product data

carboline®

Carboguard®890 EF

Selection & Specification Data

Generic Type
Cycloaliphatic Amine Epoxy

Description
High solids, eggshell – Direct to Metal (DTM) coating used as a primer and finish in non-immersion applications where corrosion resistance and exterior weathering are some of the primary considerations.

Features
- Very good abrasion resistance
- Excellent film build and edge protection
- VOC compliant to current AIM regulations
- Commonly used as exterior tank white in petrochemical applications.

Color
Off White (2830); Gray (C703); White (S800)

Finish
Eggshell

Primers
Self-priming. May be applied over inorganic zinc primers and other tightly adhering coatings. A mist coat may be required to minimize bubbling over inorganic zinc primers. Do not apply over latex coatings.

Topcoats
Acrylics, Polyurethanes, Epoxies

Dry Film Thickness
4.0-6.0 mils (100-150 microns) per coat
5.0-7.0 mils (125-175 microns) for more severe environments. Do not exceed 10 mils (250 microns) per coat.

Solids Content
By Volume: 75% ± 2%

Theoretical Coverage Rate
1203 mil ft^2 (30.0 m^2/l at 25 microns)
Allow for loss in mixing and application

VOC Values
As supplied: 1.8 lbs/gal (210 g/l)
Thinned:
13 oz/gal w/ #10: 2.3 lbs/gal (275 g/l)
16 oz/gal w/ #33: 2.4 lbs/gal (289 g/l)
These are nominal values and may vary slightly with color.

Dry Temp. Resistance
Continuous: 250°F (121°C)
Non-Continuous: 300°F (149°C)
Slight discoloration and loss of gloss is observed above 200°F (93°C).

Limitations
- Epoxies lose gloss, discolor and eventually chalk in sunlight exposure.

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 1.5-3.0 mils (38-75 micron) surface profile.

Galvanized Steel
SSPC-SP1 and prime with specific Carboline primers as recommended.

Concrete
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.

Previously Painted Surfaces
Lightly sand or abrade to roughen surface and degloss the surface. Existing paint must attain a minimum 3B rating in accordance with ASTM D3359 “X-Scribe” adhesion test.

September 2006 replaces December 2002

0984

Carboguard® 890 EF

Application Equipment

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.

Mixing & Thinning

Mixing Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

Ratio Part A: Carboguard 890 EF Part A
1:1 Ratio (A to B) Part B: Carboguard 893 Part B

Thinning Spray: Up to 13 oz/gal (10%) w/ #10
May thin using Thinner #33 up to 16 oz/gal (13%) for brush & roll applications. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Pot Life 3 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.

Cleanup & Safety

Cleanup Use #2 Thinner 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 in enclosed areas and product is thinned, 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 supplied air 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)	135°F (57°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	Maximum Recoat Time (Epoxies)	Maximum Recoat Time (Poly-urethanes)
50°F (10°C)	12 Hours	24 Hours	30 Days	90 Days
60°F (16°C)	8 Hours	16 Hours	30 Days	90 Days
75°F (24°C)	4 Hours	8 Hours	30 Days	90 Days
90°F (32°C)	2 Hours	4 Hours	30 Days	60 Days

These times are based on a 4.0-7.0 mil (100-175 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. 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 before the application of additional coats.

Packaging, Handling & Storage

Shipping Weight (Approximate) 2 Gallon Kit: 29 lbs (13 kg); 10 Gallon Kit: 145 lbs (66 kg)

Flash Point (Setaflash) Carboguard 890 EF Part A: 84°F (29°C)
Carboguard 893 Part B: 57°F (14°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: 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.**

carboline®
350 Hanley Industrial Court, St. Louis, MO 63144-1599
314/644-1000 314/644-4617 (fax) www.carboline.com
An RPM Company

September 2006 replaces December 2002