

SELECTION & SPECIFICATION DATA

Generic Type	Cycloaliphatic Amine Epoxy
Description	Highly chemical resistant epoxy with specialized application in hyperbaric chambers for the US Navy and other users. The product is self-priming and is most often used as a two-coat lining system. The product is an immersion-grade formula for water, seawater and other exposures.
Features	<ul style="list-style-type: none"> • Excellent chemical resistance • Self-priming and primer/finish capabilities • Very good abrasion resistance • VOC compliant to current AIM regulations • The US Navy has determined its suitability for use in hyperbaric chambers
Color	Refer to Carboline Color Guide.
Finish	Gloss
Primer	Self-priming.
Dry Film Thickness	4 - 6 mils (102 - 152 microns) per coat Do not exceed 10 mils (250 microns) in a single coat.
Solids Content	By Volume 75% +/- 2%
Theoretical Coverage Rate	1203 ft ² /gal at 1.0 mils (29.5 m ² /l at 25 microns) 301 ft ² /gal at 4.0 mils (7.4 m ² /l at 100 microns) 200 ft ² /gal at 6.0 mils (4.9 m ² /l at 150 microns) Allow for loss in mixing and application.
VOC Values	<p>As Supplied : 1.7lbs/gal (214 g/l) Thinner 2 : 13oz/gal=2.2lbs/gal (271g/l) Thinner 33 : 16oz/gal=2.3lbs/gal (285g/l) Thinner 33 : 7oz/gal=2.0lbs/gal (250g/l) Thinner 2 : 7oz/gal=2.0lbs/gal (250g/l)</p> <p>*Use Thinner #76 up to 8 oz/gal for 890 where non-photochemically reactive solvents are required.</p>
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)
Limitations	Epoxies may lose gloss, discolor and chalk when exposed to sunlight. Do not apply over latex coatings. For immersion projects use only factory made material in special colors. Consult Technical Service for specifics.

SUBSTRATES & SURFACE PREPARATION

General | Surfaces must be clean and dry. Remove dirt, dust, oil and all other contaminant.

SUBSTRATES & SURFACE PREPARATION

Steel | **Immersion:** SSPC-SP10
Non-immersion: SSPC-SP6
 Profile: 1.5-3.0 mills (38-75 microns) *SSPC-SP2 or SP3 are suitable cleaning methods for mild environments.*

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.

PERFORMANCE DATA

Test Method	System	Results
ASTM B 117 Salt Fog	Blasted Steel 2 cts. 890	No effect on plane, rust in scribe. 1/16" undercutting at scribe after 2000 hours
ASTM B117 Salt Fog	Blasted Steel 1 ct. IOZ 1 ct 890	No effect on plane, no rust in scribe and no undercutting after 4000 hours
ASTM D 4060 Abrasion	Blasted Steel 1 ct Epoxy Pr. 1 ct 890	85 mg. loss after 1000 cycles, CS17 wheel 1000 gm. load
ASTM D1735 Water Fog	Blasted Steel 1 ct. Epoxy Pr. 1 ct. 890	No blistering, rusting or delamination after 2800 hours
ASTM D2486 Scrub Resistance	Blasted Steel 1 ct. 890	93% gloss retained after 10,000 cycles w/liquid scrub medium
ASTM D3359 Adhesion	Blasted Steel 1 ct 890	5A
ASTM D3363 Pencil Hardness	Blasted Steel 2 cts 890	Greater than 8H
ASTM E84 Flame and Smoke	2 ct 890	5 Flame 5 Smoke Class A

MIXING & THINNING

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

Thinning | Spray: Up to 13 oz/gal (10%) w/ #2
 Brush: Up to 16 oz/gal (12%) w/ #33
 Roller: Up to 16 oz/gal (12%) w/ #33
 Thinner #33 can be used for spray in hot/windy conditions. 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.

Ratio | 1:1 Ratio (A to B)

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.

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 adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable.

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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.

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: 0.017"-0.021" Output PSI: 2100-2300 Filter Size: 60 mesh *PTFE 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 rerolling. 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.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
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 that the substrate temperature is 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.	Dry to Recoat	Dry to Recoat & Topcoat w/ other finishes	Final Cure General	Final Cure Immersion
50°F (10°C)	12 Hours	24 Hours	3 Days	NR
60°F (16°C)	8 Hours	16 Hours	2 Days	10 Days
75°F (24°C)	4 Hours	8 Hours	1 Day	5 Days
90°F (32°C)	2 Hours	4 Hours	16 Hours	3 Days

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).**

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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Carboguard[®] 890 H

PRODUCT DATA SHEET



CLEANUP & SAFETY

Safety	Read and follow all caution statements on this product data sheet and on the SDS for this product. 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. User should test and monitor exposure levels to insure all personnel are below guidelines.
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.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: Min. 36 months at 75°F (24°C) Part B: Min. 15 months at 75°F (24°C) *When kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	40° -110°F (4°-43°C) 0-100% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	2 Gallon Kit - 29 lbs (13 kg) 10 Gallon Kit - 145 lbs (66 kg)
Flash Point (Setaflash)	89°F (32°C) for Part A 73°F (23°C) for Part B 71°F (22°C) for mixed

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.