Starting Formulation

SF 1036
Coating for Application to Wet Surfaces (Fresh & Salt Water)
EPON™ Resin 828 / EPIKURE™ Curing Agent 3125

Suggested Uses
• Recommended to arrest corrosion in splash-zone areas of bulkheads, pilings, bridge abutments, drilling rigs and other marine structures

Features
• Adheres to wet surfaces
• Cures while immersed in fresh or salt water; resists wave action during cure cycle
• Contains no Volatile Organic Compounds (VOC)

Formula | Material | Supplier | Pounds | Gallons
--- | --- | --- | --- | ---
Part A | Pre-mix the following Weston EGTPP | Hexion Performance Products | 49.7 | 5.1
Magnesium Oxide | Trace | Trace | Trace | Trace
Add the following with mixing EPON Resin 828 | Hexion | 546.3 | 56.3
Slowly add the following 971 Magnesium Silicate | Whittaker, Clarke & Daniels | 76.0 | 3.3
Silica 219 | Whittaker, Clarke & Daniels | 645.3 | 29.2
Medium Chrome Yellow 969LD | Cooksen Pigments | 46.3 | 1.0
Sodium Pyrophosphate, anhydrous | Cytec Industries | 114.0 | 5.1
Total Part A | 1,477.7 | 100.0

Part B | EPIKURE Curing Agent 3125 | Hexion | 537.0 | 66.2
Silica 219 | Harcros Pigments, Inc. | 568.0 | 25.8
971 Magnesium Silicate | 179.7 | 7.8
Superjet Carbon Black LB-1011 | Harcros Pigments, Inc. | 3.3 | 0.2
Total Part B | 1,288.0 | 100.0
Total Part A & B | 2,765.7 | 200.0

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To manufacture the EPON Resin component, first stabilize the Weston EGTPP by adding 1% weight magnesium oxide. Then, charge the EPON Resin 828 and the stabilized Weston EGTPP to a pony mixer and add the pigments slowly with constant agitation until a smooth paste is obtained.

To manufacture the curing agent component, charge the EPIKURE Curing Agent 3125 to a pony mixer and add the pigments slowly with constant agitation until a smooth paste is obtained. The epoxy resin component and the curing agent component should be packaged separately until they are ready to be used.

Typical Handling Properties

NOTE: For optimum performance, this formulation is combined in a ratio of 1.0 part by volume of the EPON Resin component to 2.0 parts by volume of the polyamide resin component. This also translates to 1.0 part by weight of the EPON Resin component to 1.04 parts by weight of the polyamide resin component.

Combine the curing agent component and the EPON Resin component in the ratio highlighted above. Mix until a uniform olive color is obtained. Because of the high viscosity of the components, a power-driven stirrer greatly facilitates the mixing operation. As noted in the Formulation Constants section, the combined system will provide a pot life of about 1.5 to 2.0 hours. Do not mix any more material than can be applied during that time frame.

This formulation, with a weight ratio of polyamide resin to epoxy resin of 1.18/1, is believed to be optimum for this type of application. The use of higher concentrations of polyamide resin curing agent will provide an increase in flexibility, but with a decrease in hardness of the coating. If the ratio of polyamide resin to epoxy resin exceeds 1.5/1, poor adhesion may result under immersion conditions. Handling properties may be altered to suit individual preferences by varying the type and/or amount of extender pigments.

The surface to be coated should be cleaned thoroughly. Where the purpose of the coating is to arrest corrosion in the splash-zone areas of marine structures, the surface should be cleaned over an area extending from the top of the splash-zone to a depth of one or two feet below the low-tide water level. Sandblasting is the recommended method of preparing the surface since it has been found that a clean (except for water) and structurally sound surface is required to obtain good adhesion. No difficulty has been encountered in sandblasting under water – the initial blast of air clears a path for the sand/air mixture.

The coating material may be applied by hand. This is most easily accomplished by wearing a skin diver’s wet suit, rubber gloves and a life jacket with a life line secured to the structure. An outfit of this type provides warmth, buoyancy, protection against cuts and scratches from barnacles, and overall safety. Best results are obtained if a heavy layer of the coating material is applied above the water line and held in place until it grips the underlying surface. The material should then be smeared uniformly up and down over the area to be protected – all edges should be feathered. To assure adequate coverage, the applicator should aim for a film thickness of approximately 1/8 to 1/4 inch. The coating is easily molded to this thickness if the rubber gloves are kept wet during the application procedure.

Although this formulation is designed specifically for use in fresh water, it may be used in salt water as well.
Typical Formulation

<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></td>
<td>1 : 1</td>
</tr>
<tr>
<td></td>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weight</td>
<td>1.15 : 1.0</td>
</tr>
<tr>
<td>Nonvolatile content by weight</td>
<td>%</td>
<td>100.0</td>
</tr>
<tr>
<td>Weight per gallon</td>
<td>lb/gal</td>
<td>13.7</td>
</tr>
<tr>
<td>Pigment : Binder Weight Ratio</td>
<td></td>
<td>1.44/1</td>
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<tr>
<td>Volatile Organic Compound (VOC)</td>
<td>lb/gal</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>g/L</td>
<td>0.0</td>
</tr>
<tr>
<td>Pot life</td>
<td>hrs</td>
<td>1.5-2.0</td>
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</tbody>
</table>

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.

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