TenCate AmberTool®
TC40
Tooling Prepreg

PRODUCT TYPE
BMI Tooling Prepreg

TYPICAL APPLICATIONS
• High temperature tooling

SHELF LIFE
Tack Life
14 days tack life at 77°F (25°C)
Out Life
30 days out life 77°F (25°C)
Frozen Storage Life
6 months storage life at <0°F (-18°C)

Tack life is the time during which the prepreg retains enough tack, drape and handling for easy component lay-up. Out life is the maximum time allowed at room temperature before cure.

PRODUCT DESCRIPTION
TenCate AmberTool® TC40 is a BMI resin which provides excellent elevated temperature properties and processability. TenCate AmberTool TC40 has been designed for high temperature tooling applications.

TEN CATE AMBERTOOL® TC40 PRODUCT BENEFITS/FEATURES
• Excellent Ambient and Elevated Temperature Properties
• Good Toughness
• Good Moisture Resistance
• Elevated Glass Transition Properties Available with Higher Cure or Post Cure
• Good Handleability and Processing

NEAT RESIN PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>AmberTool TC40</th>
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</thead>
<tbody>
<tr>
<td>Density</td>
<td>1.23 g/cc</td>
</tr>
<tr>
<td>Dry Tg (by DMA) using 400°F (203°C) Postcure</td>
<td>415°F (213°C)</td>
</tr>
<tr>
<td>Gel Time @ 350°F (177°C)</td>
<td>17 min</td>
</tr>
<tr>
<td>Viscosity at 158°F (70°C)</td>
<td>7160 cps</td>
</tr>
<tr>
<td>Viscosity at 212°F (100°C)</td>
<td>540 cps</td>
</tr>
<tr>
<td>Viscosity at 293°F (145°C)</td>
<td>200 cps</td>
</tr>
</tbody>
</table>

PRODUCT CONFIGURATION
Fabric........................................................................6k, 2x2 Twill at 370 gsm FAW, 34% resin content

<table>
<thead>
<tr>
<th>Ply Lay Ups/General Processing Guidance</th>
<th>10 ply lay up 1:8:1 Configuration (6k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6k 2x2 twill ply</td>
<td>0°</td>
</tr>
<tr>
<td>6k 2x2 twill plys</td>
<td>0°, +45°, -45°, 90°, +45°, -45°, +45°, 0°</td>
</tr>
<tr>
<td>6k 2x2 twill ply</td>
<td>0°</td>
</tr>
<tr>
<td>Room Temp Debulk of 15 minutes</td>
<td>Flat tools - No debulk recommended</td>
</tr>
<tr>
<td></td>
<td>Curved tools - Debulk at first and fifth ply</td>
</tr>
<tr>
<td></td>
<td>Complex curved tools - At plies 1, 3 and 5</td>
</tr>
</tbody>
</table>

Cure schedule - consult the Tooling Processing Guide for additional informations. In general, larger and more curved tools will require a much slower cure cycle with dwells to allow porosity to be be removed between plies.
TYPICAL CURE PARAMETERS*

- Apply vacuum. For autoclave applications, pressurize to 45-100 psi
- Heat to 360°F (182°C) (+10°F/6°C) at 5°F ± 3°F/min (3°C ± 2°C/min)
- Hold at 360°F (182°C) for 6 hours. (+15 min/-0 min)
- Post-cure at 410°F (210°C) for 2 hours.
- Cool at 5°F/min (3°C/min) to below 140°F (60°C)
- Higher Tg's can be obtained with higher temperature post cures.

*Refer to Tooling Processing Guide for more detailed cure and post cure instructions.

COMPOSITE LAMINATE STACKING SEQUENCE: LIST OF MATERIALS

1. Tool – aluminum, steel, Invar, composite (tool plates must be release coated or film covered)
2. Release coat or film – Frekote 700NC or 770NC, FEP, TEDLAR
3. Silicone Edge Dams – Thicker than laminate
4. Laminate
5. Release coat or film – Frekote 700NC or 770NC, FEP, TEDLAR
6. Caul plate – aluminum, steel, Invar, silicone rubber sheet (metal caul plates must be release coated or wrapped)
7. 2.2 osy polyester breather – 1 or more
8. Vacuum bag
9. Vacuum sealant
10. Glass yarn string - (alternatively or additionally breather may wrap over top of dam to contact edge)