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

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

Compounding
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

Table 1 / 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>Black</td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Fiber-filled cake, extruded rope or preform</td>
<td></td>
</tr>
</tbody>
</table>
Expected Pot Life

at 25 °C months 4
at 4 °C months >6

Suggested Molding Conditions

<table>
<thead>
<tr>
<th>Temperature</th>
<th>°C</th>
<th>Pressure</th>
<th>psi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>125</td>
<td>300</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time in Press</th>
<th>min.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Typical Cured State Properties

Table 2 / Cured State Properties

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

† 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

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Safety, Storage & Handling

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

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