product data

carboline®

Phenoline® 341

CLASSIFIED UL WATER QUALITY

Selection & Specification Data

Generic Type
Solventless, two-component, cross-linked epoxy.

Description
Phenoline 341 is a solventless, epoxy lining for a variety of cargos including water, potable water, wastewater, seawater, fuels, crude oils, and other solutions. It is applied by standard airless spray equipment, as a single coat lining for ballast tanks or other storage vessels. It is acceptable for use as a lining for potable water tanks of 100 gal or larger and pipe diameters of 18 inches or larger.

Features
- Single coat, high performance protection.
- Low to no odor.
- Easy to apply by standard equipment.
- Excellent chemical resistance.
- Fast cure.
- Tough abrasion resistant film
- Suitable for potable water use (complies with ANSI/NSF Standard 61)
- Excellent flexibility
- Excellent corrosion protection.
- Impact resistant.
- Hi-build application in one coat.
- Low temperature cure (35°F)

Color
Blue, Grey, Dark Grey, and Off-white

Finish
High Gloss (Epoxies lose gloss, discolor and eventually chalk in sunlight exposure).

Primers
Self-priming.

Dry Film Thickness
For potable water applications:
1 coat at 15-30 mils (375-750 microns) or 2 coats for a total of 30-60 mils (750-1500 microns) for a maximum of 60 mils (1500 microns).

For all other applications:
1 coat at 16-25 mils (400-625 microns). May be applied up to 30 mils max in a single coat or multiple coats if desired for the application.

Solids Content
By Volume: 99% ± 1%

Theoretical Coverage Rate
1572 mil ft^2 (38.6 m^2/l at 25 microns)
104 ft^2 at 15 mils (2.56 m^2/l at 375 microns)
Allow for loss in mixing and application.

VOC Values
As supplied: 0.06 lbs./gal (7 g/l)
Thinned: Thinning is not required or recommended. These are nominal values and may vary slightly with color.

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).

Substrates & Surface Preparation

General
Remove all oil or grease from the surface to be coated with clean rags soaked in Thinner 2 or Carboline Surface Cleaner 3 (refer to Surface Cleaner 3 instructions) in accordance with SSPC-SP1. For girth weld areas, all burrs, weld slag and other matter shall be removed to achieve a smoother surface prior to blasting.

Steel
Abrasive blast to a Near White Metal Finish in accordance with SSPC-SP 10 and obtain a 3.0 mil (75 micron) blast profile.

Concrete
Clean and dry. Remove all loose, unsound concrete. Do not apply coating unless concrete has cured at least 28 days @ 70°F (21°C) and 50% RH or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require filling/surfacing.

Performance Data

Exposure	Splash & Spillage
Acids	Very Good
Alkalies	Excellent
Solvents	Very Good
Salt	Excellent
Water	Excellent

Application Equipment

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.
General Guidelines:

Spray Application (General)
The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco, and WIWA.

Airless Spray
Airless spray equipment capable of 6000 psi (minimum 64:1 airless pump) is required for the application of this material. Recommended tip size is 0.21-0.25". Contact Carboline Technical Service for additional information. Plural component equipment may also be used if the material can not be sprayed within the working time of the mixed material.

Note: To facilitate spray application when starting up, condition the spray hose to the same temperature as the material.

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Mixing & Thinning

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modification to these guidelines to achieve the desired results.

General Guidelines:

Mixing Premix each component separately, than add together and mix until uniform.

Ratio By Volume 4:1 Ratio (A to B)

Thinning Thinning is not normally required. 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 30 minutes (large kit) at 80°F (27°C). The pot life ends when the material becomes too viscous to use.

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 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 While this is a solventless epoxy, it is common practice when used as a tank lining or in enclosed areas to circulate the air during and after application until the coating is cured. Minimal protection is needed when proper ventilation is achieved. The ventilation system should be capable of preventing any solvent vapor concentration from reaching the lower explosion limit for any solvents that may be present. 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 may contain flammable solvents if thinned. 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	80°F (27°C)	60-85°F (16-29°C)	60-85°F (16-29°C)	40-80%
Minimum	80°F (27°C)	35°F (2°C)	35°F (2°C)	10%
Maximum	90°F (32°C)	110°F (43°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

The following cure schedule is based on film thickness and service conditions (single coat system).

Surface Temp. & 50% RH	Dry to Handle	Cure for Immersion Service		
		Crude Oil (12-16 mils)	Potable Water (up to 30 mils)	All Other Service (16-25 mil)
35°F (2°C)	72 Hours	7 days	30 days	10 days
50°F (10°C)	36 Hours	5 days	21 days	7 days
75°F (24°C)	10 Hours	3 days	15 days	3 days
100°F (38°C)	6 Hours	36 hours	7 days	36 hours

Force Cure Bake Cycle
(optional for all service except potable water)

Ambient Cure at 75°F (24°C)	Then Bake at Surface Temperature of 130°F (54°C)*
15 Minutes	3.5 Hours

***Note:** For the bake cycle, increase the surface temperature from 75°F (24°C) to 130°F (54°C) at a rate not exceeding 30°F (16°C) every 15 minutes. Following the 3.5-hour cure, allow the lining to air dry for an additional two hours prior to placing in service.

The following cure schedule is for film thicknesses in the 30-60 mil range (one or two coat system).

Surface Temp. & 50% Relative Humidity	Dry to Handle or Recoat	Standard Cure for Immersion Service	Cure for Potable Water Service
35°F (2°C)	6 days	20 days	60 days
50°F (10°C)	3 days	15 days	40 days
75°F (24°C)	24 hours	7 days	30 days
100°F (38°C)	12 Hours	3 days	15 days

Maximum Recoat: When using Phenoline 341 for touch-up or multi-coat applications, the maximum recoat schedule is 21 days for temperatures less than 50°F and 14 days for temperatures between 50°F and 100°F. Abrading the surface is required for cure times that exceed these guidelines.

Insufficient ventilation or cooler temperatures will require longer cure times. 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 if recoating.

Packaging, Handling & Storage

Shipping Weight (Approximate) 1 Gallon Kit: 14 lbs. (6.3 kg); 5 Gallon Kit: 69 lbs. (31 kg)

Flash Point (Setaflash) Phenoline 341 Part A: >205°F (96°C)
Phenoline 341 Part B: >230°F (110°C)

Storage Temperature & Humidity 40° - 110°F (4°- 43°C) Store indoors.
0-80% Relative Humidity

Shelf Life Part A: 24 months at 75°F (24°C)
Part B: 18 months at 75°F (24°C)

***Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.**

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An RPM Company

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