Starting Formulation

SF 1702

Waterborne Gloss White Enamel – 3:1 Ratio
EPI-REZ™ Resin 6520-WH-53 / EPIKURE™ Curing Agent 6870-W-53

Introduction: This starting point formulation is designed to function as a high gloss enamel with a relatively long pot life (4-5 hours). Its applications include direct to metal coatings and general industrial top coats.

Suggested Uses:
- Topcoat metal over primed surfaces
- Maintenance topcoat
- Direct to Metal (DTM) coatings

Features:
- Combining ratio of 3:1 by volume
- Long gloss-pot life
- VOC¹ level of 1.7 lb/gal (210 g/l)
- No induction period required

¹ VOC is the acronym for volatile organic compound as defined by the U.S. 40CFR51.100 (s).

Formula

<table>
<thead>
<tr>
<th>Material</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastman EP</td>
<td>Eastman Chemical Company</td>
<td>71.0</td>
<td>9.33</td>
</tr>
<tr>
<td>Deionized Water</td>
<td></td>
<td>61.6</td>
<td>7.38</td>
</tr>
<tr>
<td>BYK 022 defoamer</td>
<td>BYK Chemie</td>
<td>3.6</td>
<td>0.43</td>
</tr>
<tr>
<td>ETHOX TAM 20</td>
<td>ETHOX Chemicals, LLC</td>
<td>4.0</td>
<td>0.49</td>
</tr>
<tr>
<td>CARDURA™ Glycidyl Ester E10P</td>
<td>Hexion</td>
<td>10.8</td>
<td>1.35</td>
</tr>
<tr>
<td>OPTIFLO® H-600</td>
<td>Süd-Chemie</td>
<td>9.0</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Mix well at high speed, ~10 minutes

High speed disperse to Hegman 7+ then

Ti-PURE® R-960                         | DuPont Chemical Company     | 225.0  | 6.97    |

Part B

<table>
<thead>
<tr>
<th>Material</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>425.0</td>
<td>47.22</td>
</tr>
<tr>
<td>VERSATIC™ Acid 10</td>
<td>Hexion</td>
<td>11.1</td>
<td>1.46</td>
</tr>
<tr>
<td>DOWANOL® DPM (pre-mix with VERSATIC 10)</td>
<td>Dow Chemical Company</td>
<td>7.2</td>
<td>0.91</td>
</tr>
<tr>
<td>Raybo 60 (flash rust additive)</td>
<td>Raybo Chemical Company</td>
<td>4.2</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Total Part A                           |                            | 816.8  | 75.00   |

Total Part B                           |                            | 816.8  | 75.00   |

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<table>
<thead>
<tr>
<th></th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>816.8</td>
<td>75.00</td>
</tr>
<tr>
<td>Part B</td>
<td>222.6</td>
<td>25.00</td>
</tr>
<tr>
<td>Part A + B</td>
<td>1039.4</td>
<td>100.00</td>
</tr>
</tbody>
</table>

### Mixing Instructions

- **Mix ratio Part A: Part B**
  - By volume: 3 : 1
- **Amine hydrogen eq. to Epoxy eq. ratio (based on solids)**
  - 0.90
- **Epoxy Resin / Curing Agent ratio (solids basis)**
  - Resin: 0.69
  - Curing Agent: 0.31
- **Total weight solids**
  - %: 56.5
- **Total volume solids**
  - %: 46.5
- **Pigment to Binder ratio by weight**
  - 0.65
- **PVC**
  - %: 15
- **VOC**
  - g/L: 210
- **Induction Time**
  - minutes: 0 - 5
- **Gloss pot life**
  - hrs: 4 – 5
- **Viscosity, Part A + Part B, Stormer at 25 °C**
  - Initial: KU 114
  - At 15% dilution with water: KU 84

### Typical Film Properties

<table>
<thead>
<tr>
<th>ASTM Method</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Film thickness</td>
<td>D -1186</td>
<td>mils</td>
</tr>
<tr>
<td>Pencil hardness</td>
<td>D-3363</td>
<td></td>
</tr>
<tr>
<td>24 hrs</td>
<td></td>
<td>5B</td>
</tr>
<tr>
<td>7 days</td>
<td></td>
<td>F</td>
</tr>
<tr>
<td>Set to touch dry</td>
<td>D-5895-B</td>
<td>hrs</td>
</tr>
<tr>
<td>Cotton free</td>
<td>D-5895-B</td>
<td>hrs</td>
</tr>
<tr>
<td>Through dry</td>
<td>D-5895-B</td>
<td>hrs</td>
</tr>
</tbody>
</table>
Direct/Reverse impact  
D-2794  
in-lb  
160/160

Gloss 60°/20° (2 – 3 mil DFT), after 24 hour cure  
D-523  
98 / 77

MEK double rubs  
D-5402  
cycles  
34

24 hrs  
34

7 days  
99

Conical mandrel  
D-522  
%  
32

¹ After seven days cure at 75-79°F and 50-60% R.H.

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

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