

## ***Newport 101***

### **Description:**

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Newport 101 is a 235°F to 300°F cure, general purpose epoxy film adhesive designed for bonding applications requiring high strengths from -67°F to 200°F.

### **Application:**

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Newport 101 is suited for structural and secondary bonding applications in aerospace, sporting goods, marine, wind energy, and industrial manufacturing. High shear and peel strengths make Newport 101 ideal for metal-to-metal bonding and sandwich panel manufacturing.

Newport 101 is supplied in standard film weights from 0.030 to 0.090 psf (150-450 gsm), and a variety of commercially available reinforcements, including:

- Non-woven polyester mat (HC)
- Nylon mesh (N), and tricot (TR)
- Metal meshes for electrical management
- Unsupported
- Available in prepreg form (NB1101)

### **Benefits/Features:**

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- High toughness
- High strength sandwich panel bonds
- Co-curable with most 250°F curing prepreps
- Meets NASA out-gassing requirements
- Meets MIL-A-25463 Type I, Class 2, Group 3
- Meets MMM-A-132B Type I, Class 2, Group 3
- 7 day out-time at 70°F

### **Recommended Processing Conditions:**

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Newport 101 can be cured at temperatures from 235°F to 300°F, depending on service temperature requirements. Low, medium, and high pressure molding techniques may be used to cure Newport 101. Recommended cure cycle is 25psi, 3°F/min ramp to 275°F, hold for 60 minutes, cool to <140°F.

### **Physical Properties\*:**

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Gel Time (275°F):	4-5 min.
Specific Gravity:	1.20 ± 0.02
Tg (DMA,E')	235°F

## Mechanical Properties:

### Newport 101 test data for MIL-A-25463 Type I, Class 2

The mechanical property data supplied in the following table are average values obtained from Newport 101HC @ 0.060psf.

	Conditioning	-67°F */req	RT */req	180°F*/req
Sandwich peel str., in-lbs/in		12.8 / 10.0	18.8 / 12.5	22.3 / 10.0
Flatwise tensile strength, psi		1116 / 800	1278 / 750	864 / 400
Flexural strength, lbs		2594 / 2100	2675 / 2100	2312 / 1275
Flexural strength, lbs	192h exposure to 180°F	-	-	2265 / 1500
Creep deflection @ RT, in.	192h loading (100lbs)	-	0.01 / 0.05max	-
Creep deflection @ 180°F, in.	192h loading (800lbs)	-	-	0.028 / 0.05max
Flexural strength @ RT, lbs	30 day exp. to 95-100%RH	-	2243 / 1800	-
Flexural strength @ RT, lbs	30 day exp. to JP-4	-	2497 / 1800	-

\* Values are average and do not constitute a specification

### Newport 101 Tested per MMM-A-132B, Type I, Class 2

The mechanical property data supplied in the following table are average values obtained from Newport 101-HC @ 0.030psf. Material cured in preheated press at 250°F for 2 hours and 25 psi.

	Conditioning	-67°F */req	RT */req	180°F*/req
T-Peel strength, lbs/in		-	24 / 20	-
Blister detection, psi		-	4540 / 3250	-
Tensile shear strength, psi		3740 / 3500	4696 / 3500	4102 / 2000
Tensile shear strength, psi	7 day exp. to Hydraulic Oil	-	4300 / 3250	-
Tensile shear strength, psi	7 day exp. to JP-4	-	4170 / 3250	-
Tensile shear strength, psi	30 days @ 120°F, 100%RH	-	4092 / 3250	-
Fatigue strength	750 psi @ 10 <sup>6</sup> cycles		Pass	
Creep rupture, in	192h loading (1600 psi)		0 / 0.015	
Creep rupture, in	192h loading (800 spi)			0 / 0.015

\* Values are average and do not constitute a specification

### Newport 101 NASA outgassing data

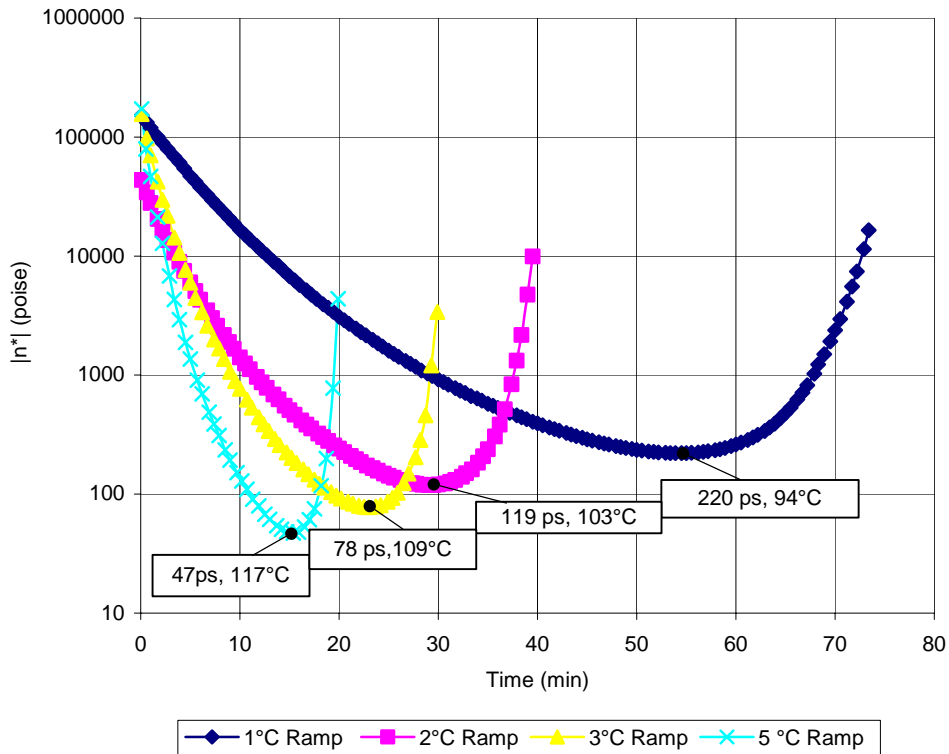
Out gassing data provided for Newport 101 unsupported, Nylon, and polyester mats. Testing per ASTM E 595.

	Unsupported	Nylon Carrier	Polyester Carrier
Average value TML (Total Mass Loss)	0.80%	0.93%	0.87%
Average value WVR (Water Vapor Regain)	0.56%	0.69%	0.50%
Percent CVCM (Collected Volatile Condensable Materials)	0.08%	0.10%	0.06%

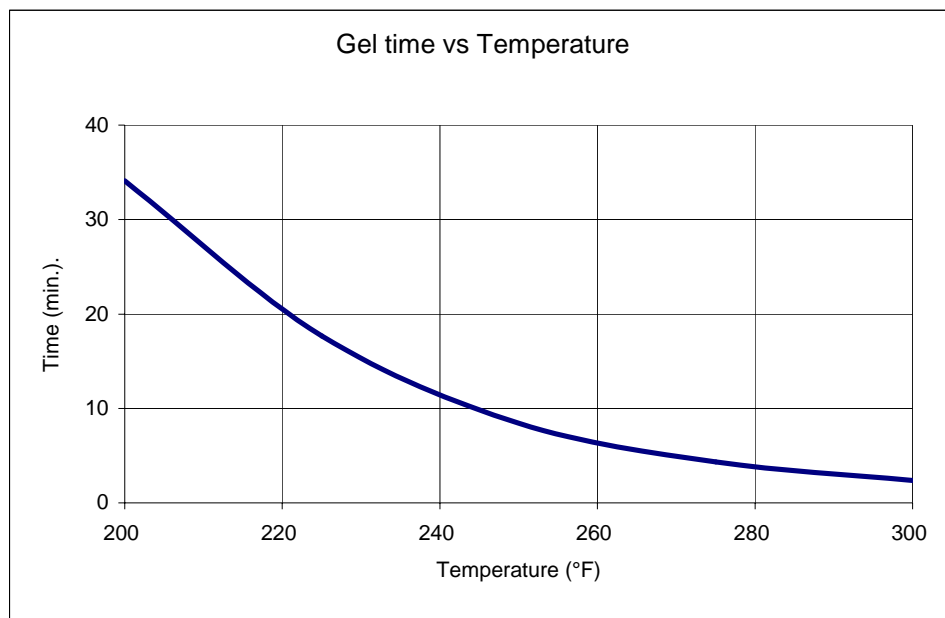
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### Melt Viscosity Profile of Newport 101

A TA (model AR2000) parallel plate rheometer was used to determine the melt viscosity of the neat resin system.



### Gel Curve Profile of Newport 101



**Prepreg Storage:**

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Material can be stored at 40°F for 3 months, or 0°F for 6 months.

**Availability:**

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Newport 101 is available in film weights from 0.030 to 0.090 psf (150-450 gsm) either unsupported or supported with a carrier. Contact Newport about any special requirements.

*For orders, pricing, availability, technical assistance or other inquiries please contact:*

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