Starting Formulation

SF 6009

General Purpose Topping and Patching Compound
EPON™ Resin 828 / HELOXY™ Modifier 8 / EPIKURE™ Curing Agent 3277 and 3271

Introduction
This trowelable floor topping formulation was designed for general interior use. Resistance to a broad spectrum of chemicals permits use in areas subjected to moderate exposure to alkalines, dilute acids, salt solutions, sugar solutions, greases, animal fats, oils and acidic foods processed from milk, citrus fruits, tomatoes, vinegar, etc. Prolonged exposure to strong solvents or strong corrosives is not recommended. An additional feature of this formulation is its 2:1 (by volume) resin:converter combining ratio.

<table>
<thead>
<tr>
<th>Formula</th>
<th>Material</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resin Portion</td>
<td>EPON Resin 828</td>
<td>Hexion</td>
<td>90.00</td>
<td>9.28</td>
</tr>
<tr>
<td></td>
<td>HELOXY Modifier 8</td>
<td>Hexion</td>
<td>10.00</td>
<td>1.35</td>
</tr>
<tr>
<td></td>
<td>Total Resin Portion</td>
<td></td>
<td>100.00</td>
<td>10.63</td>
</tr>
<tr>
<td>Converter Portion</td>
<td>EPIKURE Curing Agent 3277</td>
<td>Hexion</td>
<td>40.85</td>
<td>5.11</td>
</tr>
<tr>
<td></td>
<td>EPIKURE Curing Agent 3271</td>
<td>Hexion</td>
<td>2.15</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>Total Converter Portion</td>
<td></td>
<td>43.00</td>
<td>5.36</td>
</tr>
<tr>
<td>Aggregate Portion</td>
<td>Silica Sand 1</td>
<td></td>
<td>858.00</td>
<td>38.88</td>
</tr>
<tr>
<td></td>
<td>Total Filler Portion</td>
<td></td>
<td>858.00</td>
<td>38.88</td>
</tr>
</tbody>
</table>

1 Use dry sand specifically graded for good packing and troweling characteristics available in standard weight bags for convenience. This sieve analysis is one characteristic of sands that will trowel well:

<table>
<thead>
<tr>
<th>U.S. Standard Sieve #</th>
<th>Percent Retained</th>
</tr>
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<tbody>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>0-10</td>
</tr>
<tr>
<td>16</td>
<td>10-20</td>
</tr>
<tr>
<td>30</td>
<td>25-35</td>
</tr>
<tr>
<td>50</td>
<td>35-45</td>
</tr>
<tr>
<td>100</td>
<td>5-15</td>
</tr>
</tbody>
</table>

A 27:40:33 blend of Grade 2/Grade 1/Grade 0 silica sands from New Jersey Pulverizing Company is one example of an aggregate conforming to this particle size gradation.
Clean old concrete substrates by either sandblasting or scarifying (Tennant grinding machine) to remove surface contaminants such as oils, fats, greases, waxes, membrane coatings, paints, etc. The laitance of new concrete can be removed with an acid etch (muriatic acid) followed by flushing with water then scrubbing and drying.

To ensure maximum adhesion, a prime coat of the unfilled binder (resin and converter portions) should be applied to the concrete substrate by brush, roller, or squeegee. A coverage rate of 160 square feet/gallon (average film thickness of 10 mils) is suggested for highly porous substrates where heavier applications may be required. Then apply the topping system prior to gelation of the prime coat.

To prepare the topping system, blend the resin and converter portions in the designated ratio and mix until homogeneous. Power agitation is recommended, but manual stirring may be used if care is taken to accomplish thorough mixing. In either case, the sides and bottom of the mixing vessel should be scraped frequently to insure complete blending. Pour the blended binder over the sand and mix in a KOL Mixal, paddle-type mortar mixer or with a drill motor powered agitator.

Distribute the sand/binder mix to the desired thickness and finish with a trowel. This procedure provides additional working life by permitting the heat of reaction to dissipate from the thinner sections. This procedure may be modified for applying skid proof toppings by broadcasting sand or abrasive grains over the ungelled topping. The excess (unwetted) grains are swept off after the epoxy binder has hardened.

### Typical Handling Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combining Ratio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resin/Converter</td>
<td>by weight</td>
<td>100 : 43</td>
</tr>
<tr>
<td></td>
<td>by volume</td>
<td>2 : 1</td>
</tr>
<tr>
<td>Sand/binder</td>
<td>by weight</td>
<td>6 : 1</td>
</tr>
<tr>
<td></td>
<td>by volume</td>
<td>2.45 : 1</td>
</tr>
<tr>
<td>Binder Viscosity at 25 °C</td>
<td>cP</td>
<td>900</td>
</tr>
<tr>
<td>Gel Time, 100 grams binder at 25 °C</td>
<td>min</td>
<td>47</td>
</tr>
<tr>
<td>Gel Time, one pint binder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>at 13 °C</td>
<td>min</td>
<td>50</td>
</tr>
<tr>
<td>at 25 °C</td>
<td>min</td>
<td>29</td>
</tr>
<tr>
<td>at 38 °C</td>
<td>min</td>
<td>14</td>
</tr>
<tr>
<td>Expected Working Life, one quart sand-filled topping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>at 13 °C</td>
<td>min</td>
<td>240</td>
</tr>
<tr>
<td>at 38 °C</td>
<td>min</td>
<td>50</td>
</tr>
<tr>
<td>Set Time, 1/4 inch topping</td>
<td>hrs</td>
<td></td>
</tr>
<tr>
<td>at 13 °C</td>
<td>hrs</td>
<td>16</td>
</tr>
<tr>
<td>at 25 °C</td>
<td>hrs</td>
<td>7</td>
</tr>
<tr>
<td>at 38 °C</td>
<td>hrs</td>
<td>3.5</td>
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### Typical Cured State Properties

<table>
<thead>
<tr>
<th>Property</th>
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<tbody>
<tr>
<td>Generated:</td>
<td>November 22, 2020</td>
</tr>
<tr>
<td>Issue Date:</td>
<td></td>
</tr>
<tr>
<td>Revision:</td>
<td></td>
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<table>
<thead>
<tr>
<th>Property</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Deflection Temperature</td>
<td>°C</td>
<td>58</td>
</tr>
<tr>
<td>Tensile Strength</td>
<td>psi</td>
<td>7,700</td>
</tr>
<tr>
<td>Tensile Modulus $10^6$</td>
<td>psi</td>
<td>0.46</td>
</tr>
<tr>
<td>Tensile Elongation</td>
<td>%</td>
<td>7.2</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>psi</td>
<td>11,800</td>
</tr>
<tr>
<td>Flexural Modulus $10^6$</td>
<td>psi</td>
<td>0.35</td>
</tr>
<tr>
<td>Flexural Deflection</td>
<td>inch</td>
<td>&gt;0.6</td>
</tr>
<tr>
<td>Izod Impact, notch</td>
<td>ft-lb/inch</td>
<td>0.48</td>
</tr>
<tr>
<td>Hardness</td>
<td>Shore D</td>
<td>85</td>
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</table>

**Chemical Absorption, 2**

<table>
<thead>
<tr>
<th>Substance</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>0.13</td>
</tr>
<tr>
<td>5% Acetic Acid</td>
<td>0.36</td>
</tr>
<tr>
<td>Xylene</td>
<td>3.46</td>
</tr>
</tbody>
</table>

**Chemical Resistance of Sand-Filled Topping 3**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Methyl Ethyl Ketone</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Toluene</td>
<td>1</td>
</tr>
<tr>
<td>5% Detergent</td>
<td>&gt;28</td>
</tr>
<tr>
<td>5% Bleach</td>
<td>&gt;28</td>
</tr>
<tr>
<td>5% Acetic Acid</td>
<td>&gt;28</td>
</tr>
<tr>
<td>25% Acetic Acid</td>
<td>&gt;28</td>
</tr>
<tr>
<td>25% Sulfuric Acid</td>
<td>&gt;28</td>
</tr>
<tr>
<td>15% Hydrochloric Acid</td>
<td>&gt;28</td>
</tr>
<tr>
<td>5% Citric Acid</td>
<td>&gt;28</td>
</tr>
<tr>
<td>5% Lactic Acid</td>
<td>&gt;28</td>
</tr>
<tr>
<td>5% Caustic</td>
<td>&gt;28</td>
</tr>
<tr>
<td>Skydrol</td>
<td>&gt;28</td>
</tr>
<tr>
<td>Oleic Acid</td>
<td>&gt;28</td>
</tr>
</tbody>
</table>

1 Determined using 1/8 inch unfilled castings cured two weeks at 23 °C.
2 Weight gain after immersion for 24 hours at 23 °C.
3 Topping was cured 3 weeks at 23 °C; days without deterioration after continuous contact with fresh chemical.

Storage Recommendations regarding storage conditions can be obtained by visiting our web site at [www.hexion.com](http://www.hexion.com)
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