ENDUREDGE MAX

Technical Date Sheet

Bismaleimide

NTB-500 BMI

Description

The NT-500 is a BMI prepreg system designed to be used in high temperature composite applications. NTC-500 BMI is designed in the same manner as all of the Enduredge Max prepreg products to provide excellent out-of-autoclave processing utilizing our unique and proprietary engineered air release channels that provide z-directional breathing along with a very low volatile resin chemistry. Finished parts demonstrate minimal through thickness void content (often <1%), excellent mechanical properties and long-term dimensional stability. NTB-500 BMI is available in a variety of carbon fiber fabrics and glass fiber reinforcements.

Ideal Applications

- High temp structure
- Space
- Launch Vehicles
- Applications that require very high Tg

Product Features

- Excellent Mechanical Properties via autoclave or VBO
- Processes Autoclave or VBO
- 15 months in freezer (<32°F / 0°C)
- >45 days out time at ambient storage conditions (<75°F/24°C)
- Excellent Tack and Drape
- Outstanding Interlaminar Shear Strength

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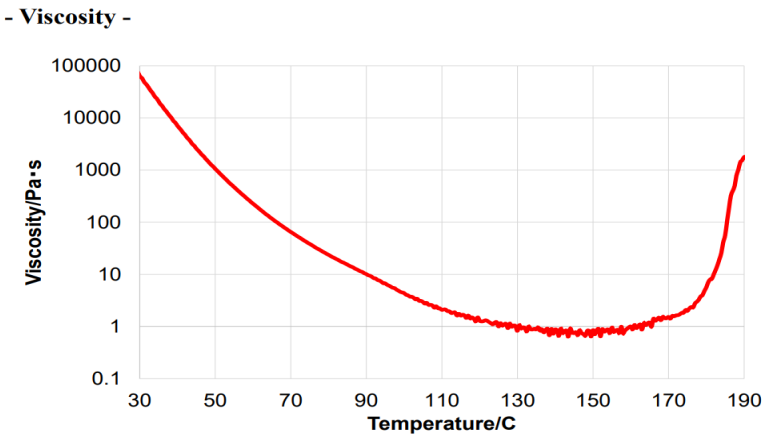
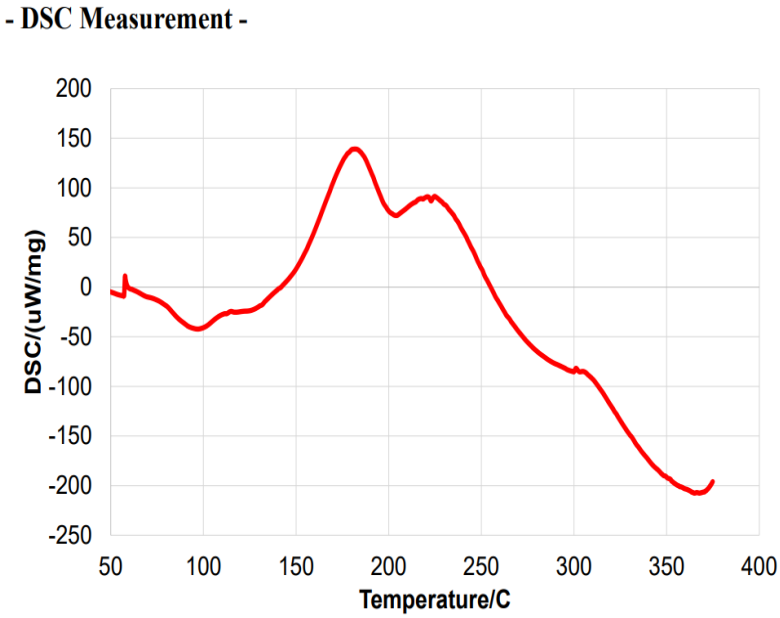
Neat Resin Properties

Viscosity (Pa s)	@ 30°C	6,238
	@ 80°C	2.39

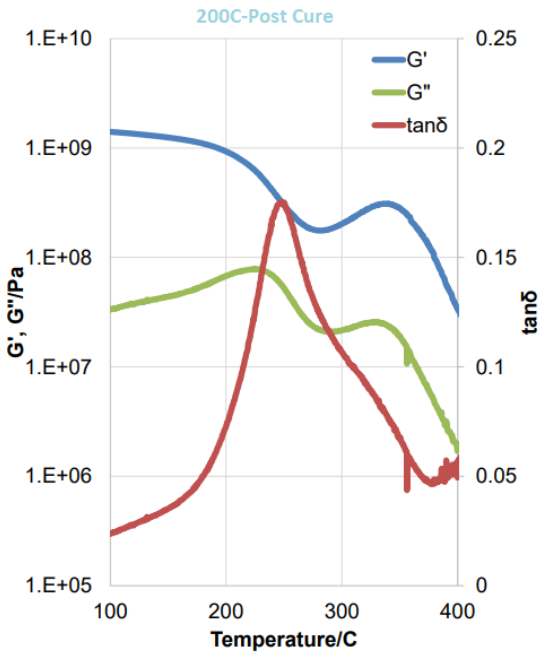


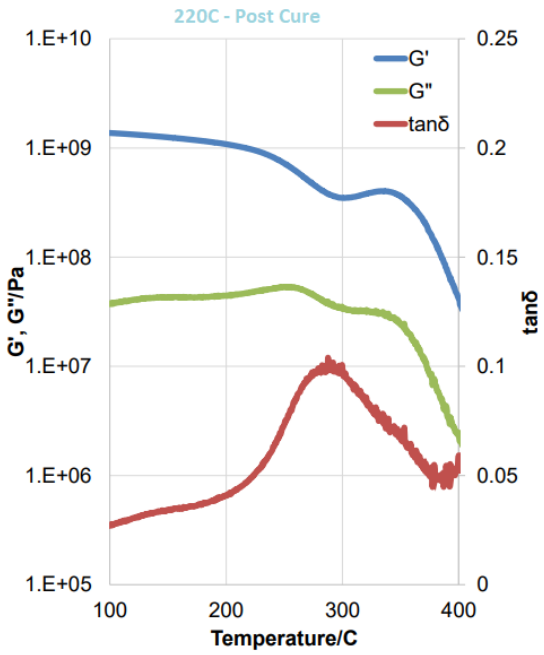
DSC	On-Set	101°C
	Peak-Top	182°C
	Off-Set	337°C



Initial Cure		1 hour @ 180°C	
Post Cure		6-hour @ 200°C	6-hour @ 220°C
Dry T	G’	205°C	237°C
	tanδ	248°C	288°C

- DMA Measurement (Dry) -





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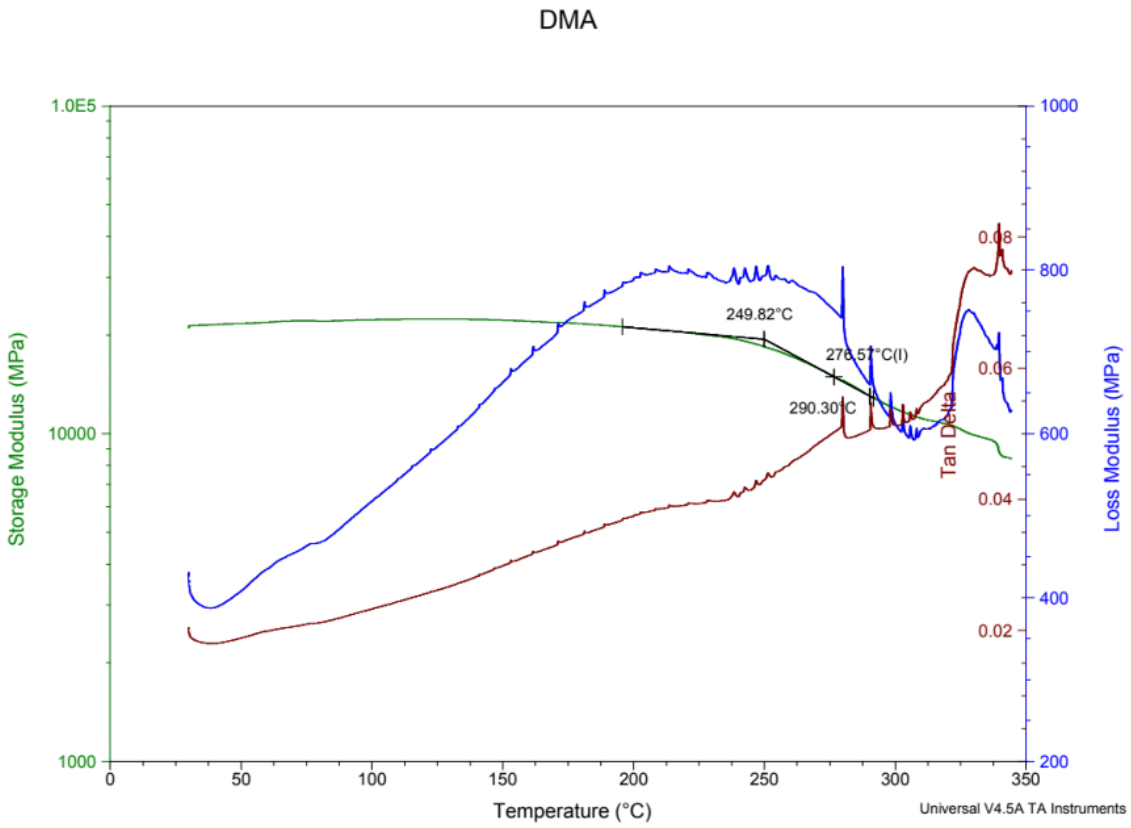
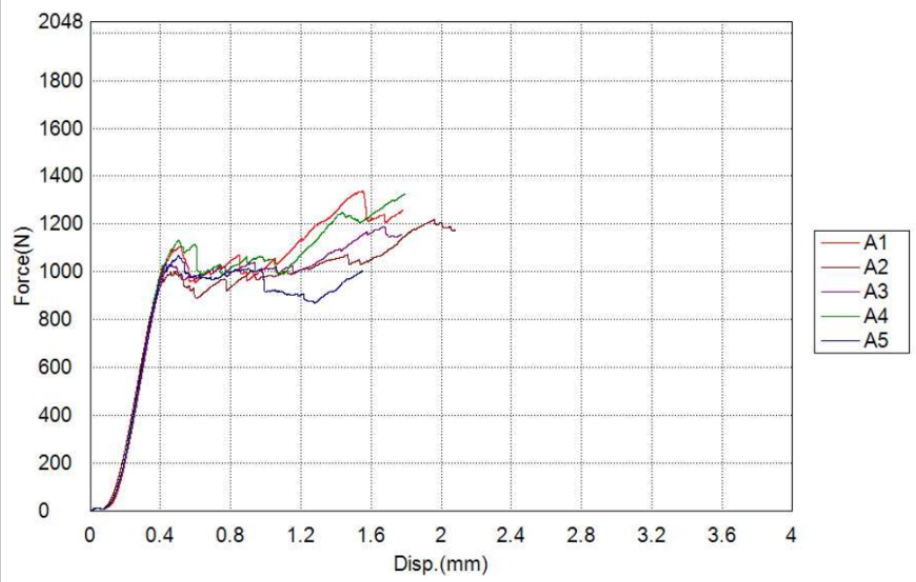
Technical Date Sheet

Laminate



Short Beam Shear	Cure	Autoclave Cure 6 hours @ 200°C
	Test Type	3-point Bend
	Speed	1.27mm/min

Force-Displacement Plot:

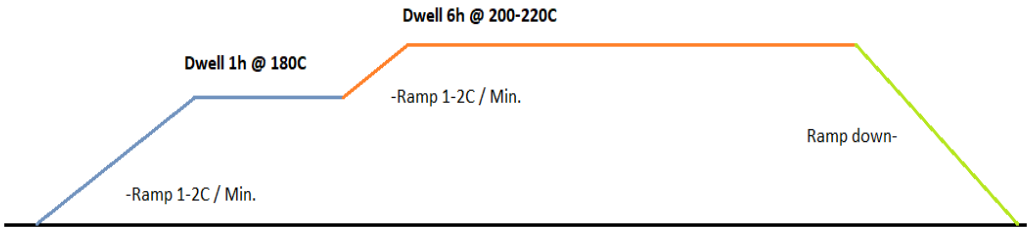


Samples	Short Beam Strength
	Unit: N/mm²
A1	40.2327
A2	39.1413
A3	36.3194
A4	39.6073
A5	34.2078
Average	37.9017
Standard Deviation	2.55087

Proper cure process will show a small leak through the tack hole on the Teflon film (4) creating a drop on the breather.

Poor results unless vacuum is applied throughout full cure process including while in oven.

Processing Information



AUTOCLAVE PRESSURE

Standard pressure is 85 psi to 100 psi (0.59MPa to 0.69 MPa).

FINAL CURE TEMPERATURE

NTB-500 BMI reaches an acceptable cure state after one hour at 180°C. Higher cross-linking achieved by increasing the final cure state to 200°C for six hours. Final cure temperatures below 180°C are not recommended.

POST CURE

Post-cure temperature can be varied from a post-cure of 200°C to 220°C to achieve higher toughness and glass transition temperature.

HANDLING MATERIALS

Freezer Storage

NTB-500 BMI should be stored frozen in a sealed, non-permeable bag. When stored at or below 0°F, NTB-500 BMI has a shelf life of 12-months from the date of shipment.

Moisture Absorption

BMI Prepreg can be adversely affected by moisture uptake prior to cure. Prepreg materials may experience moisture buildup when removed from frozen storage. Take caution to thoroughly thaw NTB-500 prior to unsealing from bag.

CONTACT INFORMATION

Nexx-Technologies

c/o Mitsubishi Gas Chemical America, Inc.
655 Third Avenue
19th Floor
New York, NY 10017
(212) 687-2810
www.enduredge.com
www.mgc-a.com