

## Towpreg Specification

Width: 4/5/6/7/8 mm  
Resin Content: 27-33 % (test by: macro TGA)  
Roll length: 3,300 meters (minimum)  
Roll weight: 8.0 kg ± 0.5 kg  
Packaging: 3 rolls per carton

## Towpreg Properties

Reinforcement: Standard modulus 24K tow carbon fiber: T700-24K.  
Composite properties are normalized to 70% fiber volume.  
Cure cycle: 120°C/4hours

Properties	Value	Method
0° Tensile Strength	2614.38 MPa	ASTM D2291 Winding tension: 60N
Shear Strength	63.08 MPa	

## Cure Profiles

Option	Ramp Up	Hold Temperature(°C)	Hold Time(hrs)	Ramp Down
1	≤3°C/min	110	6	≤3°C/min to 66°C or less
2		120	4	

## GR3305 Resin Summary

- Unique, solvent-free, bisphenol-A type epoxy resin
- 1-month shelf life without refrigeration
- Resin content, flow during cure and tack levels are tailored to meet the process requirement
- Available reinforcement materials: carbon fiber, glass fiber, and other fibers
- Available fiber forms: tow (roving)
- Typical application: high pressure SCBA tanks; rocket motor cases; sporting goods; Infrastructure repair; and any other application where moderately low cure temperatures are required

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**Neat Resin Properties**

Item	Specification
Appearance	Light yellow paste
Tg <sup>*1</sup>	>115
Enthalpy <sup>*2</sup>	300-450 J/g
Resin density	1.15~1.25 g/cm <sup>3</sup>
Curing Time <sup>*3</sup>	110 °C : 360 mins
	120 °C : 240 mins

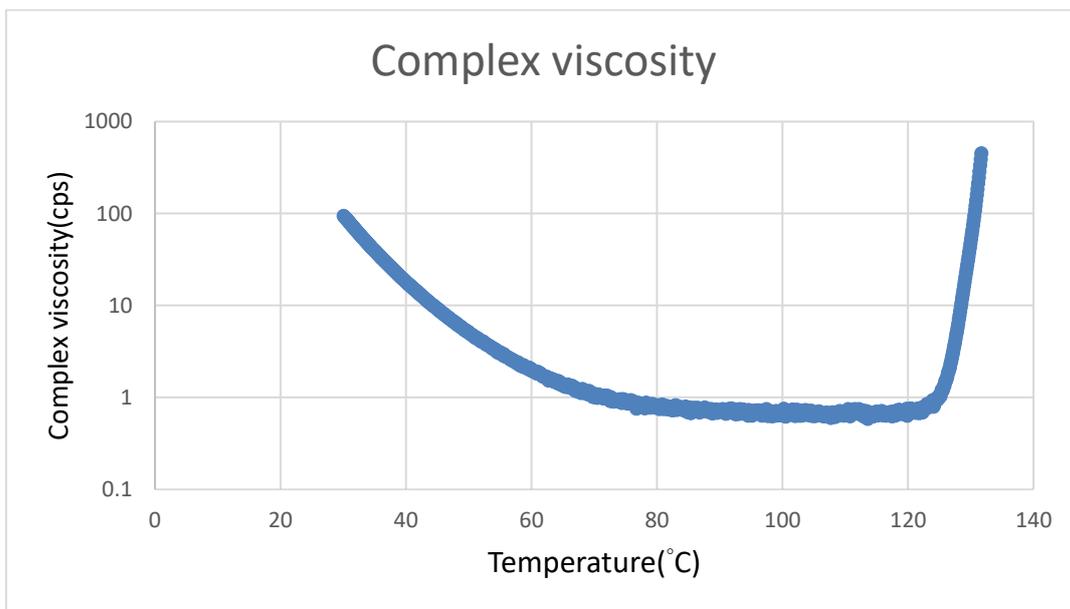
\*1 Tg is tested by DMA after cured.

\*2 Test method: According to ISO11357-5. The ramp is 10°C/ mins.

\*3 The recommended curing cycle base on laboratory testing, and the curing cycle can be adjusted according to the process, product sizes and thickness.

Rheology of epoxy resin (the ramp is 1°C/ mins)

Item	EzCiclo GR3305
minimum viscosity (cps)	580
temperature(°C)	113



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## Cured neat resin physical properties

Properties	Value	Method
Tensile Strength	>75 MPa	ASTM D638
Tensile Modulus	>2700 MPa	ASTM D638
Elongation at Break	>5 %	ASTM D638
Flexural Strength	>145 MPa	ASTM D790
Flexural Modulus	>3100 MPa	ASTM D790

Cure cycle: 120°C/ 4 hours

## Storage Life

The pre-impregnated materials manufactured from this resin shall remain sealed and stored in the original package. The material shall be stored indoors without exposure to sunlight. 1 month at 23°C / 6 months at 0°C / 12 months at -18°C

## Handling and Safety Precautions

1. Please refer to the GR3305 SDS for the latest safety and handling information.
2. Towpreg should be stored in their original, properly closed containers and stored at proper temperature. Shelf life and out life are indicated on the label.
3. During operation, operators should wear clean, impervious gloves to avoid skin contact and prevent contamination of the material.

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