX 264 1366 NORWICH RD. PLAINFIELD CT 06374
PHONE 860-564-7817 FAX 860-564-1535 www.prepregs.com

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CURE CYCLE

DA 4518 is designed to cure in one hour at 250°F (121°C), however this system may be cured at 250°F for one hour and a post cure of 350°F for one hour. This system may also be cure at 350°F for one hour the reason for the higher temperature is to have the higher operating temperature. The prepreg may be cured using either standard heat-up methods or by in-hot, out-hot press applications. A pressure of 30 psi is recommended, however pressures of 10 to 50 psi may be used.

STORAGE

Store material in a contaminate free container and store at O degrees F for extended storage. For shorter storage time requirements store at 40 degrees F, this enables quicker stabilization times.

APPLICATION

Remove material from cold storage at least 20 hours prior to use to allow for stabilization at room temperature. Keep the material wrapped to prevent moisture from condensing on the adhesive. If details are cut and replaced into cold storage, shorter stabilization times may be used.

Cut the material to size, remove the release paper and apply to part or mold. Remove the separator paper and join the parts together. Parts are now ready to be bonded and may be cured in a press, autoclave, or vacuum bag in an oven. Apply at least 30 psi pressure.

CLEAN UP

The adhesive can be removed from non-bonding areas with ketones or methylene chloride. Be sure to follow all Material Safety Data Sheet (MSDS) guidelines for the solvent to be used.

CAUTION

This material contains epoxy resins and amines which may cause irritation to sensitive skin. Avoid contact with eyes or skin. If contact with skin occurs, wash as soon as possible with soap and water. If contact with eyes occurs, flush with water for 15 minutes. Do not handle or use this material until Material Safety Data Sheet has been read and understood. The user of this material is required to use the necessary protective equipment as directed by applicable state and federal laws when handling, curing, and grinding this material.

IMPORTANT NOTICE

Information in this data sheet has been obtained under controlled laboratory conditions and is believed to be accurate. Properties listed are typical values and are not intended for use in preparing specifications. Actual values may vary. No warranty is expressed or implied for which APCM assumes legal responsibility. APCM cannot be responsible for misapplication or handling and use under conditions beyond its control and under no circumstances shall be liable for incidental or consequential damage resulting from handling or use of this material.

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