

Selection & Specification Data

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| Generic Type | Cycloaliphatic Amine Epoxy |
| Description | High solids, high-build potable water coating widely used for lining interior steel and concrete tanks, valves and pipe. Formulated for application at conventional builds (4.0-6.0 mils per coat) as well as high builds (10.0 mils per coat). |
| Features | <ul style="list-style-type: none"> ▪ Excellent film build and edge protection ▪ VOC compliant to current AIM regulations ▪ Meets or exceeds all requirements of: <ul style="list-style-type: none"> •ANSI/NSF Std. 61 for potable water tanks of 6000 gallons or larger •AWWA D102 Inside System 1 and 2 •AWWA C210 for use on interior of steel water pipe •Complies with FDA 21CFR 175.300 criteria for food contact |
| Color | White (S800); Gray (0794); Blue (4169); Other colors may be available but are limited to various approvals. |
| Finish | Gloss |
| Primers | Self-priming |
| Topcoats | Acrylics, Alkyds, Epoxies, Polyurethanes for non-immersion applications. |
| Dry Film Thickness | 4.0-10.0 mils (100-250 microns) per coat. Do not exceed 17 mils (425 microns) per system for potable water applications. |
| Solids Content | By Volume: 75% ± 2% |
| Theoretical Coverage Rate | 1203 mil ft ² (30.0 m ² /l at 25 microns) 241 ft ² at 5 mils (6.0 m ² /l at 25 microns) Allow for loss in mixing and application. |
| VOC Values | As supplied: 1.8 lbs./gal (214 g/l) Thinned:* 8 oz/gal w/ #2 2.1 lbs./gal (249 g/l) 16 oz/gal w/ #33: 2.4 lbs./gal (285 g/l) These are nominal values and may vary with slightly with color. *Maximum thinning for 250 g/l restricted areas is 7 oz/gal for Thinner #33. Use Thinner #76 up to 8 oz/gal where non-photochemically reactive solvent is required. |
| Dry Temp. Resistance | Continuous: 250°F (121°C) Non-Continuous: 300°F (149°C) Discoloration and loss of gloss is observed above 200°F (93°C). |
| Wet Temp. Resistance | Immersion temperature resistance depends upon exposure. Consult Carboline Technical Service for specific information. It is recommended that metal tanks operating above 140°F (60°C) be insulated. |
| Limitations | Epoxies lose gloss, discolor and eventually chalk in sunlight exposure. |

Substrates & Surface Preparation

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| General | Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating. | |
| Steel | <u>Immersion:</u> | SSPC-SP10 |
| | <u>Non-Immersion:</u> | SSPC-SP6 |
| | <u>Surface Profile:</u> | 1.5-3.0 mils (38-75 microns) |
| Concrete | <u>Immersion:</u> | Concrete must be cured 28 days at 75°F (24°C) and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing. |

Performance Data

| Test Method | System | Results | Report # |
|----------------------------|-----------------------------|---------|----------|
| ASTM D3363 Pencil Hardness | Blasted Steel 2 cts. 891 | 3H | 03457 |
| ANSI/NSF Std. 61 | Blasted Steel 2 cts. 891 | Pass | 09434 |
| AWWA C210 Specification | Blasted Steel 2 cts. 891 | Pass | 03457 |

Test reports and additional data available upon written request.

Application Equipment

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results. **General Guidelines:**

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| Spray Application (General) | This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco. |
| Conventional Spray | Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap. |
| Airless Spray | Pump Ratio: 30:1 (min.)* GPM Output: 3.0 (min.) Material Hose: 3/8" I.D. (min.) Tip Size: .017-.021" Output PSI: 2100-2300 Filter Size: 60 mesh *Teflon packings are recommended and available from the pump manufacturer. Use 45:1 pump ratio for elevated applications and 1/2" I.D. for hose lengths greater than 60'. |
| Brush & Roller (General) | Not recommended for tank lining applications except when striping welds. Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F (24°C). |
| Brush | Use a medium bristle brush. |
| Roller | Use a short-nap synthetic roller cover with phenolic core. |

Carboguard® 891

Mixing & Thinning

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| Mixing | Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS. |
| Ratio | 1:1 Ratio (A to B) |
| Thinning* | Spray: Up to 8 oz/gal (6%) w/#2 (NSF Std.61 approved) Brush: Up to 16 oz/gal (13%) w/#33 (Non-NSF Std.61) Roller: Up to 16 oz/gal (13%) w/#33 (Non-NSF Std.61) Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied. *See VOC values for thinning limits. |
| Pot Life | Material begins to lose film build in 90 minutes at 75°F (24°C), and less at higher temperatures. |

Cleanup & Safety

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| Cleanup | Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations. |
| Safety | Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas. |
| 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. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator. |
| Caution | This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes. |

Application Conditions

| Condition | Material | Surface | Ambient | Humidity |
|-----------|------------------------|------------------------|------------------------|----------|
| Normal | 60°-85°F (16°-29°C) | 60°-85°F (16°-29°C) | 60°-90°F (16°-32°C) | 0-80% |
| Minimum | 50°F (10°C) | 50°F (10°C) | 50°F (10°C) | 0% |
| Maximum | 90°F (32°C) | 125°F (52°C) | 110°F (43°C) | 80% |

This product simply requires the substrate temperature to be above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Special application techniques may be required above or below normal application conditions.

Curing Schedule

| Surface Temp. & 50% Relative Humidity | Dry to Recoat | Dry to Topcoat w/ Other Finishes | Final Cure for Immersion Service | Maximum Recoat Time |
|---------------------------------------|---------------|----------------------------------|----------------------------------|---------------------|
| 50°F (10°C) | 12 Hours | 24 Hours | N/R* | 60 Days |
| 60°F (16°C) | 8 Hours | 16 Hours | 10 Days | 30 Days |
| 75°F (24°C) | 4 Hours | 8 Hours | 5 Days | 30 Days |
| 90°F (32°C) | 2 Hours | 4 Hours | 3 Days | 15 Days |

These times are based on a 4.0-6.0 mil (100-150 micron) dry film thickness. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure, can cause discoloration and may result in a surface haze. Any haze or blush must be removed by water washing before recoating. If the maximum recoat time is exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. For force curing, contact Carboline Technical Service for specific requirements. *Note: Final cure temperatures below 60°F (16°C) are not recommended for tank linings.

Packaging, Handling & Storage

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| Shipping Weight (Approximate) | <u>2 Gallon Kit</u> 29 lbs (13 kg) | <u>10 Gallon Kit</u> 145 lbs (66 kg) |
| Flash Point (Setflash) | Part A: 75°F (24°C) Part B: 81°F (27°C) | |
| Storage (General) | Store Indoors. | |
| Storage Temperature & Humidity | 40° -110°F (4°-43°C) 0-100% Relative Humidity | |
| Shelf Life | Part A: Min. 36 months at 75°F (24°C) Part B: 6 months at 75°F (24°C) | |
| | *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers. | |



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