NEWPORT
ADHESIVES AND COMPOSITES, INC.
MITSUBISHI RAYON GROUP

Newport HMT321 Product Data Sheet

Newport Hot Melt Towpreg

Description:

Newport HMT321 is a 275° - 300°F (135° - 149°C) cure, hot melt towpreg, toughened, high Tg controlled flow epoxy resin system. Versatile processing, excellent mechanical properties, and long out time make Newport HMT321 suitable for general aviation, aerospace, marine, industrial markets and sporting good markets.

Application:

The high Tg, and the excellent mechanical properties make Newport HMT321 an ideal product for Filament Winding and/or Fiber Placement Process in a variety of structural applications for the UAV, general aviation, aerospace, marine, industrial and sporting good markets where products are require to operate under demanding temperatures.

Benefits/Features:

- Environmentally friendly (Solvent free, No release paper nor cover film)
- Consistent resin consistent +/-3%
- Stable band width
- High dry and wet Tg values
- Excellent mechanical properties
- Vacuum bag and autoclave curable
- Controlled flow epoxy resin
- Moderate tack for easy de-spooling
- 30 days out time at 70°F (21°C)
- Available in standard, intermediate and high modulus carbon fibers.

Recommended Processing Conditions:

- Newport HMT321 can be cured at temperatures from 275°F – 300°F (135° - 149°C) depending on part size and complexity.
- Low, medium, and high pressure molding techniques may be used to cure Newport HMT321 resin.
- Recommended cure cycle is 50 – 100 psi (349 – 690 kPa), 3°F/min ramp to 275°F (135°C), hold for 60-90 minutes, cool to <140°F (60°C).

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Physical Properties:

Spool Length:	2500 or 5000 linear yards
Resin Content:	25, 30, 35 wt% (Tolerance +/-3%)
Gel Time (275°F):	5-7 minutes
Cured Resin Density:	1.22 g/cc
Dry Tg (DMA, E'):	302°F (150°C)
Wet Tg (DMA, E'):	248°F (120°C)

Mechanical Properties:

Standard Modulus Carbon Fiber Reinforcement

The mechanical properties listed in the following tables are averages values obtained from HMT321 with several types of carbon fibers at 33% RC. All values are based using a autoclave cure at 275° F (135°C) for 90 minutes and 80 psi pressure. Results are normalized TO A 60% fiber volume, except for SBS strength properties.

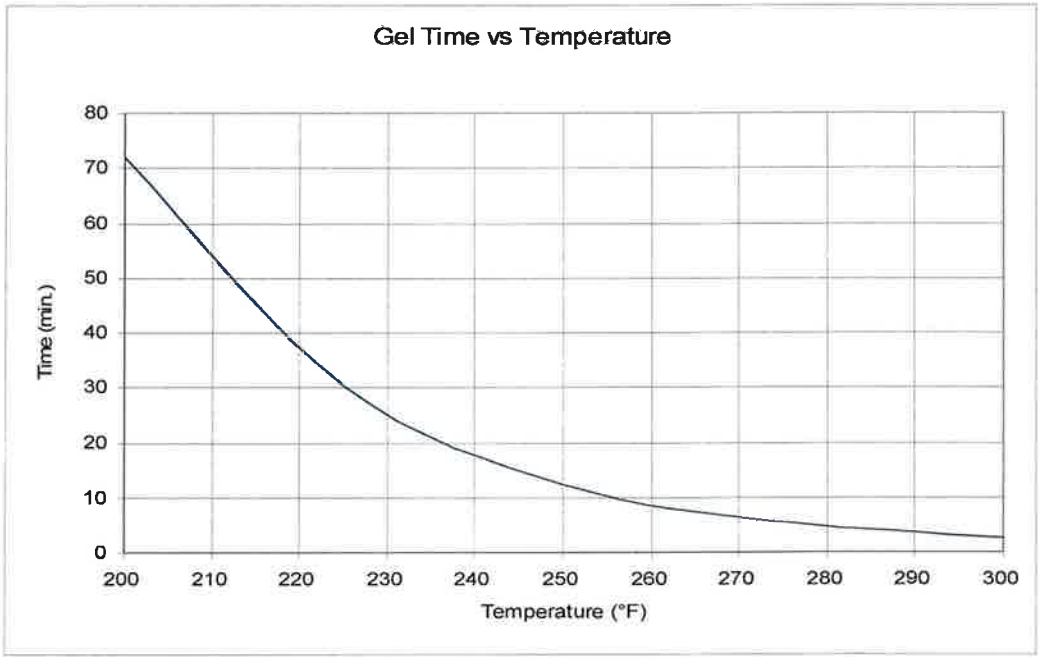
HMT321 34-700 12K	Test Method	RT*
0° Tensile Strength, ksi	ASTM D-3039	291.4
0° Tensile Modulus, Msi		18.8
0°Compression Strength, ksi	SACMA 1R-94	236.8
0° Compression Modulus, Msi		20.4
0° Flexural Strength, ksi	ASTM D-790	294.4
0° Flexural Modulus, Msi		19.4
0° Short Beam Shear str., ksi	SACMA 8R-94	15.6

** Values are average and do not constitute a specification*

HMT321 HR40 12K	Test Method	RT*
0° Tensile Strength, ksi	ASTM D-3039	277
0° Tensile Modulus, Msi		33.5
0°Compression Strength, ksi	SACMA 1R-94	171.9
0° Compression Modulus, Msi		33
0° Flexural Strength, ksi	ASTM D-790	263.5
0° Flexural Modulus, Msi		33.8
0° Short Beam Shear str., ksi	SACMA 8R-94	14.0

** Values are average and do not constitute a specification*

Gel Curve Profile of Newport 321



Towpreg Storage:

- Material can be stored at 40°F (4°C) for 3 months
- Material can be stored at 0°F (-18°C) for 6 months.
- Out time is 30 days maximum at room temperature 70°F (21°C).

Availability:

Newport HMT321 is available on a wide variety of carbon fibers. Some product characteristics such as resin content, gel time can be tailored within reason to meet specific requirements.

Contact Newport about any specialty fibers or requirements.

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

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