

**X1-151** is a controlled flow epoxy resin system designed for versatile temperature cure to manufacture composite components requiring a high quality cosmetic finish.

**X1-151** provides a good tack and handleability over its 4-week out life. It can be processed via autoclave cure, vacuum bag only cure and press cure.

**X1-151** offers great Tg after suitable cure cycles, a DMA Tg of over 150°C is observed with standard 130°C cure.

**X1-151** exhibits very good stability under UV and thermal exposure. With Microtex aesthetic fabrics, X1-151 offers excellent aesthetic appearance and surface finish.

**X1-151** is supplied on a range of lightweight surface plies and some heavier weight reinforcements.

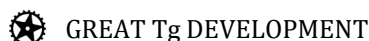
### TYPICAL APPLICATIONS



### SHELF LIFE



### FEATURES



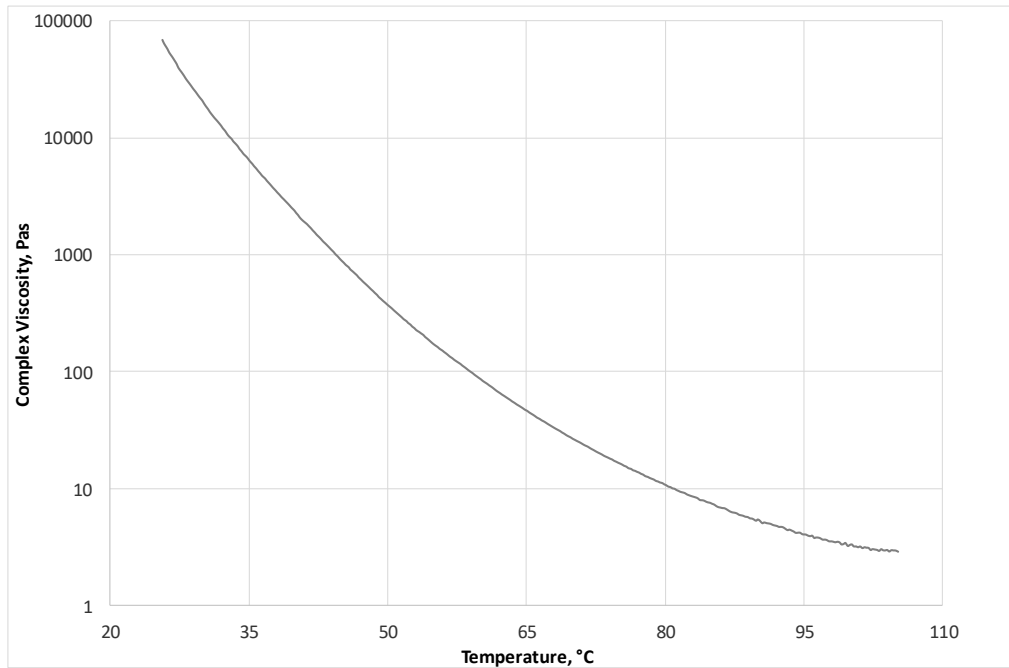
\* Where the intended end application is for a cosmetic product, customers are advised to consult a Microtex Composites sales representative for specific advice on fibre selection when placing an order for material.

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## MATRIX PROPERTIES

**Cured resin density @ RT:** (average value) 1.16 g/cm<sup>3</sup>.

**Resin viscosity:** ramp rate = 2 °C/min,  $\nu = 10$  rad/sec.



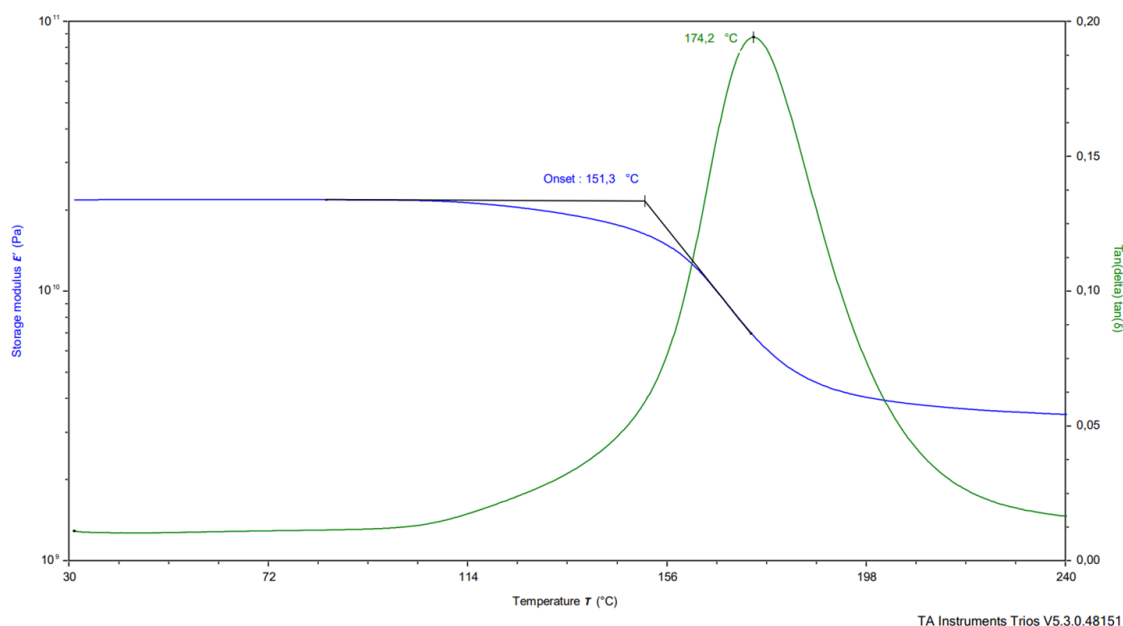
## Recommended cure cycle

1. Apply full vacuum (min -0.85bar);
2. Hold vacuum for at least 4 hours before increasing temperature.
3. Heat to 130°C  $\pm$  5°C at between 1°C /min and 2°C /min;
4. Hold for 90 minutes;
5. Cool to 30°C at between 1°C /min and 5°C /min;
6. Release pressure.

Above is the suggested standard cure cycle. For advice on bespoke cure cycles for specific components, please consult Microtex Composites technical service.

## THERMAL PROPERTIES

X1-151/GG200P-45	
Cure cycle	90 min @ 130°C
Tg (DMA) Onset (°C)	151
Tg (DMA) Peak Tan Delta (°C)	174



## THERMAL AGING TEST

Thermal aging 1	Thermal aging 2	Thermal aging 3	PV3929 (500 hours)
PASS	PASS	PASS	PASS

## MECHANICAL PROPERTIES

X1-151 - 90 min @ 130 °C, 6 bar		GG200P-45	GG380T-36
Property	Test Method	Value*	
0° Tensile strength [MPa]	ASTM D3039	674	836
0° Tensile modulus [GPa]		68	68
90° Tensile strength [MPa]		636	794
90° Tensile modulus [GPa]		67	67
0° Compressive strength [MPa]	SACMA SRM 1R-94	836	708
0° Compressive modulus [GPa]		64	63
90° Compressive strength [MPa]		829	683
90° Compressive modulus [GPa]		69	63
0° Interlaminar shear strength [MPa]	ASTM D2344	73	77
0° Flexural strength [MPa]	ASTM D790	719	957
0° Flexural modulus [GPa]		47	56

\* Test conditions: room temperature, dry . Normalized values at 55% VF .

<sup>1</sup> Carbon fabric 200 gsm plain 3K, RC 45%.

<sup>2</sup> Carbon fabric 380 gsm twill 2/2 12K, RC 36%.

## AVAILABILITY

X1-151 series prepregs are available in a wide range of reinforcing fabrics, including carbon, aramid, glass and special fabrics.

## STORAGE CONDITIONS

This prepreg should be stored as received in a cool dry place or in a refrigerator.

After removal from refrigerated storage, prepreg should be allowed to reach room temperature before opening the polyethylene bag, thus preventing condensation (a full roll in its packaging can take more than 1 day).

## PRECAUTIONS FOR USE

The usual precautions when handling uncured resins and fibrous materials should be observed, and a Safety Data Sheet is available for this product.

SDS Reference Codes: X1-151: SDS-463