

Selection & Specification Data

Generic Type	Epoxy MIO(micaceous iron oxide) Parts A and B mixed prior to application.
Description	High solids corrosion resistant primer and intermediate. Used either as a primer or an intermediate coat over steel and inorganic zinc primers. Can be top coated with a broad variety of high performance finish coats.
Features	<ul style="list-style-type: none"> • Excellent corrosion protection • Excellent film build and edge protection • Used as a primer or an intermediate coating • Good abrasion resistance • VOC compliant to current AIM regulations
Color	Gray
Finish	Eggshell
Primers	Self-priming. May be applied over organic and inorganic zinc rich primers. A mist coat may be required to minimize bubbling over zinc rich primers.
Topcoats	Acrylics, Alkyds, Epoxies, Polyurethanes
Dry Film Thickness	3.0 mils (75 microns) for mild environments and as an intermediate coat over inorganic zincs. 4.0-6.0 mils (100-150 microns) for more severe environments. Do not exceed 10.0 mils (250 microns) in a single coat. Excessive film thickness over inorganic zincs may increase damage during shipping or erection.
Solids Content	By Volume: 80% ± 2
Theoretical Coverage Rate	1302 mil ft ² (32.0 m ² /l at 25 microns) 431 ft ² at 3 mils (10.6 m ² /l at 75 microns) Allow for loss in mixing and application
VOC Values	As supplied: 1.71 lbs/gal (205 g/l) Thinned:* 16 oz/gal w/ #2: 2.3 lbs/gal (274 g/l) 32 oz/gal w/ #33: 2.8 lbs/gal (334 g/l) These are nominal values and may vary slightly with color.
Dry Temp. Resistance	Continuous: 200°F (93°C) Non-Continuous: 250°F (121°C) Discoloration and loss of gloss is observed above 200°F (93°C).
Limitations	Not recommended for immersion service

Substrates & Surface Preparation

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	SSPC-SP6 with a 1.0-2.0 mil (25-50 micron) surface profile.
Galvanized Steel	Prime with specific Carboline primers as recommended by your Carboline Sales Representative. Refer to the specific primer's Product Data Sheet for substrate preparation requirements.
Concrete	Concrete must be cured 28 days at 75 °F (24°C) and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D42582 Surface Cleaning of Concrete an ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing

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:

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.
Brush & Roller (General)	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.

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Carboguard 893 MIO

Mixing & Thinning

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 16 oz/gal (12%) w/ #2
Brush: Up to 32 oz/gal (25%) w/ #33
Roller: Up to 32 oz/gal (25%) w/ #33
Mist coating: Thin up to 32 oz/gal. with Thinner #2 or #33 in VOC restricted (2.8lb/gal) areas. May thin up to 48 oz/gal. where VOC restricted levels are at 3.5 lb/gal. for mist coat only. Use of thinner 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.

Carboline Thinner #236E may also be used to thin this product to minimize HAP and VOC emissions. Consult Carboline Technical Service for guidance.

Pot Life 4 Hours at 75°F (24°C) Pot life ends when coating loses body and begins to sag. Pot life times will be less at higher temperatures. Thinning rates above 16 oz/gal will shorten the working time to 2 hours.

Cleanup & Safety

Cleanup Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.

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Ventilation When used in enclosed areas and product is thinned, the rough 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 supplied air respirator.

Cleanup & Safety Cont.

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°-24°C)	60°-90°F (16°-92°C)	0-80%
Minimum	50°F (10°C)	50°F (10°C)	50°F (10°C)	0%
Maximum	90°F (32°C)	135°F (57°C)	110°F (43°C)	90%

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 Touch	Dry to Handle	Dry to Topcoat
50°F (10°C)	5 Hours	16 Hours	24 Hours
60°F (16°C)	4 Hours	12 Hours	16 Hours
75°F (27°C)	3 Hours	6 Hours	8 Hours
90°F (32°C)	2 Hours	3 Hours	4 Hours

Surface Temp. & 50% Relative Humidity	Maximum Recoat Time w/ Epoxies	Maximum Recoat Time w/ Polyurethanes	Maximum Recoat Time w/ Acrylics
50°F (10°C)	30 Days	90 Days	14 Days
75°F (24°C)	30 Days	90 Days	14 Days
90°F (32°C)	15 Days	30 Days	14 Days

These times are based on a 4.0 mil (100 micron) dry film thickness. Higher film thickness, in sufficient 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. During high humidity conditions, it is recommended that the application be done while temperatures are increasing. If the maximum recoat time is exceeded, the surface must be abraded by sweep blasting or sanding before the application of additional coats.

Packaging, Handling & Storage

Shipping Weight (Approximate) 2 Gallon Kit 35 lbs (16 kg) 10 Gallon Kit 150 lbs (68 kg)

Flash Point (Setflash) Carboguard 893 MIO Part A: 75°F (23°C)
Carboguard 893 MIO Part B: 59°F (15°C)

Storage Temperature & Humidity 40° - 110°F (4°-43°C) Store indoors. 0-90% Relative Humidity

Shelf Life Part A: Min. 36 months at 75°F (24°C)
Part B: Min. 24 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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