Starting Formulation

**SF 7002**

**Glass-Filled Epoxy Pre-Mix Molding Compound**

**EPON™ Resin 828 / HELOXY™ Modifier 505**

**Introduction**
This formulation illustrates the preparation of a compression molding compound designed for high impact strength, thermal shock resistance, high temperature performance (long-term service at 120° to 175 °C), wide spectrum chemical resistance, and low cost. Incorporation of the vinyl chloride copolymer eliminates binder squeeze-out at the mold part line.

**Suggested Uses**
- Molded parts such as sand-core boxes for foundry work, pipe fitting, cases, and housings
- Electrical insulation such as transformer bushings for interior service

<table>
<thead>
<tr>
<th>Formula</th>
<th>Material</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPON Resin 828</td>
<td>Hexion</td>
<td>90</td>
<td>9.33</td>
<td></td>
</tr>
<tr>
<td>HELOXY Modifier 505</td>
<td>Hexion</td>
<td>10</td>
<td>1.19</td>
<td></td>
</tr>
<tr>
<td>Geon 427 Polyvinyl Chloride</td>
<td>B. F. Goodrich Co.</td>
<td>20</td>
<td>1.71</td>
<td></td>
</tr>
<tr>
<td>Novacite 325 Silica</td>
<td>Malvern Minerals Co.</td>
<td>100</td>
<td>4.53</td>
<td></td>
</tr>
<tr>
<td>ASP 101 Aluminum Silicate</td>
<td>J. M. Huber Corp.</td>
<td>30</td>
<td>1.40</td>
<td></td>
</tr>
<tr>
<td>Black Iron Oxide</td>
<td>C. K. Williams Co.</td>
<td>5</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>Carnauba Wax (powdered)</td>
<td>Cornelius Wax Refining</td>
<td>3</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Zinc Stearate (powdered)</td>
<td>Witco Chemical Corp.</td>
<td>10</td>
<td>1.10</td>
<td></td>
</tr>
<tr>
<td>Phthalic Anhydride (powdered)</td>
<td>Allied Chemical Corp.</td>
<td>40</td>
<td>3.15</td>
<td></td>
</tr>
<tr>
<td>1/2 inch Chopped Fiberglass</td>
<td>Owens-Corning Fiberglas Co.</td>
<td>80</td>
<td>3.78</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>388</strong></td>
<td><strong>26.74</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Compounding Procedure**
Mix all components except the phthalic anhydride and chopped fiberglass into a jacketed, high shear sigma blade mixer and mix at 66 °C until all powder components are uniformly dispersed and thoroughly wetted by the resin. Maintain the batch temperature at 66 °C; add the powdered phthalic anhydride. Then add the chopped fiberglass in increments and continue mixing for about 5 to 10 minutes, or until all the fibers are uniformly dispersed but not greatly reduced in length. Discharge the batch and cool to room temperature. Wrap the premix compound in polyethylene film and store in a sealed container.

**Typical Handling / Handling Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>lbs/gal</td>
<td>14.5</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>Black</td>
</tr>
<tr>
<td>Form</td>
<td></td>
<td>Fiber-filled cake, extruded rope or preform</td>
</tr>
</tbody>
</table>

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Expected Pot Life

<table>
<thead>
<tr>
<th>Temperature</th>
<th>°C</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>at 25 °C</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>at 4 °C</td>
<td></td>
<td>&gt;6</td>
</tr>
</tbody>
</table>

Suggested Molding Conditions

<table>
<thead>
<tr>
<th>Temperature</th>
<th>°C</th>
<th>Pressure</th>
<th>psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td></td>
<td>Pressure</td>
<td>psi</td>
</tr>
</tbody>
</table>

| Time in Press | min. | 2 |

Typical Cured State Properties

Table 2 / Cured State Properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Deflection Temperature</td>
<td>°C</td>
<td>134</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>psi</td>
<td>8,100</td>
</tr>
<tr>
<td>Tensile Elongation</td>
<td>%</td>
<td>0.8</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>psi</td>
<td>13,000</td>
</tr>
<tr>
<td>Flexural Modulus</td>
<td>ksi</td>
<td>1,000</td>
</tr>
<tr>
<td>Izod Impact, notch</td>
<td>ft•lb/in.</td>
<td>1.4</td>
</tr>
</tbody>
</table>

1 Determined on 1/4-inch thick sheets compression molded at 150 °C and 400 psi for a period of 3 minutes, then removed from the press and post-cured for 1 hour at 150 °C.

Storage

Recommendations regarding storage conditions can be obtained by visiting our web site at www.hexion.com

General Information

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Please refer to the MSDS for the most current Safety and Handling information.

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