Starting Formulation

SF 1810
Waterborne Red Oxide Primer
EPI-REZ™ Resin 5522-WY-55 / EPIKURE™ Curing Agent 8290-Y-60

Suggested Uses Industrial Maintenance Metal Primer
An alternative to Starting Formulation No. 1825

<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 5522-WY-55</td>
<td>Hexion</td>
<td>330.0</td>
<td>37.21</td>
</tr>
<tr>
<td></td>
<td>Diacetone Alcohol</td>
<td>Shell Chemical Co.</td>
<td>7.0</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Colloid 640 Defoamer</td>
<td>Rhodia</td>
<td>3.5</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td></td>
<td>60.0</td>
<td>7.20</td>
</tr>
<tr>
<td></td>
<td>RO-4097 Kroma Red, Red Iron Oxide</td>
<td>Elementis Pigmets</td>
<td>71.1</td>
<td>1.74</td>
</tr>
<tr>
<td></td>
<td>Sparmite Barium Sulfate</td>
<td>Elementis Pigmets</td>
<td>71.1</td>
<td>1.94</td>
</tr>
<tr>
<td></td>
<td>10ES Wollastokup</td>
<td>NYCO, Inc.</td>
<td>106.7</td>
<td>4.40</td>
</tr>
<tr>
<td></td>
<td>Halox SW-111</td>
<td>Halox Pigments, Inc.</td>
<td>100.0</td>
<td>4.20</td>
</tr>
<tr>
<td></td>
<td>Zeeosphere type 400</td>
<td>3M Inc.</td>
<td>71.1</td>
<td>3.55</td>
</tr>
<tr>
<td></td>
<td>Water Ground Mica, 325 Mesh</td>
<td>KMG Minerals, Inc.</td>
<td>7.5</td>
<td>0.32</td>
</tr>
</tbody>
</table>

High Speed Disperse to a Texture of 5-6 Hegman, reduce speed, then add

<table>
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<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPI-REZ Resin 5522-WY-55</td>
<td>Hexion</td>
<td>147.0</td>
<td>16.43</td>
<td></td>
</tr>
<tr>
<td>DI Water</td>
<td></td>
<td>14.2</td>
<td>1.71</td>
<td></td>
</tr>
<tr>
<td>Total Part A</td>
<td></td>
<td>989.2</td>
<td>80.00</td>
<td></td>
</tr>
</tbody>
</table>

Part B

<table>
<thead>
<tr>
<th>Formula</th>
<th>Material</th>
<th>Supplier</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIKURE Curing Agent 8290-Y-60</td>
<td>Hexion</td>
<td>60.0</td>
<td>6.80</td>
<td></td>
</tr>
<tr>
<td>DI Water</td>
<td></td>
<td>110.0</td>
<td>13.20</td>
<td></td>
</tr>
<tr>
<td>Total Part B</td>
<td></td>
<td>170.0</td>
<td>20.00</td>
<td></td>
</tr>
</tbody>
</table>

Total Part A & B                   |                           | 1,159.2                   | 100.00 |

Mixing Instructions

<table>
<thead>
<tr>
<th>Formula</th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>989.2</td>
<td>80.00</td>
</tr>
<tr>
<td>Part B</td>
<td>170.0</td>
<td>20.00</td>
</tr>
<tr>
<td>Part A + B</td>
<td>1,159.2</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Generated: April 14, 2020
Issue Date: Revision:
Resin Composition

<table>
<thead>
<tr>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>% solids</td>
</tr>
<tr>
<td>Part B</td>
<td>% solids</td>
</tr>
<tr>
<td>Part A + B</td>
<td>% solids</td>
</tr>
</tbody>
</table>

Typical Formulation Properties

<table>
<thead>
<tr>
<th>Properties</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight solids</td>
<td>%</td>
<td>62.0</td>
</tr>
<tr>
<td>Total volume solids</td>
<td>%</td>
<td>46.2</td>
</tr>
<tr>
<td>Pigment volume concentration (PVC)</td>
<td>%</td>
<td>35.0</td>
</tr>
<tr>
<td>Volatile Organic Compound (VOC)</td>
<td>lb/gal</td>
<td>1.23</td>
</tr>
<tr>
<td>Induction Time</td>
<td>min.</td>
<td>30</td>
</tr>
<tr>
<td>Viscosity @ 25°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part A + Part B</td>
<td>KU</td>
<td>70</td>
</tr>
</tbody>
</table>

Coatings Performance Comparison

To determine if a blend of EPI-REZ Resin 3520-WY-55 and EPI-REZ Resin 3546-WY-53 (77% to 23% w/w blend of dispersion as supplied) could be substituted on a pound for pound basis for an EPI-REZ Resin 5522-WY-55 dispersion in this application, we compared the performance of this starting formulation with that of Starting Formulation No. 1825.

Starting Formulation No. 1825 is an anticorrosive, red iron oxide primer based on EPI-REZ Resin 3520-WY-55 and EPI-REZ Resin 3546-WY-53 (77% to 23% w/w blend of dispersion as supplied) and EPIKURE Curing Agent 8290-Y-60 that was designed for light- to medium-duty maintenance applications.

The results of this performance comparison are shown on the next page.

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>24 hr. pencil hardness</td>
<td>D 1186</td>
<td>3B</td>
</tr>
<tr>
<td>7 day pencil hardness</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Set to touch dry</td>
<td>D 5895-B</td>
<td>hrs</td>
</tr>
<tr>
<td>Cotton-free dry</td>
<td>hrs</td>
<td>3.0</td>
</tr>
<tr>
<td>Thru-dry</td>
<td>hrs</td>
<td>4.0</td>
</tr>
<tr>
<td>Adhesion</td>
<td>D 3359-A</td>
<td>5A</td>
</tr>
<tr>
<td>MEK double-rubs</td>
<td>D 4752</td>
<td>25</td>
</tr>
<tr>
<td>Impact resistance Direct/Reverse</td>
<td>D 2794</td>
<td>in.-lbs.</td>
</tr>
</tbody>
</table>
Distilled water immersion at 60 °C

D 870

8F

8F

Salt spray resistance

B-117

6F

6M

6 mm creep

7 mm creep

Prohesion resistance (Expose coated panels to salt spray of 0.35%wt ammonium sulfate and 0.05%wt sodium chloride at 35 °C for one hour and then dry at 40 °C for 1 hour.)

6F

6F

4 mm creep

4 mm creep

Storage

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

General Information

These are starting formulations and are not proven in the user’s particular application but are simply meant to demonstrate the efficacy of the products and to assist in the development of the user’s own formulation. It is the user’s responsibility to fully-test and qualify the formulation, along with the ingredients, methods, applications or equipment identified herein (“Information”), by the user’s knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any Information.

Safety, Storage & Handling

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

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them. Questions and requests for information on Hexion, Inc. ("Hexion") products should be directed to your Hexion sales representative, or the nearest Hexion sales office. Information and MSDSs on non-Hexion products should be obtained from the respective manufacturer.

Contact Information

For product prices, availability, or order placement, please contact customer service:

www.hexion.com/Contacts/

For literature and technical assistance, visit our website at www.hexion.com