
High Heat Resistance Hot Melt Towpreg HMT321

Description:

Newport-FTP™ HMT321 is a 250° - 300°F (121 - 149°C) cure, hot melt towpreg, toughened, high Tg controlled flow epoxy resin system. Versatile processing, excellent mechanical properties, and long out time make it suitable for general aviation, aerospace, marine, industrial and sporting markets.

Application:

The high Tg, and the excellent mechanical properties make Newport-FTP™ 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 required to operate under demanding temperatures.

Benefits/Features:

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- Environmentally friendly (Solvent free, No release paper nor cover film)
 - Stable band width
 - High dry and wet Tg values
 - Excellent mechanical properties
 - Controlled flow epoxy resin
 - Moderate tack for easy de-spooling
 - 30 days out time at 70°F (21°C)

Recommended Processing Conditions:

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- Newport-FTP™ HMT321 can be cured at temperatures from 250°F – 300°F (121 - 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 (1.7°C/min) ramp to 300°F (150°C), hold for 60-90 minutes, cool to <140°F (60°C).

Physical Properties:

Gel Time (275°F)	5-7 minutes
Cured Resin Density	1.22 g/cc
Dry Tg (DMA, E')	150°C (302°F)
Wet Tg (DMA, E')	120°C (248°F)
	Soaked in 160°F water for 2weeks

Mechanical Properties:

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

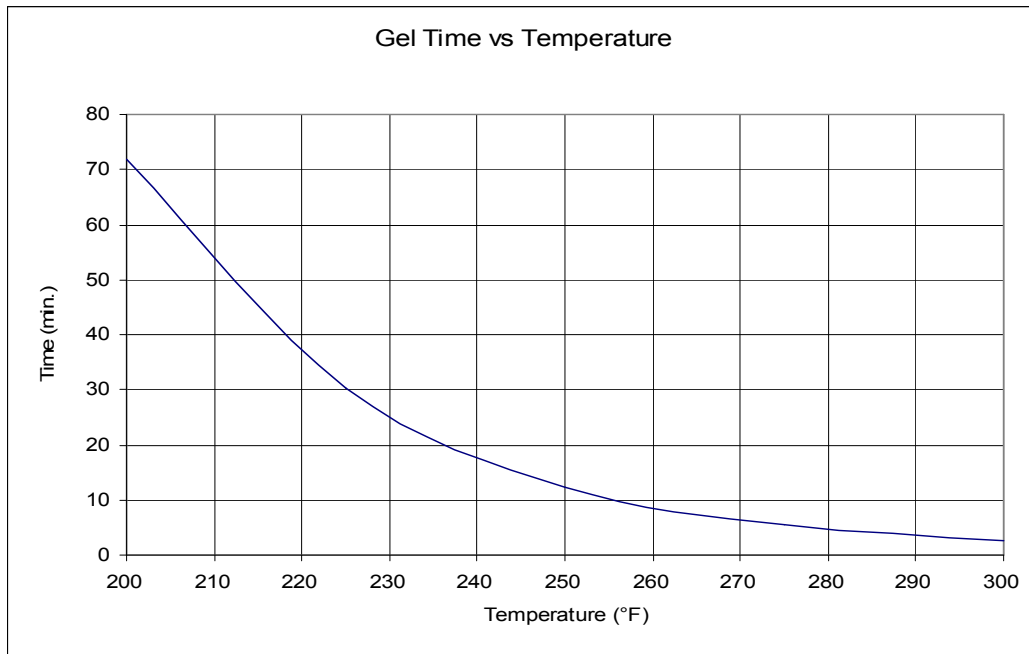
HMT321 34-700 12K	Test Method	RT*
0° Tensile Strength, ksi	ASTM D3039	291
0° Tensile Modulus, Msi		18.8
0° Compression Strength, ksi	ASTM D695 mod.	237
0° Compression Modulus, Msi		20.4
0° Flexural Strength, ksi	ASTM D790	294
0° Flexural Modulus, Msi		19.4
0° Short Beam Shear str., ksi	ASTM D2344	15.6

HMT321 HR40 12K	Test Method	RT*
0° Tensile Strength, ksi	ASTM D3039	277
0° Tensile Modulus, Msi		33.5
0° Compression Strength, ksi	ASTM D695 mod.	172
0° Compression Modulus, Msi		33.0
0° Flexural Strength, ksi	ASTM D790	264
0° Flexural Modulus, Msi		33.8
0° Short Beam Shear str., ksi	ASTM D2344	14.0

HMT321 HS40 12K	Test Method	RT*
0° Tensile Strength, ksi	ASTM D3039	300
0° Tensile Modulus, Msi		37.5
0° Compression Strength, ksi	ASTM D695 mod.	190
0° Compression Modulus, Msi		35.0
0° Flexural Strength, ksi	ASTM D790	230
0° Flexural Modulus, Msi		35.0
0° Short Beam Shear str., ksi	ASTM D2344	14.9

* Values are average and do not constitute a specification

Gel Curve of HMT321




MITSUBISHI RAYON CARBON FIBER AND COMPOSITES, INC.

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-FTP™ 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:

CORPORATE OFFICES

Mitsubishi Rayon Carbon Fiber and Composites, Inc.

Composite Materials Division

1822 Reynolds Ave. Irvine CA 92614

Tel: (949) 253-5680

Fax: (949) 253-5692

Sales@mrcfac.com

<http://www.mrcfac.com>

Suzanne Potter,	Sales Administrator,	suzanne.potter@mrcfac.com
Mike Pierce,	Senior Sales Manager,	mike.pierce@mrcfac.com
Max Thouin,	Sales Engineer	max.thouin@mrcfac.com
Nick Nohara	R&D Engineer	atsushi.nohara@mrcfac.com

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