Starting Formulation

SF 1032
Coal Tar Coating
EPON™ Resin 834 / EPIKURE™ Curing Agent 3223

Features
- Provides high film build (5-8 mils dry film thickness) per coat
- Low VOC of 195 grams/liter (1.62 pounds/gallon)
- Low moisture permeability
- Recommended for severely corrosive environments where black color is not objectionable
- Well-suited for fresh and salt water immersion, as well as for acidic exposures
- Excellent adhesion to properly cleaned steel and concrete
- Recommended for heated insulated piping after the pipe has been properly sandblasted

Formula

<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>Coal Tar Pitch, CP-250</td>
<td>Allied Signal, Inc.</td>
<td>367.5</td>
<td>36.2</td>
</tr>
<tr>
<td></td>
<td>Heat coal tar to about 120ºF, then add the following;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Xylene</td>
<td></td>
<td>38.7</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>Secondary butyl alcohol</td>
<td></td>
<td>64.9</td>
<td>9.7</td>
</tr>
<tr>
<td></td>
<td>When solution is homogeneous, then add</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EPON Resin 834-X-90</td>
<td>Hexion</td>
<td>273.6</td>
<td>28.8</td>
</tr>
</tbody>
</table>

Pigments
- Mstron™ CF5A
  - Cyprus Industrial Minerals Co.
  - 247.0 pounds / 10.6 gallons
- Cab-O-Sil™
  - Cabot Corp.
  - 10.4 pounds / 0.6 gallons
  - Disperse with high speed disperser to grind Hegman 4-6

Total Part A
- 1,002.1 pounds / 91.3 gallons

Part B
- EPIKURE 3223 Curing Agent
  - Hexion
  - 31.3 pounds / 4.0 gallons
- Secondary butyl alcohol
  - 31.4 pounds / 4.7 gallons

Total Part B
- 62.7 pounds / 8.7 gallons

Total Part A & B
- 1,064.8 pounds / 100.0 gallons
Mixing Instructions

<table>
<thead>
<tr>
<th></th>
<th>Pounds</th>
<th>Gallons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part A</td>
<td>1,002.1</td>
<td>91.3</td>
</tr>
<tr>
<td>Part B</td>
<td>62.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Part A + B</td>
<td>1,064.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

To manufacture the base component, heat the coal tar pitch to 120 °F; thin with xylene/SBA mixture and then add the EPON Resin 834-X-90. Disperse the pigments in this vehicle using a high shear mixer. Charge the ingredients of the curing agent component to a suitable separate container and mix thoroughly. Package the base component and curing agent component separately to be mixed just prior to application.

Typical Handling Properties

Slowly, and very carefully, add the curing agent component to the base component with good agitation. Make certain that no curing agent comes in contact with the applicator. Continue mixing until the curing agent is thoroughly dispersed. Allow the mixture to stand for 30 minutes before application. Do not mix more material than can be applied in a three to four hour period and do not mix in batches larger than five gallons.

When applied to steel and concrete surfaces, two coats of five to eight mils (dry film thickness) are recommended to yield a total dry film thickness of 10 to 15 mils. Over steel, improved resistance to undercutting may be obtained by applying an appropriate zinc-rich primer, under the EPON Resin/coal tar coating. When used as a masonry filler, the material should be applied over a small area by brush or spray, and quickly smoothed out by squeegee. Repeat the process until entire area to be filled has been so treated.

For application of this system, we recommend the use of a fresh-air-supplied hood and other personal protective equipment and clothing sufficient to protect the applicator.

In contrast to conventional coatings, which cure either solely or to some degree by solvent evaporation, this formulation cures by chemical reaction. As a result, the set-to-touch time is quite long-about 3 hours at 75 °F. However, under favorable application conditions (temperature greater than 60 °F), the coating becomes hard enough to handle after drying overnight, and develops full chemical and solvent resistance within one week.

Typical Formulation Properties

Table 1 / Formulation Properties

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonvolatile content by weight</td>
<td>%</td>
<td>84.8</td>
</tr>
<tr>
<td>Weight per gallon</td>
<td>lb/gal</td>
<td>10.7</td>
</tr>
<tr>
<td>Pigment : Binder Weight Ratio</td>
<td>28.5/71.5</td>
<td></td>
</tr>
<tr>
<td>Volatile Organic Compound (VOC)</td>
<td>lb/gal</td>
<td>1.62</td>
</tr>
<tr>
<td></td>
<td>g/L</td>
<td>195</td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td>Black</td>
</tr>
<tr>
<td>Viscosity of base component, 24 hours after manufacture</td>
<td>poise</td>
<td>50-60</td>
</tr>
<tr>
<td>Induction Time</td>
<td>Mn</td>
<td>30</td>
</tr>
<tr>
<td>Pot life</td>
<td>Hrs</td>
<td>3-4</td>
</tr>
</tbody>
</table>

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

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