Unit 4
The Reservation
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MTC412

Epoxy Prepreg

Introduction

MTC412 epoxy prepreg is designed to give enhanced toughness and higher service temperature with the flexibility of Out-of-Autoclave manufacture. It is a sided system giving great flexibility in component manufacture. MTC412 is a highly toughened system that can be supplied with any standard reinforcement to meet your cost and manufacturing requirements.

Typical applications: *OOA, Aerospace structures*

Variants: *MTC412-1, lower tack.*

Key Features & Benefits

- Cure temperature from **80°C** to **150°C (176°F** to **302°F**)
- Service temperature up to **160°C (320°F)** after post cure
- Low CTE and shrinkage
- Work life at 20°C (68°F): **28 days**
- Storage life at -18°C (0°F): **12 months**
- Very low VOC content – no added solvents during manufacture

Storage & Out Life

This material should be kept frozen at -18°C (0°F). It must be kept sealed in a polythene bag which must not be opened until fully thawed to room temperature. If the material is not fully used, then the material must be resealed in the polythene bag to prevent moisture absorption.

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Cure Cycles & performances

- Recommended Initial Cure Cycle:
  - 1st dwell at **80°C (140°F)** for **2h**, at a ramp rate of **2°C (3.6°F) per min** under full vacuum
  - 2nd dwell at **120°C (212°F)** for **2h**, at a ramp rate of **2°C (3.6°F) per min** under full vacuum

CURE CYCLE OPTIONS:

Temperature		Duration		Tg
80°C (176°F)	(minimum)	16	hours	90°C (194°F)
100°C (212°F)		4	hours	110°C (230°F)
150°C (302°F)	(maximum)	1	hour	160°C (320°F)
170°C (338°F)	Post Cure	2	hours	170°C (338°F)

- Curing Schedule is meant to be a guide only and is subject to local conditions.
- ***To avoid exotherm care must be taken with thick laminates. It is recommended that small scale trials are carried out before larger cures carried out.***
  Ramp rates must not exceed **2.0°C (3.6°F)** per minute during **initial cure**.
  Ramp rates must not exceed **0.3°C (0.5°F)** per minute during **post cure** (free standing).

Cured Material Properties

Contact SHD for additional data.

Viscosity Profile

Contact SHD for additional data.

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Health and Safety

This material contains epoxy resin which can cause allergic reactions with skin contact and must avoid repeated and prolonged skin contact.

Please refer to the product Safety Data Sheet before using this material. The following precautions must be taken when using epoxy resin prepregs:

- Overalls must be worn.
- Impervious gloves must be worn.
- Curing schedule is meant to be as a guide only and is subject to local conditions.
- To avoid exotherm, particular care must be taken with thick laminates.
- Ramp rates must not exceed 3.0°C (3.6°F) per min during initial cure and 0.3°C (0.5°F) per min during post cure.