



CTD-121P "Prepreg Epoxy System"

Electrical Insulation for Superconducting Magnets

Pre-preg resin for composite structures operating at cryogenic temperatures

- Epoxy based insulation system suitable for use as a prepreg material with fiber reinforcement such as S2 Glass as well as b-staged film adhesive.
 - The pre-preg resin has good flow characteristics, excellent wettability, consolidates easily, and has a long outlife at room temperature.
 - Available in various widths and shapes. When in tape form, it can be used on either a cable in conduit conductor (CICC) or wrapped directly onto the conductor.
 - Prepreg epoxy system was developed for cryogenic and ambient applications down to liquid helium temperatures (-296°C/-452°F); possible use for elevated temperatures as well.
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- Combinations of prepregs, film adhesives, and polyimide barriers have been developed using this resin for specific applications. Contact CTD for more information regarding other options in multi-layered insulation system solutions (MISS).
 - CTD-121P-S2 is a prepreg system manufactured using S2 glass that can be manufactured in tape or sheet form. Styles are determined based on application requirements.
 - CTD-121P-E1080 is a prepreg system manufactured using fiberglass that can be manufactured in tape or sheet form. Styles are determined based on application requirements.
 - CTD-121P-GUG is a prepreg system that can be manufactured in tape or sheet form. GUG prepreg consists of a 3 layer insulation system containing the following:
 - Layer 1: 0.0028" Glass/Epoxy Prepreg
 - Layer 2: 0.001" Kapton
 - Layer 3: 0.0028" Glass/Epoxy Prepreg
 - CTD-121P-UG is a prepreg system that can be manufactured in tape or sheet form. UG prepreg consists of a 3 layer insulation system containing the following:
 - Layer 1: 0.0016" Glass/Epoxy Prepreg
 - Layer 2: 0.001" Kapton
 - Layer 3: 0.0004" Epoxy Resin

Cure: 1 Hour Ramp to 150°C
2 Hour hold at 150°C

Out Life: 1 year at 22°C.
Store at 0°C or below for longest shelf life. Protect from moisture during storage and while warming to room temperature

Advantages

- * Dry or low tack b-staging
- * Good resin flow
- * Long Pot-Life
- * Robust thermal shock resistance
- * Excellent adhesion to fibers and fillers



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Temperature [K]	Compression Strength [GPa]*	Compression Modulus [GPa]*	Short Beam Shear Strength [MPa]*	Short Beam Shear Modulus [GPa]*
76	1.23	16.9	64	32

- data was collected from composite specimens fabricated with a 50% volume fraction of S2 glass fibers

Disclaimer: The information and recommendations contained herein are based upon data believed to be accurate. However, no guarantee or warranty of any kind expressed or implied is made with respect to the information contained herein. August 2013