

HMT321



250-300°F (120-150°C) Cure Hot-melt Towpreg

Typical applications

Aviation
Aerospace
Marine
Industrial
Sporting goods

Out life

21 days at 70°F (21°C)

Shelf life

3 months at 40°F (4°C)
6 months at 0°F (-18°C)

Description

HMT321 is a 250°F (121°C) to 300°F (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.

Benefits/features

- 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

Variant

HMT321FR: Fire Retardant version. Meets FAR 25.853 Ap.F P,I,IV,V including OSU HRR.

Application

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

Recommended processing conditions

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).

Please contact your account manager or MCCFC technical support to discuss specific applications.

Neat resin [values are average and do not constitute a specification]

Property	Value
Gel time @ 275°F (135°C), minutes	5 – 7
Specific gravity	1.22
T _g (DMA, E'), °F (°C)	302 (150) Dry 248 (120) Wet

Mechanical data [values are average and do not constitute a specification]

34-700 12K, autoclave cured, 80psi, 90 minutes at 275°F, norm. to 60%FV except for SBS

Property	Test method	RT
0° Tensile strength, ksi (MPa)	ASTM D3039	291 (2000)
0° Tensile modulus, Msi (GPa)		18.8 (130)
0° Compressive strength, ksi (MPa)	ASTM D695mod	237 (1630)
0° Compressive modulus, Msi (GPa)		20.4 (141)
0° Flexural strength, ksi (MPa)	ASTM D790	194 (1340)
0° Flexural modulus, Msi (GPa)		19.4 (134)
0° Short beam shear strength, ksi (MPa)	ASTM D2344	15.6 (108)

HR40 12K, autoclave cured, 80psi, 90 minutes at 275°F, norm. to 60%FV except for SBS

Property	Test method	RT
0° Tensile strength, ksi (MPa)	ASTM D3039	277 (1910)
0° Tensile modulus, Msi (GPa)		33.5 (231)
0° Compressive strength, ksi (MPa)	ASTM D695mod	172 (1190)
0° Compressive modulus, Msi (GPa)		33.0 (228)
0° Flexural strength, ksi (MPa)	ASTM D790	264 (1820)
0° Flexural modulus, Msi (GPa)		33.8 (233)
0° Short beam shear strength, ksi (MPa)	ASTM D2344	14.0 (97)

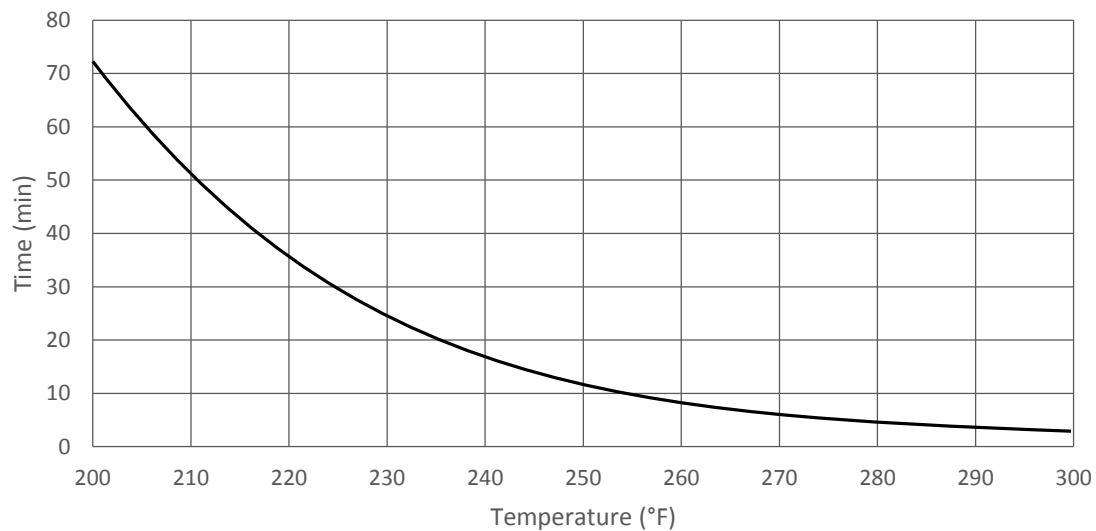
HS40 12K, autoclave cured, 80psi, 90 minutes at 275°F, norm. to 60%FV except for SBS

Property	Test method	RT
0° Tensile strength, ksi (MPa)	ASTM D3039	300 (2070)
0° Tensile modulus, Msi (GPa)		37.5 (259)
0° Compressive strength, ksi (MPa)	ASTM D695mod	190 (1310)
0° Compressive modulus, Msi (GPa)		35.0 (241)
0° Flexural strength, ksi (MPa)	ASTM D790	230 (1590)
0° Flexural modulus, Msi (GPa)		35.0 (241)
0° Short beam shear strength, ksi (MPa)	ASTM D2344	14.9 (103)





Gel time vs. temperature



The information contained herein has been obtained under controlled laboratory conditions and are typical or average values and do not constitute a specification, guarantee, or warranty. Results may vary under different processing conditions or in combination with other materials. The data is believed to be reliable but all suggestions or recommendations for use are made without guarantee. You should thoroughly and independently evaluate materials for your planned application and determine suitability under your own processing conditions before commercialization. Furthermore, no suggestions for use or material supplied shall be considered a recommendation or inducement to violate any law or infringe any patent.

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