350°F cure High Tg Hot Melt Towpreg
HMT6600

Description:
Newport-FTP™ HMT6600 is a 350°F (177°C) cure, hot melt towpreg with toughened, high-Tg epoxy resin matrix. Versatile processing, excellent mechanical properties and flame retardancy, and long out time make it suitable for a variety of applications including large scale structures where layup requirements can take days or weeks.

Application:
With good toughness and impact resistance Newport-FTP™ HMT6600 is well suited for Filament Winding Process and/or Fiber Placement Process in a variety of structural applications such as aerospace, marine, automotive, industrial and sporting goods markets.

Newport-FTP™ HMT6600 can be supplied with most of commercial carbon or other fibers.

Benefits/Features:
- Environmental friendly (Solvent free, No release paper or cover film)
- Long out time, Up to 30 days at 70°F (21°C)
- Moderate tack
- Excellent mechanical properties
- High-Tg, 200°C (392°F)
- Available on a wide range of standard, intermediate, and high modulus carbon fibers and Aramid fibers

Recommended Processing Conditions:
- Newport-FTP™ HMT6600 can be cured at temperatures at 350°F (177°C) depending on part size and complexity.
- Low, medium, and high pressure molding techniques may be used to cure Newport HMT6600 resin.
- Recommended cure cycle is 50 – 100 psi (345 – 690 kPa), 3°F/min (1.7°C/min) ramp to 350°F (177°C), hold for 90-120 minutes, cool to <140°F (60°C).
Physical Properties:

Gel Time 350°F (177°C) 16-20 minutes
Cured Resin Density 1.30 g/cc
Cast resin Dry -Tg (DMA, E') \(^{*1}\) 399°F (204°C)
Composite Dry -Tg (DMA, E') \(^{*1}\) 392°F (200°C)

\(^{*1}\) With MR60H 24K 32%RC

Mechanical Properties:

The mechanical properties listed in the following tables are average values obtained from HMT6600 resin with Grafil 37-800 30K carbon fiber. All values are based on using an autoclave cure at 350°F (177°C) for 120 minutes under 80 psi (551kPa) pressure. Results are normalized to 60% fiber volume, except 0° SBS strength properties.

### HMT6600 37-800 30K Test Method Results (RT)

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Results (RT) (Normalized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0° Tensile strength, ksi</td>
<td>ASTM D-3039</td>
<td>285</td>
</tr>
<tr>
<td>0° Tensile modulus, Msi</td>
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<td>22.0</td>
</tr>
<tr>
<td>0° Compression strength, ksi</td>
<td>ASTM D-695 mod.</td>
<td>250</td>
</tr>
<tr>
<td>0° Compression modulus, Msi</td>
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<td>23.0</td>
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<tr>
<td>0° Flexural strength, ksi</td>
<td>ASTM D-790</td>
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<tr>
<td>0° Flexural modulus, Msi</td>
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<td>20.0</td>
</tr>
<tr>
<td>0° Short Beam Shear str., ksi**</td>
<td>ASTM D-2344</td>
<td>20.3</td>
</tr>
</tbody>
</table>

* Values are average and do not constitute a specification
** As tested, not normalized

### HMT6600 MR60H 24K Test Method Results (RT)

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Results (RT) (Normalized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0° Tensile strength, ksi</td>
<td>ASTM D-3039</td>
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<tr>
<td>0° Tensile modulus, Msi</td>
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<tr>
<td>0° Compression strength, ksi</td>
<td>ASTM D-695 mod.</td>
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<tr>
<td>0° Compression modulus, Msi</td>
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<td>24.0</td>
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<tr>
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<tr>
<td>0° Flexural modulus, Msi</td>
<td></td>
<td>22.0</td>
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<tr>
<td>0° Short Beam Shear str., ksi**</td>
<td>ASTM D-2344</td>
<td>20.5</td>
</tr>
</tbody>
</table>

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**As tested, not normalized
Towpreg Storage:
- Material can be stored at 40°F (4°C) for 6 months.
- Material can be stored at 0°F (-18°C) for 12 months.
- Out time is 30 days at room temperature 70°F (21°C).

Availability:
Newport-FTP™ HMT6600 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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