HexPly® M34
75°C (167°F) curing epoxy matrix

Description
HexPly® M34 is an epoxy system, specifically developed for low temperature curing of large structural components, particularly in industrial markets.

HexPly® M34 is a self-extinguishing system, providing excellent fire-resistant properties, and meeting the German and French rail qualifications DIN 5510, S3-SR2-ST2 and NF F 16-101 (M2, F1). HexPly® M34 prepreg is ideal for manufacturing sandwich structures, providing excellent adhesion to PVC foam cores.

HexPly® M34 exhibits a good shelf life at Room Temperature for a low temperature curing system.

Benefits and Features
• Halogen free
• 10 days shelf life at RT
• Self adhesive on foam (PVC) and on honeycomb
• Low pressure moulding capability 0.8-3 bar (12-43 Psi)
• Good flexibility and handleability of prepregs
• Suitable for thick laminates - low exotherm
Resin Matrix Properties

Rheology

![Viscosity/poise vs. Temperature graph](image)

Gel Time

![Gel Time vs. Temperature graph](image)

Cured Matrix Properties cured at 75°C (167°F) - 8H

<table>
<thead>
<tr>
<th>Test</th>
<th>Values</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass transition temperature</td>
<td>80°C (176°F)</td>
<td>DMA</td>
</tr>
<tr>
<td>Cured resin density</td>
<td>1.26 g/cm³</td>
<td></td>
</tr>
<tr>
<td>Flexural</td>
<td>Str = 120 MPa (17.4 Ksi) Mod = 3.8 GPa (551 Ksi)</td>
<td></td>
</tr>
</tbody>
</table>

Prepreg Curing Conditions
The standard cure cycle is 8 hours at 75°C (167°F), at a pressure between 0.8 and 3 bar. The following alternative cure cycles can be used:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>65°C (149°F)</td>
<td>16 hours</td>
</tr>
<tr>
<td>90°C (194°F)</td>
<td>90 minutes</td>
</tr>
<tr>
<td>120°C (250°F)</td>
<td>40 minutes</td>
</tr>
</tbody>
</table>
## Typical Mechanical Properties on HexPly® M34 prepregs

*Main references (Others available)*

<table>
<thead>
<tr>
<th>Test</th>
<th>E-glass Balanced fabric 600 g/m²</th>
<th>E-glass Balanced fabric 300 g/m²</th>
<th>HS 12k carbon Balanced fabric 600 g/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>0° Tensile strength MPa (Ksi)</td>
<td>400 (58)</td>
<td>600 (87)</td>
<td>900 (130)</td>
</tr>
<tr>
<td>0° Tensile modulus GPa (Msi)</td>
<td>20 (2.9)</td>
<td>21 (3)</td>
<td>65 (9.4)</td>
</tr>
<tr>
<td>0° Flexure strength MPa (Ksi)</td>
<td>670 (97)</td>
<td>700 (101)</td>
<td>950 (137)</td>
</tr>
<tr>
<td>0° Flexure modulus GPa (Msi)</td>
<td>20 (2.9)</td>
<td>20 (2.9)</td>
<td>65 (9.4)</td>
</tr>
<tr>
<td>0° Compression strength MPa (Ksi)</td>
<td>/</td>
<td>540 (78)</td>
<td>600 (87)</td>
</tr>
<tr>
<td>0° Short beam strength MPa (Ksi)</td>
<td>53 (7.7)</td>
<td>50 (7.2)</td>
<td>70 (10)</td>
</tr>
<tr>
<td>Fibre volume content %</td>
<td>50</td>
<td>55</td>
<td>60</td>
</tr>
</tbody>
</table>

*HS = high strength*
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Prepreg Storage Life
- Shelf Life @ 23 + 2 °C (73 °F) 10 days
- Guaranteed Shelf Life @ -18 °C (0 °F) 12 months

Precautions for Use
The usual precautions when handling uncured synthetic resins and fibrous materials should be observed, and a Safety Data Sheet is available for this product. The use of clean, disposable, inert gloves provides protection for the operator and avoids contamination of material and components.

For more information
Hexcel is a leading worldwide supplier of composite materials to aerospace and industrial markets. Our comprehensive range includes:

- HexTow® carbon fibers
- HexForce® reinforcements
- HexPly® prepregs
- HexMC® molding compounds
- HexFlow® RTM resins
- Redux® adhesives
- HexTool® tooling materials
- HexWeb® honeycombs
- Acousti-Cap® sound attenuating honeycomb
- Engineered core
- Engineered products

For US quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list, please go to:

http://www.hexcel.com/contact/salesoffice

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