



COMPOSITE ENVISIONS

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PREG401

Epoxy Component Prepreg

Introduction

PREG401 is an epoxy resin system designed to give an initial cure at low temperatures or snap cure at high temperatures with enhanced toughness, honeycomb bondability and higher service temperature, giving greater flexibility in component manufacture. It can be supplied on a variety of fabrics in UD format to meet your cost and manufacturing requirements.

Typical applications: *General purpose – Visual*

Key Features & Benefits

- Cure temperature from **150°F to 250°F**
- Service temperature up to **275°F** after post cure
- Low CTE and shrinkage
- Work life at 70°F: **21 days**
- Storage life at 0°F: **12 months**
- Very low VOC content – no added solvents during manufacture

Storage & Out Life

This material should be kept frozen at 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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Mechanical Properties

Tests performed on **VTC401-C200T-T300-2X2T-3K-42%RW** laminates

Test	Results	Standard
Compression	Compressive strength 631 MPa	<i>BS EN ISO 14126 : 1999</i>
Tension	Tensile strength 573 MPa	<i>BS EN ISO 527-4 : 1997</i>
	Tensile modulus 52.7 GPa	
Flexure	Flexural strength 863 MPa	<i>BS EN ISO 14125 : 1998</i>
	Flexural modulus 51.7 GPa	
	Strain to failure 1.7 %	
Interlaminar Shear Strength	Interlaminar shear strength 74.0 MPa	<i>BS EN 2563 : 1997</i>
DMA	Tg – Storage Modulus Onset 290 °F	<i>AITM 1-0003 Issue 3</i>
	Tg – Tan δ Peak 305 °F	

Mechanical testing carried out at 80°F, 50±5% RH. All mechanical tests were completed independently by UKAS approved organisations. Complete tests reports can be supplied independently upon request. All figures are actual test results and haven't been normalised.

Cure Cycles & performances

Cure	Initial Min Cure	Tg
150°F (minimum)	16 hours	160°F
175°F	4 hours	185°F
210°F	1 hour	220°F
250°F (maximum)	45 minutes	260°F
275°F Post-cure	2 hours	285°F

- Curing Schedule is meant to be 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 **5°F** per minute during **initial cure**.
Ramp rates must not exceed **1°F** per minute during **post cure** (free standing).

Volatile content	< 1.0%
Fibre volume fraction	50 to 60%
Voidage (autoclave cure)	< 1.0%

Note: The information and assistance provided herein is for your consideration without legal responsibility. Users are required to perform verification and testing to confirm that the product meets with their requirements.

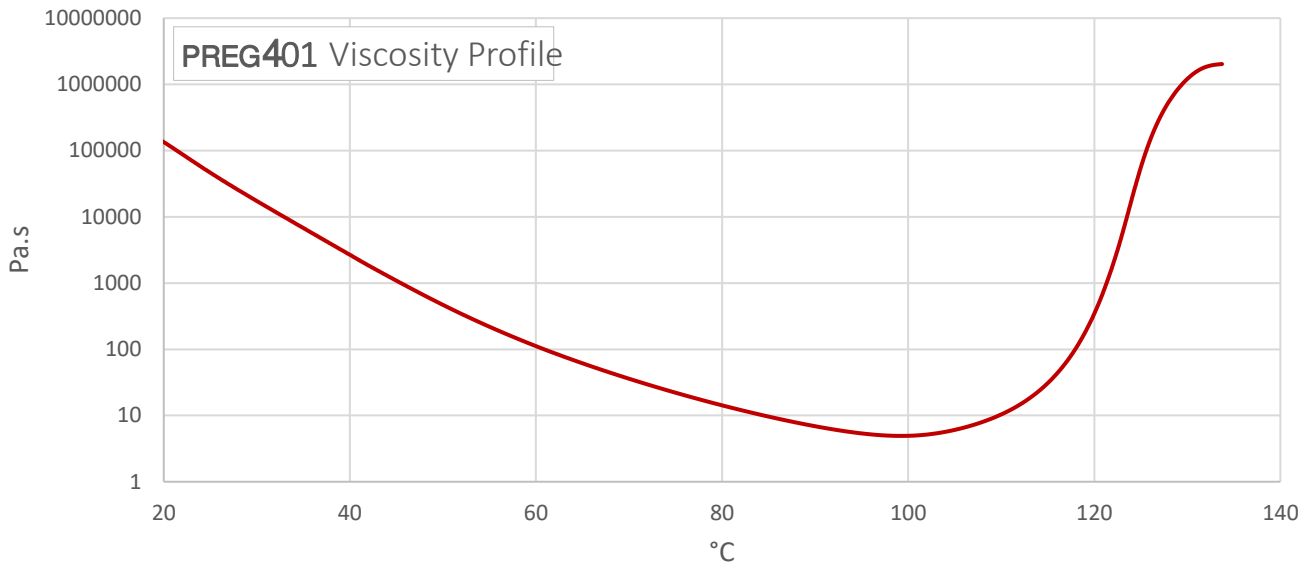


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Viscosity Profile

Testing carried out at 80°F, 50±5% RH.

Ramp rate: 4°F/min.



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 5°F/min during initial cure and 1°F/min during post cure.

Composite Envisions LLC cannot accept any liability for injury or damage where the above precautions have not been taken or where the material is used for any purpose other than its intended use.

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