Product Data

Carboguard 890 & 890 LT

(formerly Carboline 890 & 890LT)

Selection & Specification Data

Generic Type
Cicloaliphatic Amine Epoxy

Description
Highly chemical resistant epoxy mastic coating with exceptionally versatile uses in all industrial markets.
Self-priming and suitable for application over most existing coatings, and tightly adherent to rust.
Carboguard 890 and the low temperature version (890LT), both serve as stand-alone systems for a variety of chemical environments. Carboguard 890 is also designed for various immersion conditions.

Features
- Excellent chemical resistance
- Surface Tolerant characteristics
- Conventional and low-temperature version
- Self-priming and primer/finish capabilities
- Very good abrasion resistance
- VOC compliant to current AIM regulation

Color
Ral Color Chart, is standard, other colors may be required a special order.

Finish
Gloss

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, Epoxy, Polyurethanes

Dry Film Thickness
100-150 µ (4.0-6.0 mils) per coat
150-200 µ (6.0-8.0 mils) over light rust and for uniform gloss over inorganic zincs.
Don't exceed 250µ (10 mils) in a single coat. Excessive film thickness over inorganic zincs may increase damage during shipping or erection.

Solids Content
By Volume: Carboguard 890 75% ± 2%
Carboguard 890 LT 80%± 2%

Theoretical Coverage Rate
890 : 30 m^2/l at 25 microns (1203 mil ft^2)
890 LT: 31 m^2/l at 25 microns (1283 mil ft^2)
Allow for loss in mixing and application

VOC Values
As supplied: 214 g/l (1.78 lbs./gal)
180 g/l (1.51 lbs./gal)
Thinned:

890	10% BV Th# 2:	271 g/l
890 LT	10% BV Th# 2:	241 g/l
890	12% BV Th#33:	285 g/l
890 LT	12% BV Th#33:	258 g/l

These are nominal values and may vary slightly with color.

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

Limitations
- Epoxies lose gloss, discolor and eventually chalk in sunlight exposure. Discolation is more pronounced with 890 LT
- Do not use 890 LT 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
Immersion: SSPC-SP 10 / ISO 8501-1 SA 2.5
Non immersion: SSPC-SP 6 / ISO 8501-1 SA 2
Surface profile: 38-75µ (1.5-3 mils)
SSPC-SP2 or SP3 (ISO 8501-1 ST3-ST2) are suitable cleaning methods for mild environments.

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

Concrete
Concrete must be cured 28 days at 24°C (75°F) and RH 50% or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing. Prime with Carboguard 1340

CMU
Mortar joints should be thoroughly cured for a minimum of 15 days at 24°C (75°F) and RH 50% or equivalent. Prime with Carbocrylic 120 Carboguard 1340

Drywall & Plaster
Joint compound and plaster should be fully cured prior to coating application. Prime with Carbocrylic 120 Carboguard 1340

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

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Application Equipment

Spray Application (General) This 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, De Vilbiss 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 coat 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 24°C (75°F)

Brush Use a medium bristle brush

Roller Use a short nap synthetic roller cover with phenolic core

Test reports and additional data available upon written request.

Mixing & Thinning

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

Ratio 890 and 890 LT 1:1 Ratio by volume

Thinning Spray : up to 10% by volume with Th.#2
Brush : up to 12% by volume with Th.#33
Roller : up to 12% by volume with Th.#33
Thinner#33 can be used for spray in hot/windy conditions. Use of thinners other than those supplied or recommended by Apsa-Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Pot Life 890 : 3 Hours at 24°C (75°F)
890 LT : 2 Hours at 21°C (75°F)
Pot-life end 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 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 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

Application Conditions

Carboguard 890

Condition	Material	Surface	Ambient	Humidity
Normal	16-29°C	16-29°C	16-32°C	0-80%
Minimum	10°C	10°C	10°C	0%
Maximum	32°C	52°C	43°C	80%

Carboguard 890 LT

Condition	Material	Surface	Ambient	Humidity
Normal	16-29°C	16-29°C	16-32°C	10-80%
Minimum	4°C	2°C	2°C	0%
Maximum	32°C	52°C	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.

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Curing Schedule

Carboguard 890 (based on 100-200µ DFT)

Surface Temp. & 50% Relative Humidity	Dry to Recoat	Dry to Topcoat w/ Other Finishes	Final Cure	Cure for Immersion
10°C	12 Hours	24 Hours	3 Days	N/R
16°C	8 Hours	16 Hours	3 Days	7 Days
24°C	4 Hours	8 Hours	3 Days	5 Days
32°C	2 Hours	4 Hours	16 hours	5 Days

Carboguard 890 LT (based on 125 µ DFT)

Surface Temp. & 50% Relative Humidity	Dry to Touch	Dry to handle	Dry to Recoat & Topcoat w/ Others	Final Cure
2°C	5.0 Hours	18.0 Hours	20 Hours	7 Days
4°C	4.5 Hours	15.5 Hours	16 Hours	5 Days
10°C	3.5 Hours	6.5 Hours	12 Hours	3 Days
16°C	2.0 Hours	5.0 Hours	8 Hours	2 Days
24°C	1.5 Hours	2.0 Hours	4 Hours	24 Hours
32°C	1.0 Hours	1.5 Hours	2 Hours	16 Hours

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. **Maximum recoat/topcoat times are 30 days for epoxies and 90 days for polyurethanes at 75°F (24°C)**. If the maximum recoat times have been exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. 890 LT applied below 50°F (10°C) may temporarily soften as temperatures rise to 60°F (16°C). This is a normal condition and will not effect performance.

Packaging, Handling & Storage

Kit Standard	**Part A: 10 liters** **Part B: 10 liters**
Flash Point (Setaflash)	32°C (89°F) for Part A; 890 & 890 LT 23°C (73°F) for Part B; 890 & 890 LT
Storage Temperature & Humidity	4° - 43°C (40°-110°F) Store indoors. 0-100% Relative Humidity
Shelf Life	36 months at 24°C (75° F)

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