**DESCRIPTION AND USES**

Rust-O-Zinc Inorganic Zinc Rich Primer is a two component, ethyl silicate-based, zinc-rich coating that provides cathodic corrosion resistance to properly prepared steel substrates. Rust-O-Zinc is designed as a prime coat for abrasive blast cleaned steel where maximum corrosion protection is needed. Rust-O-Zinc contains up to 86% zinc in the dried film.

MPI #19 Certified*

**FEATURES**

- High zinc loading – up to 86% in the dried film
- High heat resistance – up to 750°F (399°C) continuous
- Rapid cure. Dry to handle in 45 minutes at 60°F (16°C) and 50% relative humidity
- Low temperature cure down to 0°F (-18°C) on frost free surface
- Very good resistance to salt ing
- May be applied with standard airless or conventional spray equipment
- VOC compliant in certain areas

**PRODUCTS**

Inorganic Zinc Rich Primers are offered as both kits and individual components.

- **Kit (1 gallon)** 297077: includes both components (Base and Zinc Dust)
- **Kit (5 gallon)** 297078: includes both components (Base and Zinc Dust)
- **Components (1 gallon)**
  - 303976 – Base: 2 short-filled gallons (3 quarts in each gallon)
  - 303979 – Zinc Dust: 2 gallons (14.6 lbs. in each gallon)
- **Components (5 gallon)**
  - 303980 – Base: short-filled 5-gallon pail (3.75 gallons in pail)
  - 303993 – Zinc Dust: 5 gallon pail (73 lbs. in pail)

**PRODUCT APPLICATION**

**SURFACE PREPARATION**

ALL SURFACES: Remove all dirt, grease, oil, salt and chemical contaminants by washing the surface with Krud Kutter® Original Cleaner & Degreaser, commercial detergent or other suitable cleaner in accordance with SSPC-SP-1. Rinse thoroughly with fresh water and allow to fully dry. All surfaces must be dry at time of application.

Abrasive blast clean in accordance to SSPC-SP-6 Commercial Grade, with a 1-3 mil surface profile.

* Refer to the MPI website for the most current listing of MPI certified products.

**PRODUCT APPLICATION (cont.)**

For immersion service in vessels containing diesel fuel or oil with no water content, abrasive blast clean in accordance to SSPC-SP-10 Near White Grade, with a 1-3 mil surface profile.

**MIXING**

Power mix the base; then combine and power mix as follows. Sifting zinc through a screen will aid in the mixing process by breaking up or catching dry zinc lumps. Pour the zinc filler very slowly into the premixed base with continuous agitation. Mix until free of lumps. Pour the mixture through a 30 mesh screen.

**THINNING**

Material may be thinned up to 12% (15 oz.) per gallon with isopropyl alcohol; however this may cause the VOC level to exceed 500 g/l.

**APPLICATION**

For best performance, apply when the air and surface temperatures are between 32-100°F (0-38°C) and the surface temperature is at least 5°F (3°C) above the dew point. Rust-O-Zinc may be applied as low as 0°F (-18°C) on frost free surface.

**EQUIPMENT RECOMMENDATIONS**

The following spray equipment has been found suitable and is available from equipment manufacturer. Keep material under mild agitation during application. If spraying stops for more than 10 minutes, recirculate the material remaining in the spray line. Do not leave mixed primer in the hoses during work stoppages.

- **CONVENTIONAL SPRAY**: Use an agitated pressure pot equipped with dual regulators, 3/8” I.D. minimum material hose with a maximum length of 50 feet. Use a 0.070” I.D. fluid tip and appropriate air cap.
- **AIRLESS SPRAY**: Use a pump with a 30:1 ratio minimum. With a GPM (gallons per minute) output of 3.0. The material hose should measure ¾” I.D. with a tip size of 0.019-0.023”. The output pressure should range 1,500-2,000 psi using a 60 mesh filter. PTFE packings are recommended and available from the pump manufacturer.
- **BRUSH**: For touch-up of areas less than one square foot only. Use medium bristle brush and avoid re-brushing.

**VENTILATION**

When used as a tank lining or in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. In addition to ensuring proper ventilation, appropriate respirators must be used by all application personnel.
TECHNICAL DATA

RUST-O-ZINC INORGANIC ZINC RICH PRIMER

PRODUCT APPLICATION (cont.)

CLEAN-UP
Use isopropyl alcohol. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

RECOMMENDED TOPCOATS
Rust-O-Zinc Inorganic Zinc Rich Primer provides stand alone corrosion protection for exposures between pH 5-9. For environments outside of the pH limits or severe chemical exposures, a suitable topcoat is required. Do not topcoat with alkyds.

Polyurethane finish coat options:
3300 System Acrylic Aliphatic Urethane
9700 System 250 VOC Acrylic Polyester Urethane
9400 System High Gloss Polyester Urethane

These finish should not be applied directly to the Inorganic Zinc Rich Primer, so an intermediate coat of 9300 System or ROC Prime 100 is required.

The 9100 System DTM Epoxy Mastic or META Prime may also be used as an intermediate coat, however, they are high build coatings, so it is recommended the coating be applied using a mist coat/full coat technique in order to reduce the risk of solvent entrapment in the zinc.

9800 DTM Urethane Mastic
This is a high build polyurethane coating and it could be applied directly to the Zinc Rich Primer, however the coating must be applied using a mist coat/full coat technique in order to reduce the risk of solvent entrapment in the zinc.

Epoxy finish coat options:
9100 System DTM Epoxy Mastic
C9578 Coal Tar Epoxy
These finishes are high build coatings and can be applied directly to the Zinc Rich Primer, however, it is recommended the application of the coating be applied using a mist coat/full coat technique in order to reduce the risk of solvent entrapment in the zinc.

PERFORMANCE CHARACTERISTICS

SYSTEM: One coat of Rust-O-Zinc over abrasive blasted steel.

AASHTO M300 Bullet Hole Immersion
METHOD: Paragraph 4.6.9
RESULT: No blistering or rusting of coating after 650 hours immersion in 5% salt solution

SLIP CO-EFFICIENT
METHOD: ASTM A-325
RESULT: 0.68 meets requirements for Class B rating

SALT SPRAY (5%)
Rating 1-10, 10-best
METHOD: ASTM B-117, 43000 hrs
RESULT: 10 per ASTM D714 for blistering
RESULT: 10 per ASTM D1654 for corrosion
Moderate salting on the surface only

CYCLIC PROHESION
Rating 1-10, 10-best
METHOD: ASTM D5894, 1,008 hours, 3 cycles
RESULT: 10 per ASTM D714 for blistering
RESULT: 10 per ASTM D1654 for corrosion

PENCIL HARDNESS
METHOD: ASTM D 3363
RESULT: 2H
## TECHNICAL DATA

### RUST-O-ZINC INORGANIC ZINC RICH PRIMER

### PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th></th>
<th>Inorganic Zinc Rich Primer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resin Type</strong></td>
<td>Solvent-based Ethyl Silicate</td>
</tr>
<tr>
<td><strong>Pigment Type</strong></td>
<td>Metallic Zinc</td>
</tr>
<tr>
<td><strong>Solvents</strong></td>
<td>Ethanol, Isopropyl Alcohol</td>
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<tr>
<td><strong>Weight</strong></td>
<td></td>
</tr>
<tr>
<td>Per Gallon</td>
<td>Base – 8.9 lbs.</td>
</tr>
<tr>
<td>Per Liter</td>
<td>Base – 1.06 kg</td>
</tr>
<tr>
<td><strong>Solids</strong></td>
<td></td>
</tr>
<tr>
<td>By Weight</td>
<td>77-81% Base and Zinc Filler Combined</td>
</tr>
<tr>
<td>By Volume</td>
<td>62% Determined by ASTM D 2697</td>
</tr>
<tr>
<td><strong>% Zinc in Dry Film</strong></td>
<td>86%</td>
</tr>
<tr>
<td><strong>Volatile Organic Compounds</strong></td>
<td>480 g/l (4.0 lbs./gal.) as supplied</td>
</tr>
<tr>
<td><strong>Mixing Ratio</strong></td>
<td>3 Quarts Base and 14.6 lbs. Zinc Dust for 1-Gallon 3.75 Gallons Base and 73 lbs. Zinc Dust for 5-Gallons</td>
</tr>
<tr>
<td><strong>Recommended Dry Film Thickness (DFT) Per Coat</strong></td>
<td>3.0-4.0 mils (75-100µ) Do not exceed 6 mils (150µ)</td>
</tr>
<tr>
<td><strong>Wet Film to Achieve DFT (unthinned material)</strong></td>
<td>4.0-7.0 mils (100-175µ)</td>
</tr>
<tr>
<td><strong>Practical Coverage at Recommended DFT (assumes 15% material loss)</strong></td>
<td>300 sq.ft. @ 3 mils (75µ) DFT (7.4 m²/l) 1,000 sq.ft. @ 1 mil (25µ) DFT (24.5 m²/l)</td>
</tr>
<tr>
<td><strong>Pot Life at 75°F (24°C) and 50% Relative Humidity</strong></td>
<td>8 hours</td>
</tr>
<tr>
<td><strong>Dry Times at Recommended Film Thickness. Insufficient ventilation or low humidity (&lt;50%) will increase cure times.</strong></td>
<td></td>
</tr>
<tr>
<td>Surface Temp.</td>
<td>Handle</td>
</tr>
<tr>
<td>0°F (-18°C)</td>
<td>4 hours</td>
</tr>
<tr>
<td>40°F (4°C)</td>
<td>1 hour</td>
</tr>
<tr>
<td>60°F (16°C)</td>
<td>45 minutes</td>
</tr>
<tr>
<td>80°F (27°C)</td>
<td>45 minutes</td>
</tr>
<tr>
<td>100°F (38°C)</td>
<td>15 minutes</td>
</tr>
<tr>
<td><strong>Dry Heat Resistance</strong></td>
<td>Continuous 750°F (399°C)</td>
</tr>
<tr>
<td></td>
<td>Intermittent 800°F (427°C)</td>
</tr>
<tr>
<td><strong>Shelf Life</strong></td>
<td>Part A: 12 months at 75°F (24°C)</td>
</tr>
<tr>
<td></td>
<td>Part B: 24 months at 75°F (24°C)</td>
</tr>
<tr>
<td><strong>Safety Information</strong></td>
<td>For additional information, see SDS</td>
</tr>
</tbody>
</table>

Calculated values are shown and may vary slightly from the actual manufactured material.

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