



**Protective & Marine Coatings**  
PRODUCT DATA SHEET



# MACROPOXY<sup>®</sup> 646

FAST CURE EPOXY

Revised: March 31, 2020

## PRODUCT DESCRIPTION

**MACROPOXY 646** Fast Cure Epoxy is a high solids, high build, fast drying, polyamide epoxy designed to protect steel and concrete in industrial exposures. Ideal for maintenance painting and fabrication shop applications. The high solids content ensures adequate protection of sharp edges, corners, and welds. This product can be applied directly to marginally prepared steel surfaces.

## INTENDED USES

- Recommended for marine applications, refineries, offshore platforms, fabrication shops, chemical plants, tank exteriors, power plants, water treatment plants, and mining and minerals industry
- Mill White and Black are acceptable for immersion use for salt water and fresh water, not acceptable for potable water

## PRODUCT DATA

<p><b>Finish:</b> Semi-Gloss</p> <p><b>Colors:</b> Mill White, Black and a wide range of colors available through tinting</p> <p><b>Volume Solids:</b> 72% ± 2%, mixed, Mill White</p> <p><b>VOC (mixed):</b> Unreduced: &lt;250 g/L; 2.08 lb/gal Reduced 10%: &lt;300 g/L; 2.50 lb/gal</p> <p><b>Mix Ratio:</b> 1:1 by volume</p> <p><b>Typical Thickness:</b></p> <p style="text-align: center;"><b>Recommended Spreading Rate per coat:</b></p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">Minimum</th> <th style="text-align: center;">Maximum</th> </tr> </thead> <tbody> <tr> <td><b>Wet mils</b> (microns)</td> <td style="text-align: center;"><b>7.0</b> (175)</td> <td style="text-align: center;"><b>13.5</b> (338)</td> </tr> <tr> <td><b>Dry mils</b> (microns)</td> <td style="text-align: center;"><b>5.0*</b> (125)</td> <td style="text-align: center;"><b>10.0</b> (250)</td> </tr> <tr> <td><b>~Coverage sq ft/gal</b> (m<sup>2</sup>/L)</td> <td style="text-align: center;"><b>115</b> (2.9)</td> <td style="text-align: center;"><b>230</b> (5.8)</td> </tr> <tr> <td>Theoretical coverage <b>sq ft/gal</b> (m<sup>2</sup>/L) @ 1 mil / 25 microns dft</td> <td colspan="2" style="text-align: center;"><b>1152</b> (28.2)</td> </tr> </tbody> </table> <p>*May be applied at 3.0-10.0 mils (75-250 microns) dft as an intermediate in a multicoat system.</p> <p><i>NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.</i></p> <p><b>Shelf Life:</b> 36 months, unopened Store indoors at 40°F (4.5°C) to 110°F (43°C).</p> <p><b>Flash Point:</b> 91°F (33°C), TCC, mixed</p> <p><b>Reducer/Clean Up:</b> Reducer #15 or Reducer #58 (California) Reducer #111 or Oxsol 100</p> <p><b>Weight:</b> 12.9 ± 0.2 lb/gal ; 1.55 Kg/L, mixed, may vary by color</p>		Minimum	Maximum	<b>Wet mils</b> (microns)	<b>7.0</b> (175)	<b>13.5</b> (338)	<b>Dry mils</b> (microns)	<b>5.0*</b> (125)	<b>10.0</b> (250)	<b>~Coverage sq ft/gal</b> (m <sup>2</sup> /L)	<b>115</b> (2.9)	<b>230</b> (5.8)	Theoretical coverage <b>sq ft/gal</b> (m <sup>2</sup> /L) @ 1 mil / 25 microns dft	<b>1152</b> (28.2)		<p><b>Average Drying Times @ 7.0 mils (175 microns) wet:</b></p> <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">35°F (1.7°C)</th> <th style="text-align: center;">77°F (25°C)</th> <th style="text-align: center;">100°F (38°C)</th> </tr> <tr> <th></th> <th style="text-align: center;">50% RH</th> <th style="text-align: center;">50% RH</th> <th style="text-align: center;">50% RH</th> </tr> </thead> <tbody> <tr> <td><b>Touch:</b></td> <td style="text-align: center;">4-5 hours</td> <td style="text-align: center;">2 hours</td> <td style="text-align: center;">1.5 hours</td> </tr> <tr> <td><b>Handle:</b></td> <td style="text-align: center;">48 hours</td> <td style="text-align: center;">8 hours</td> <td style="text-align: center;">4.5 hours</td> </tr> <tr> <td><b>Recoat:</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;"><b>minimum:</b></td> <td style="text-align: center;">48 hours</td> <td style="text-align: center;">8 hours</td> <td style="text-align: center;">4.5 hours</td> </tr> <tr> <td style="padding-left: 20px;"><b>maximum:</b></td> <td style="text-align: center;">1 year</td> <td style="text-align: center;">1 year</td> <td style="text-align: center;">1 year</td> </tr> <tr> <td><b>Cure to service:</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;"><b>atmospheric:</b></td> <td style="text-align: center;">10 days</td> <td style="text-align: center;">7 days</td> <td style="text-align: center;">4 days</td> </tr> <tr> <td style="padding-left: 20px;"><b>immersion:</b></td> <td style="text-align: center;">14 days</td> <td style="text-align: center;">7 days</td> <td style="text-align: center;">4 days</td> </tr> <tr> <td><b>Average Drying Times as intermediate @ 5.0 mils (125 microns) wet:</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Touch:</b></td> <td style="text-align: center;">3 hours</td> <td style="text-align: center;">1 hour</td> <td style="text-align: center;">1 hour</td> </tr> <tr> <td><b>Handle:</b></td> <td style="text-align: center;">48 hours</td> <td style="text-align: center;">4 hours</td> <td style="text-align: center;">2 hours</td> </tr> <tr> <td><b>Recoat:</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="padding-left: 20px;"><b>minimum:</b></td> <td style="text-align: center;">16 hours</td> <td style="text-align: center;">4 hours</td> <td style="text-align: center;">2 hours</td> </tr> <tr> <td style="padding-left: 20px;"><b>maximum:</b></td> <td style="text-align: center;">1 year</td> <td style="text-align: center;">1 year</td> <td style="text-align: center;">1 year</td> </tr> </tbody> </table> <p><i>If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be 40°F (4.5°C) minimum.</i></p> <p><b>Pot Life:</b> 10 hours 4 hours 2 hours</p> <p><b>Sweat-in-time:</b> 30 minutes 30 minutes 15 minutes</p>		35°F (1.7°C)	77°F (25°C)	100°F (38°C)		50% RH	50% RH	50% RH	<b>Touch:</b>	4-5 hours	2 hours	1.5 hours	<b>Handle:</b>	48 hours	8 hours	4.5 hours	<b>Recoat:</b>				<b>minimum:</b>	48 hours	8 hours	4.5 hours	<b>maximum:</b>	1 year	1 year	1 year	<b>Cure to service:</b>				<b>atmospheric:</b>	10 days	7 days	4 days	<b>immersion:</b>	14 days	7 days	4 days	<b>Average Drying Times as intermediate @ 5.0 mils (125 microns) wet:</b>				<b>Touch:</b>	3 hours	1 hour	1 hour	<b>Handle:</b>	48 hours	4 hours	2 hours	<b>Recoat:</b>				<b>minimum:</b>	16 hours	4 hours	2 hours	<b>maximum:</b>	1 year	1 year	1 year
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## SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

### Minimum recommended surface preparation:

- Iron & Steel:** Atmospheric: SSPC-SP2/3/ ISO8501-1:2007 St 2 or SSPC-SP WJ-3 / NACE WJ-3L  
Immersion: SSPC-SP10 / NACE 2/ ISO8501-1:2007 Sa 2.5, 2-3 mil (50-75 micron) profile or SSPC-SP WJ-2/NACE WJ-2L
- Stainless Steel:** Atmospheric: SSPC-SP16, 1 mil (25 micron) profile
- Aluminum & Galvanizing:** SSPC-SP1. If surface has not be weathered for more than 6 months, follow SSPC-SP1 then SSPC-SP16. For fire proofing projects, consult a Sherwin-Williams representative for surface preparation requirements.
- Concrete & Masonry:** Atmospheric: SSPC-SP13/NACE 6, or ICRI No. 310.2R CSP 1-3  
Immersion: SSPC-SP13/NACE 6-4.3.1



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<p><b>Airless Spray*</b></p> <p>Pump.....30:1            Pressure.....2800-3000 psi (193-206 bar)            Hose.....1/4" ID (6.3 mm)            Tip......017"-.023" (0.43-0.58 mm)            Filter.....60 mesh            Reduction.....As needed up to 10% by volume</p> <p><b>Conventional Spray*</b></p> <p>Gun.....DeVilbiss MBC-510            Fluid Tip.....E            Air Nozzle.....704            Atomization Pressure.....60-65 psi (4.1-4.5 bar)            Fluid Pressure.....10-20 psi (0.7-1.4 bar)</p> <p><b>Brush*</b></p> <p>Brush.....Nylon/Polyester or Natural Bristle</p> <p><b>Roller*</b></p> <p>Cover.....3/8" woven with solvent resistant core</p> <p><b>Plural Component Spray</b> ..Acceptable</p> <p>*Reduction.....As needed up to 10% by volume</p> <p>If specific application equipment is not listed above, equivalent equipment may be substituted.</p>	<p><b>Temperature:</b></p> <p>Air: 35°F (1.7°C) minimum, 120°F (49°C) maximum            Surface*: 35°F (1.7°C) minimum, 250°F (120°C) maximum            Material: 40°F (4.5°C) minimum            At least 5°F (2.8°C) above dew point</p> <p>Relative humidity: 85% maximum</p> <p>*When spraying a surface above 120°F (49°C), reduce material 10% with Reducer #100, R7K100. Spray apply only. Product will produce an orange peel appearance when applied at elevated temperatures.</p>																																																																					
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	<ul style="list-style-type: none"> <li>Suitable for use in USDA inspected facilities</li> <li>Acceptable for use in Canadian Food Processing facilities, categories: D1, D2, D3 (Confirm acceptance of specific part numbers/rexes with your SW Sales Representative)</li> <li>Conforms to AWWA D102 OCS #5</li> <li>Conforms to MPI # 108</li> <li>This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*</li> <li>Meets Class A requirements for Slip Coefficient, 0.36 @ 6 mils / 150 microns dft (Mill White only)</li> </ul> <p>* Nuclear qualifications are NRC license specific to the facility</p>																																																																					
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<p>The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.</p>	<p>Refer to the SDS sheet before use.            Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.</p>																																																																					
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	<p>The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Sheet.</p>																																																																					