Starting Formulation

SF 1705

Waterborne Gloss White Enamel – 4:1 Ratio
EPI-REZ™ Resin 6520-WH-53 / EPIKURE™ Curing Agent 6870-W-53

Introduction
This starting point formulation is designed for high gloss applications where customers prefer to prepare a pigment/water slurry concentrate that can be let-down with the epoxy resin dispersion.

Suggested Uses
Topcoat over primed metal surfaces
General maintenance

Features
Stable pigmented Part A component
High gloss (greater than 85% at 60 degrees over four hours pot life)
Low VOC\(^1\) (165 g/L as applied)
NonHAPS\(^2\)
Fast dry times (through dry in less than eight hours)

1 VOC is the acronym for volatile organic compound as defined by the U.S. 40CFR51.100 (s).
2 HAP is the acronym for hazardous air pollutant as defined by the U.S. Clean Air Act Amendments of 1990.

<table>
<thead>
<tr>
<th>Formula</th>
<th>Material</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>Pigment Concentrate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CARDURA™ Glycidyl Ester E10P</td>
<td>Hexion</td>
<td>10.8</td>
<td>1.35</td>
</tr>
<tr>
<td></td>
<td>TAM-20 surfactant</td>
<td>ETHOX</td>
<td>4.5</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>Deionized Water</td>
<td></td>
<td>124.3</td>
<td>14.89</td>
</tr>
<tr>
<td></td>
<td>OPTIFLO H-600</td>
<td>Süd-Chemie</td>
<td>0.4</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Ti-Pure R-960</td>
<td>Du Pont Chemicals</td>
<td>198.2</td>
<td>6.14</td>
</tr>
<tr>
<td></td>
<td>BYK 22 Defoamer</td>
<td>BYK-Chemie</td>
<td>0.4</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Pigment Concentrate Total</td>
<td></td>
<td>338.8</td>
<td>23.30</td>
</tr>
<tr>
<td></td>
<td>EPI-REZ Resin 6520-WH-53</td>
<td>Hexion</td>
<td>387.3</td>
<td>43.03</td>
</tr>
<tr>
<td></td>
<td>Drew Plus L-475 Defoamer</td>
<td>Drew Chemical</td>
<td>1.0</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Propylene glycol monophenyl ether (PPh)</td>
<td>Lyondell</td>
<td>26.0</td>
<td>2.95</td>
</tr>
<tr>
<td></td>
<td>Dipropylene glycol n-butyl ether (DPnB)</td>
<td>Lyondell</td>
<td>20.6</td>
<td>2.72</td>
</tr>
<tr>
<td></td>
<td>Deionized Water</td>
<td></td>
<td>65.8</td>
<td>7.88</td>
</tr>
<tr>
<td></td>
<td>Total Part A</td>
<td></td>
<td>839.3</td>
<td>80.00</td>
</tr>
</tbody>
</table>

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Part B

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIKURE Curing Agent 6870-W-53</td>
<td>Hexion</td>
<td>172.4</td>
<td>18.95</td>
</tr>
<tr>
<td>EPIKURE Curing Agent 3253</td>
<td>Hexion</td>
<td>5.0</td>
<td>0.61</td>
</tr>
<tr>
<td>Raybo 60 (flash rust additive)</td>
<td>Raybo Chemical Company</td>
<td>0.8</td>
<td>0.09</td>
</tr>
<tr>
<td>Texanol</td>
<td>Eastman</td>
<td>2.8</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Total Part B: 181.0 Pounds, 20.00 Gallons

Total Part A & B: 1020.3 Pounds, 100.00 Gallons

Mixing Instructions

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td></td>
<td>839.3</td>
<td>80.00</td>
</tr>
<tr>
<td>Part B</td>
<td></td>
<td>181.0</td>
<td>20.00</td>
</tr>
<tr>
<td>Part A + B</td>
<td></td>
<td>1020.3</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Typical Formulation Table 1 / Formulation Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mix ratio Part A : Part B</td>
<td>By volume</td>
<td>4 : 1</td>
</tr>
<tr>
<td>Amine hydrogen eq. to Epoxy eq. ratio (based on solids)</td>
<td></td>
<td>1 : 1</td>
</tr>
<tr>
<td>Epoxy Resin / Curing Agent ratio (solids basis)</td>
<td>%wt</td>
<td>70.3</td>
</tr>
<tr>
<td>Resin</td>
<td>%wt</td>
<td>29.7</td>
</tr>
<tr>
<td>Curing Agent</td>
<td>%</td>
<td>50.2</td>
</tr>
<tr>
<td>Total weight solids</td>
<td>%</td>
<td>40.8</td>
</tr>
<tr>
<td>Total volume solids</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Pigment to Binder ratio by weight</td>
<td>%</td>
<td>0.64</td>
</tr>
<tr>
<td>PVC</td>
<td>%</td>
<td>15</td>
</tr>
<tr>
<td>VOC</td>
<td>lb/gal</td>
<td>1.38</td>
</tr>
<tr>
<td>Induction Time</td>
<td>min.</td>
<td>0</td>
</tr>
<tr>
<td>Viscosity, Part A + Part B, Stormer at 25 °C</td>
<td>KU</td>
<td>69</td>
</tr>
<tr>
<td>Initial</td>
<td>KU</td>
<td>73</td>
</tr>
<tr>
<td>1 hrs</td>
<td>KU</td>
<td>87</td>
</tr>
<tr>
<td>4 hrs</td>
<td>KU</td>
<td></td>
</tr>
<tr>
<td>Gloss pot life</td>
<td>hrs</td>
<td>3 - 4</td>
</tr>
</tbody>
</table>

Typical Film Properties Table 2 / Film Performance Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM Method</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film thickness (DFT)</td>
<td>D-1186</td>
<td>mils</td>
<td>1.6</td>
</tr>
<tr>
<td>Property</td>
<td>Test</td>
<td>Time 1</td>
<td>Time 2</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Pencil hardness</td>
<td>D-3363</td>
<td>3B-2B</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td>Set to touch dry</td>
<td>D-5895-B</td>
<td>hrs</td>
<td>0.75</td>
</tr>
<tr>
<td>Cotton free</td>
<td>D-5895-B</td>
<td>hrs</td>
<td>4.75</td>
</tr>
<tr>
<td>Through dry</td>
<td>D-5895-B</td>
<td>hrs</td>
<td>7.5</td>
</tr>
<tr>
<td>Gloss 60°/20°, after 24 hour cure</td>
<td>D-522</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5 hr</td>
<td></td>
<td>%</td>
<td>99 / 84</td>
</tr>
<tr>
<td>3 hr.</td>
<td></td>
<td></td>
<td>95 / 76</td>
</tr>
<tr>
<td>4 hr.</td>
<td></td>
<td></td>
<td>86 / 50</td>
</tr>
<tr>
<td>MEK double rubs</td>
<td>D-5402</td>
<td>cycles</td>
<td>40</td>
</tr>
<tr>
<td>24 hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 days</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>7 days</td>
<td></td>
<td></td>
<td>160</td>
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</table>

1 Cured at 75-79°F and 50-80% R.H.

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

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**Safety, Storage & Handling**

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

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