

SELECTION & SPECIFICATION DATA

Generic Type	Polyamine Epoxy
Description	Single-coat, plural-component applied, ultra-high build coating for use on steel and concrete substrates where rapid cure characteristics are required. Phenoline 310 is applied by plural component spray equipment and offers the same high performance properties of Phenoline 309, yet in a quick-curing formulation.
Features	• Rapid cure-to-handle and cure-to-service characteristics • Low temperature (35°F) cure capabilities • Single coat application reduces labor costs • Ultra-high build capabilities provides a void-free film and excellent edge protection • Wide chemical resistance to acids, caustics and aliphatic solvents • Exceptional bond strength • Can be mat reinforced where exposure conditions dictate • VOC compliant to current AIM regulations
Color	Gray (F744)
Finish	Eggshell
Primer	Self-priming
Dry Film Thickness	20 - 30 mils (508 - 762 microns) per coat Most applications are applied in a single coat at 20-30 mils (500-750 microns). May be applied at heavier thicknesses up to 60 mils (1500 microns) as needed or specified. See Shelf Life for film build limitations.
Solids Content	By Volume 100% +/- 0%
Theoretical Coverage Rate	1604 ft²/gal at 1.0 mils (39.4 m²/l at 25 microns) 80 ft²/gal at 20.0 mils (2.0 m²/l at 500 microns) 53 ft²/gal at 30.0 mils (1.3 m²/l at 750 microns) Allow for loss in mixing and application.
VOC Values	As Supplied : 0.0 lbs/gal (0 g/l) These are nominal values and may vary slightly with color.
Dry Temp. Resistance	Continuous: 140°F (60°C) Non-Continuous: 180°F (82°C) Discoloration and loss of gloss is observed above 140°F (60°C).
Limitations	Epoxies lose gloss, discolor and eventually chalk in sunlight exposure. This coating commonly develops an amine-blush during cure. While this condition will not adversely affect performance of the coating, this blush must be removed before applying additional coats and may require removal before placing into 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.
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SUBSTRATES & SURFACE PREPARATION

Steel	Immersion: SSPC-SP10 Profile: 3 mils (76 microns) minimum
Concrete or CMU	The concrete must be cured for 28 days (at 75°F/50% R.H.) or until the concrete reaches its designated compressive strength. Prepare and clean the surface in accordance with SSPC-SP13/NACE No. 6 guidelines. Test for moisture by conducting a plastic sheet testing in accordance with ASTM D4263.

MIXING & THINNING

Mixing	Power mix each component separately. Phenoline 310 is applied with two-component, heated, airless spray.
Thinning	Not recommended. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.
Ratio	4:1 Ratio (A to B)
Pot Life	25 minutes at 75°F (24°C). Pot life ends when material begins to thicken and starts to heat up. Pot life times will be less at higher temperatures.
Material Temperature	Part A: 110-140°F Part B: 90-110°F Difference between Part A and B should be within 20°F.

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)	Recommended for application by plural component airless spray. This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. Contact Carboline Technical Service for plural component equipment recommendations.
Conventional Spray	Not recommended
Brush & Roller (General)	Not recommended

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	110°F (43°C)	35°F (2°C)	35°F (2°C)	0%
Maximum	140°F (60°C)	125°F (52°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. To reduce outgassing when applying to concrete substrates, do not apply in direct sunlight or when surface temperatures are increasing. Best results are obtained when ambient and surface temperatures are decreasing or constant.

CURING SCHEDULE

Surface Temp.	Final Cure General	Maximum Recoat Time	Minimum Recoat Time
35°F (2°C)	36 Hours	36 Hours	16 Hours
60°F (16°C)	16 Hours	16 Hours	8 Hours
75°F (24°C)	8 Hours	8 Hours	4 Hours
90°F (32°C)	6 Hours	6 Hours	2 Hours

These times are based on a 20.0 mil (500 micron) dry film thickness. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times. Condensation on the surface or humidity above 25% during application and curing will result in a surface haze or blush. 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 washed with detergent and water, then abraded by sweep blasting prior to the application of additional coats. For force curing, contact Carboline Technical Service for specific requirements.

CLEANUP & SAFETY

Cleanup	Use Thinner #2 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 SDS for this product. Employ normal workmanlike safety precautions.
Ventilation	Spray mist may cause explosion. 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. In addition to ensuring proper ventilation, appropriate respirators must be used by all application personnel.
Caution	This product contains flammable materials. 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	The cure mechanism of this product is not affected for a minimum of 24 months. Film build (per coat) decreases with age. <i>Fresh:</i> Over 60 mils; 3-6 months: 50-30 mils; <i>After 6 months:</i> less than 30 mils. Follow intercoat preparation requirements. *Shelf Life: (actual stated shelf life) 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, out of direct sunlight.
Shipping Weight (Approximate)	1 Gallon Kit - 12 lbs. (5 kg) 20 Gallon Kit - 165 lbs. (75 kg)
Flash Point (Setaflash)	Part A: >205°F (96°C) Part B: >205°F (96°C)

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 to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. 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. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.