Description
HexPly® NR-M49 is a 120°C curing toughened epoxy matrix with good impact resistance suitable for use in performance cars. The matrix is highly tolerant to a wide variety of production techniques and equipment, making it easy to process. HexPly® NR-M49 is especially suitable for carbon-fiber look applications (for example car interiors).

Benefits and Features
- High toughened epoxy
- Good impact resistance
- Autoclave process for cosmetic application
- Self-adhesive on honeycomb
- Vacuum bag process with low porosity level achieved
- Good stability under UV
- Long shelf life and out life at room temperature
- Excellent tack and drape

Resin Matrix Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Transparent</td>
</tr>
<tr>
<td>Density</td>
<td>1.18 g/cm³</td>
</tr>
<tr>
<td>Maximum glass transition temperature, (TG onset dry)</td>
<td>105°C (depending of the reinforcement)</td>
</tr>
<tr>
<td>TG onset wet</td>
<td>80°C</td>
</tr>
</tbody>
</table>
Alternative Cure Cycles
HexPly® NR-M49 is a versatile curing system which can be cured from 85°C to 140°C.

The nominal cure cycle is 1 hour at 120°C but alternative cure cycles can be used:

<table>
<thead>
<tr>
<th>Cure Temperature</th>
<th>85°C</th>
<th>90°C</th>
<th>100°C</th>
<th>120°C</th>
<th>140°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>720 min</td>
<td>360 min</td>
<td>120 min</td>
<td>60 min</td>
<td>30 min</td>
</tr>
<tr>
<td>Tg</td>
<td>Up to 105°C*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Depending of the reinforcement

Recommended Cure Cycle for thin parts
NB : For carbon-fiber look parts, autoclave process is recommended (contact Hexcel for optimal cure cycle).

1. Apply the full vacuum (0.9 bar)
2. Apply 7 bar gauge autoclave pressure
3. Reduce vacuum to a safety value of 0.2 bar when the autoclave pressure reaches around 1 bar gauge
4. Heat at 1 to 3°C/min to 120°C
5. Hold at 120°C for 60 minutes
6. Cool at 2 to 5°C/minute
7. Vent autoclave pressure when the part reaches 60°C or below

Heat-up rates are dependent on component thickness. For example, slow heat-up rates should be used for thicker components and large tools. Accurate temperature measurements of the component should be made during the cure cycles by using thermocouples. For a honeycomb sandwich panel, a cure cycle of 1 to 3 bar should be used, dependent on honeycomb density.

Performance testing should accompany alternative cure cycles to ensure suitability for the particular application.
Prepreg Storage Life

Shelf Life¹:
12 months at -18°C/0°F (from date of manufacture).

¹ Shelf Life: The maximum storage life for HexPly® prepreg, when stored continuously, in a sealed moisture-proof bag, at -18°C/0°F or 5°C/41°F. To accurately establish the exact expiry date, consult the box label.

Out Life²:
30 days at room temperature (25°C max).

² The maximum accumulated time allowed at room temperature between removal from the freezer and cure.

Tack Life³:
Up to 30 days (depending of the reinforcements and the resin content) at room temperature (25°C max).

³ Tack Life: The time, at room temperature, during which prepreg retains enough tack for easy component lay-up.

Storage Conditions
HexPly® NR-M49 prepregs should be stored as received in a cool dry place or in a refrigerator. After removal from refrigerator storage, prepreg should be allowed to reach room temperature before opening the polythene bag, thus preventing condensation (a full reel in its packaging can take up to 48 hours).

Precautions for Use
The usual precautions when handling uncured synthetic resins and fibrous materials should be observed. 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
- HiMax® multiaxial reinforcements
- HexPly® prepregs
- HexAM® additive manufacturing
- HexMC® molding compounds
- HiFlow® RTM resins
- HexBond® adhesives
- HexTool® tooling materials
- HexWeb® honeycombs
- Acousti-Cap® sound attenuating honeycomb
- Engineered core
- Engineered products
- Polyspeed® laminates & pultruded profiles

For U.S. 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

©2022 Hexcel Corporation – All rights reserved. Hexcel Corporation and its subsidiaries (“Hexcel”) believe that the technical data and other information provided herein was materially accurate as of the date this document was issued. Hexcel reserves the right to update, revise or modify such technical data and information at any time. Any performance values provided are considered representative but do not and should not constitute a substitute for your own testing of the suitability of our products for your particular purpose. Hexcel makes no warranty or representation, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, and disclaims any liability arising out of or related to, the use of or reliance upon any of the technical data or information contained in this document.