

SELECTION & SPECIFICATION DATA

Generic Type	Cross-linked epoxy.
Description	A self-priming, high solids, high build epoxy for use in areas requiring formula compliance for direct and indirect contact with food. May be used as a two or three coat system for lining tanks and other equipment for storage of liquid sugar cargos.
Features	<ul style="list-style-type: none"> • Meets current VOC (Volatile Organic Content) regulations. • Complies with FDA 21CFR 175.300 for food contact. • Chemically acceptable for incidental food contact surfaces in federally inspected meat and poultry facilities.
Color	Available in White (S800); Staley Gray (0794); Blue (4169) and Gray (2758). Other colors may be available but are limited to various approvals
Finish	High Gloss (Epoxies lose gloss, discolor and eventually chalk in sunlight exposure)
Primer	Self-priming
Dry Film Thickness	102 - 203 microns (4 - 8 mils) per coat Don't exceed 10 mils (250 microns) in a single coat. Excessive film thickness over inorganic zincs may increase damage during shipping or erection.
Solids Content	By Volume 75% +/- 2%
Theoretical Coverage Rate	29.5 m ² /l at 25 microns (1203 ft ² /gal at 1.0 mils) 7.4 m ² /l at 100 microns (301 ft ² /gal at 4.0 mils) 3.7 m ² /l at 200 microns (150 ft ² /gal at 8.0 mils) Allow for loss in mixing and application.
VOC Values	As Supplied : 1.78 lbs./gal 214 g/l Thinner 2 : 8 oz/gal 2.08 lbs/gal 249 g/l
Limitations	Not recommended for strong acid or solvent exposures, or immersion service other than recommended.

SUBSTRATES & SURFACE PREPARATION

General	Remove all oil or grease from the surface to be coated with Thinner #2 or Carboline Surface Cleaner #3 (refer to Surface Cleaner #3 instructions) in accordance with SSPC-SP1.
Steel	<p>Immersion: Abrasive blast to a near white metal finish in accordance with SSPC-SP10, and obtain a 2.0 – 3.0 mil (50-75 micron) blast profile.</p> <p>Non-Immersion: Abrasive blast to a Commercial Grade Finish in accordance with SSPC-SP6, and obtain a 2.0-3.0 mil (50-75 micron) blast profile.</p>
Concrete or CMU	Concrete must be cured at least 28 days at 70°F (21°C) and 50% RH, or equivalent time. Remove fins and other protrusions by stoning, sanding, or grinding. Abrasive blast to open all surface voids and remove all forms of oil, incompatible curing agents, hardeners, laitance, other foreign matter and produce a surface texture similar to that of a medium grit sandpaper. Voids in the concrete may require surfacing. Blow or vacuum off sand and dust.

Carboguard 891 R

PRODUCT DATA SHEET



MIXING & THINNING

Mixing | Power mix each component separately, then combine and power mix in the following proportions.

Thinning | May be thinned up to 8 oz/gal (6%) per gallon with Thinner 2 for spray application, or up to 16 oz/gal (13%) per gallon with Thinner 33 for brush or roller applications. Use of thinners other than those supplied or approved by Carboline may adversely affect product performance and will void product warranty, whether express or implied.

Ratio | 1:1

Pot Life | Material begins to lose film build in two hours at 75°F (24°C) and less at higher temperatures.

APPLICATION EQUIPMENT GUIDELINES

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.

Spray Application (General) | This is a high solids coating and may require slight 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 (minimum)
GPM Output: 3.0 (minimum)
Material Hose: 3/8" I.D. (minimum)
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) | Brushing and rolling is not recommended for tank lining applications. Brush stripping of welds is an acceptable practice. Use medium bristle brush and avoid excessive rebrushing. Two coats may be required to obtain desired appearance, hiding and recommended dry film thickness. For best results, tie-in within 10 minutes at 75°F (24°C).

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	10°C (50°F)	10°C (50°F)	10°C (50°F)	0%
Maximum	32°C (90°F)	52°C (125°F)	43°C (110°F)	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.	Final Cure Immersion	Maximum Recoat Time	Between Coats	Recoating with itself
10°C (50°F)	NR	60 Days	24 Hours	12 Hours
16°C (60°F)	10 Days	NR	16 Hours	8 Hours
24°C (75°F)	5 Days	30 Days	8 Hours	4 Hours
32°C (90°F)	3 Days	15 Days	4 Hours	2 Hours

*Final cure temperatures below 60°F (16°C) are not recommended for tank linings. These times are based on a 4-8 mil (100-200 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. **Maximum recoat/topcoat times are 30 days for epoxies.** 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.

Force Curing: Force curing is recommended for all tank linings especially for storage of food grade products. The following schedule may be used to force cure the coating system after the final coat is applied. Elevate temperature no more than 30°F (16°C) every 30 minutes.

Surface temperature for Final Cure for Immersion Service 75° F (24°C) 4 hours followed by 225°F (66°C) 4 hours Final cure requirement varies depending upon exposure. Refer to the Carboline Tank Lining Guide for additional Force Curing and Safety information.

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.

PACKAGING, HANDLING & STORAGE

Shelf Life | Part A: Min. 24 Months at 75°F (24°C)
Part B: Min. 9 Months at 75°F (24°C)
*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.

Shipping Weight (Approximate) | 2 Gallon Kit - 29 lbs. (13 kg)
10 Gallon Kit - 145 lbs, (66 kg)

Storage Temperature & Humidity | 40°-110°F (4°-43°C) Store indoors.
0-100% Relative Humidity

Flash Point (Setaflash) | 891R Part A: 75°F (24°C)
891R Part B: 71°F (22°C)

Carboguard 891 R

PRODUCT DATA SHEET



TYPICAL CHEMICAL RESISTANCE

Exposure	Fumes	Splashes & Spills
Acids	Very Good	Not Recommended
Alkalies	Excellent	Very Good
Salt	Excellent	Excellent
Solvents	Very Good	Not Recommended
Water	Excellent	Excellent

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.