
Newport 4402**Description:**

Newport 4402 is a 250°F to 300°F cure, toughened epoxy resin system, designed for sporting goods and industrial applications. Its enhanced toughness provides improved torsional strength, making it an excellent choice for tubular structures in demanding applications. Excellent translation of carbon fiber mechanical properties, impact resistance, and long out-life make Newport 4402 suitable for a variety of general use applications.

Application:

Newport 4402 is well suited for structural applications in sporting goods and industrial manufacturing.

Newport 4402 can be supplied with most commercially available fibers in both woven form (designated as NB) as well as unidirectional tape (designated as NCT), including:

- Carbon
- Aramid
- S-glass
- E-glass
- Other specialty fibers and fabrics

Woven Fabrics are available in standard commercial widths up to 60 inches. Tape widths up to 39 inches (1M) are available in standard fiber weights ranging from 90 to 300 gsm.

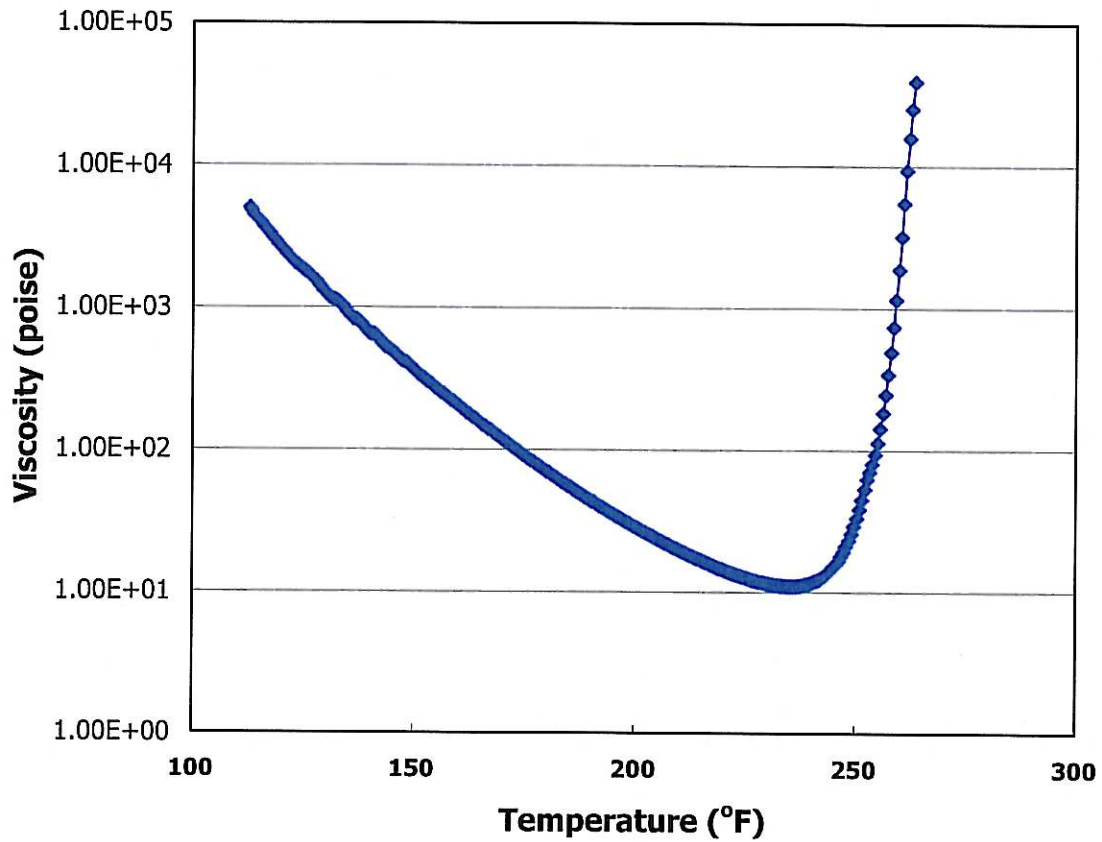
Benefits/Features:

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- Excellent mechanical properties
 - Good toughness
 - 30 days out-life at 70°F
 - Controlled flow
 - Moderate – high tack
 - Available on most commercial woven fabric
 - Available on a wide range of unidirectional fibers
 - Service temperature up to 195°F

Recommended Processing Conditions:

Newport 4402 can be cured at temperatures from 250 to 300°F depending on service temperature requirements. Low, medium, and high pressure molding techniques may be used to cure 4402 resin. Recommended cure cycle is 50 psi; 3°F/min ramp to 265°F; hold for 75 minutes, cool to <140°F.

Rheology curve Profile of Newport 4402 Cure



Physical Properties:

Gel Time (275°F):	3 - 6 minutes
Specific Gravity:	1.20 g/cm ³
Tg (DMA)	244°F

Mechanical Properties:

Uni-directional Carbon Fiber tape reinforcement

The mechanical property data supplied in the following table are average values obtained from NCT4402 with 150 gsm carbon fiber tape at 35% RC. All values are based using an autoclave cure at 275° F for 60 minutes and 50 psi. All data are as tested (not normalized).

Test Conditions		75°F Dry							Test Method
Carbon		34-700	TR50S	TRH50	MR60H	MS40	HR40	HS40	
Tensile Properties									
0°	Strength (ksi)	319	428	431	463	421	424	397	ASTM D3039/ SACMA SRM 4R-94
	Modulus (Msi)	17.7	20.6	22.4	23.9	30.3	33.1	37.3	
	Elongation (%)	-	1.8	-	1.73	-	1.2	1.0	
	Poisson's Ratio	-	0.32	-	0.33	-	0.26	0.27	
90°	Strength (ksi)	11.0	11.5	11.5	11.9	8.7	8.7	7.8	
	Modulus (Msi)	-	1.3	1.3	1.2	1.0	1.0	1.1	
	Elongation (%)	-	1.0	-	1.1	1.0	0.9	0.8	
	Poisson's Ratio	-	0.02	-	0.02	-	0.01	0.01	
Compression Properties									
0°	Strength (ksi)	180	228	221	209	199	194	181	ASTM D695 mod./ SACMA SRM 1R-95
	Modulus (Msi)	18.6	18.7	19.7	21.8	24.0	28.6	32.1	
90°	Strength (ksi)	-	28	28	-	27	25	25	ASTM D3410
	Modulus (Msi)	-	1.3	1.2	-	1.1	1.2	1.1	
Flexural Properties									
0°	Strength (ksi)	260	266	272	-	210	196	-	ASTM D790
	Modulus (Msi)	16.7	19.0	20.2	-	25.1	30.3	-	
90°	Strength (ksi)	20.8	19.6	20.2	-	16.5	16.0	21.8	ASTM D790
	Modulus (Msi)	-	1.2	1.1	-	1.0	1.1	1.0	
Shear Properties									
In-Plane	Strength (ksi)	-	20.3	-	20.5	-	17.4	16.7	ASTM D3518
	Modulus (Msi)	-	0.6	-	0.6	-	0.6	0.6	
ILSS	Strength (ksi)	12.0	12.8	13.1	12.2	12.2	12.0	11.9	ASTM D2344/ SACMA SRM 8R-96

* Values are average and do not constitute a specification or guarantee.

Prepreg Storage:

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

Availability:

Newport 4402 is available on a wide variety of woven fabric and unidirectional tape including aramid, E-glass, S-glass, carbon fibers, and others. Tack, flow and other properties can be tailored to meet your specific requirements. Contact Newport about any specialty fibers and requirements.

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

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