Starting Formulation

SF 1741

Waterborne White Primer – 4:1 Ratio with <100 g/L VOC
EPI-REZ™ Resin 6520-WH-53 / EPIKURE™ Curing Agent 6870-W-53

Introduction
This waterborne white primer is designed as an alternative to traditional, high VOC, solventborne epoxy / polyamide coatings. This formulation does not require an induction time. It provides superior anticorrosive performance; visible end of pot life, and a good balance of final performance properties (hardness, flexibility, abrasion-and chemical resistance). This primer can be overcoated with a variety of coating types in two to three hours. Compared to Starting Formulation 1700, it offers improved wet adhesion, in the scribed and unscribed areas, after corrosion testing or water immersion.

Suggested Uses
- Corrosion resistant metal primer for industrial maintenance
- Transportation primers (truck, bus, ACE)
- Railcar coatings & small metal parts

Features
- Non-HAP\(^1\) formula
- VOC\(^2\) level of 0.71 lb/gal. (85 g/l)
- Rapid dry and recoat (6-7 hrs, dry-through)

\(^2\) VOC is the acronym for volatile organic compound as defined by the U.S. 40CFR51.100 (s).

\(^1\) 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>EPI-REZ Resin 6520-WH-53</td>
<td>Hexion</td>
<td>314.7</td>
<td>34.97</td>
</tr>
<tr>
<td></td>
<td>Propylene Glycol Propyl Ether (PnP)</td>
<td>Dow Chemical Co</td>
<td>7.3</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>Dipropyleneglycol n-Butyl Ether (DPnB)</td>
<td>Dow Chemical Co</td>
<td>12.8</td>
<td>1.71</td>
</tr>
<tr>
<td></td>
<td>EFKA 2526 Defoamer</td>
<td>CIBA Specialties Company</td>
<td>3.1</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>Anti-Terra U 100</td>
<td>BYK Chemie</td>
<td>10.5</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>Ti-Pure R-960</td>
<td>Du Pont</td>
<td>125.9</td>
<td>3.69</td>
</tr>
<tr>
<td></td>
<td>Sparmite A Barytes</td>
<td>Elementis Pigments</td>
<td>70.3</td>
<td>1.92</td>
</tr>
<tr>
<td></td>
<td>10ES Wollastocoat</td>
<td>NYCO Minerals</td>
<td>104.9</td>
<td>4.41</td>
</tr>
<tr>
<td></td>
<td>Disparlon L-1982N</td>
<td>King Industries</td>
<td>4.2</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>HALOX SW-111</td>
<td>HALOX Pigments</td>
<td>99.3</td>
<td>4.12</td>
</tr>
<tr>
<td></td>
<td>Wet Ground Mica, 325 Mesh</td>
<td>King Mountain Mica</td>
<td>3.1</td>
<td>0.13</td>
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</tbody>
</table>

High Speed Disperse to a texture of 5-6 Hegman Scale. Reduce speed, then add while continuing to mix.

| EPI-REZ Resin 6520-WH-53 | Hexion | 129.0 | 14.34 |

CoatOSil1770 Silane

| BYK 348 | BYK Chemie | 4.5 | 0.51 |

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Typical Formulation Table 1 / Formulation Properties

<table>
<thead>
<tr>
<th>Properties</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 equiv. to Epoxy equiv. ratio (based on solids)</td>
<td></td>
<td>0.6 : 1</td>
</tr>
<tr>
<td>Total weight solids</td>
<td>%</td>
<td>61.5</td>
</tr>
<tr>
<td>PVC</td>
<td>%</td>
<td>30</td>
</tr>
<tr>
<td>Volatile Organic Compound (VOC)</td>
<td>lb/gal</td>
<td>0.71</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>Pot life</td>
<td>hrs</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Typical Film Table 2 / Film Performance Properties on smooth cold-rolled steel (CRS) panels

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM Method</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Film Thickness</td>
<td>D-1186</td>
<td>mils</td>
<td>3 – 4</td>
</tr>
<tr>
<td>Dry Times (drawdowns, 3 mil dry)</td>
<td>D-5895B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set-to-Touch, Stage II</td>
<td></td>
<td>hrs</td>
<td>1.5</td>
</tr>
<tr>
<td>Cotton Free, Stage III</td>
<td></td>
<td>hrs</td>
<td>2.5</td>
</tr>
<tr>
<td>Through, Stage IV</td>
<td></td>
<td>hrs</td>
<td>6.5</td>
</tr>
<tr>
<td>Pencil hardness</td>
<td>D-1186</td>
<td></td>
<td>3B</td>
</tr>
<tr>
<td>24 hrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloss, (60°)</td>
<td>D-523</td>
<td>%</td>
<td>10</td>
</tr>
<tr>
<td>Sag resistance</td>
<td>D-4400</td>
<td>mils</td>
<td>16</td>
</tr>
<tr>
<td>Salt Spray Resistance</td>
<td>B-117</td>
<td>hrs</td>
<td>1000</td>
</tr>
</tbody>
</table>
Blister rating, field
D-714
10 - #9F

Scribe creep
D-1654
mm
0-3

Adhesion, in field area after 1 hr. recovery
D-3359
4A, 5B

1 Performance data is reported after 7 days at 77°F and 50% RH

Storage
Recommendations regarding storage conditions for Hexion epoxy resins, modifiers and curing agents can be obtained by visiting our web site at www.hexion.com/epoxy

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