



**SELECTION & SPECIFICATION DATA**

<b>Generic Type</b>	Solventless, two-component, cross-linked epoxy.
<b>Description</b>	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 75 gal or larger and pipe diameters of 16 inches or larger.
<b>Features</b>	<p>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)          * (Valid if manufactured at a certified location.)</p>
<b>Color</b>	Blue, Grey, Dark Grey, Off White
<b>Finish</b>	<p>High Gloss (85-100)          (Epoxies lose gloss, discolor and eventually chalk in sunlight exposure.)</p>
<b>Primer</b>	Self-priming
<b>Dry Film Thickness</b>	<p>381 - 762 microns (15 - 30 mils) per coat          406 - 635 microns (16 - 25 mils) per coat</p> <p><u>For potable water applications:</u>          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)  <u>For all other applications:</u>          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.</p>
<b>Solids Content</b>	By Volume 99% +/- 1%
<b>Theoretical Coverage Rate</b>	<p>39.0 m<sup>2</sup>/l at 25 microns (1588 ft<sup>2</sup>/gal at 1.0 mils)          2.6 m<sup>2</sup>/l at 375 microns (106 ft<sup>2</sup>/gal at 15.0 mils)          1.3 m<sup>2</sup>/l at 750 microns (53 ft<sup>2</sup>/gal at 30.0 mils)          Allow for loss in mixing and application.</p>
<b>VOC Values</b>	<p><b>As Supplied</b> : 0.06 lbs./gal (7 g/l)          These are nominal values and may vary slightly with color.</p>

# Phenoline 341

PRODUCT DATA SHEET



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

## SUBSTRATES & SURFACE PREPARATION

<b>General</b>	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.
<b>Steel</b>	Abrasive blast to a Near White Metal Finish in accordance with SSPC-SP 10 and obtain a 3.0 mil (75 micron) blast profile.
<b>Concrete or CMU</b>	Clean and dry. Remove all loose, unsound concrete. <b>Do not apply coating unless concrete has cured at least 28 days at 70°F (21°C) and 50% RH or equivalent.</b> Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require filling/surfacing.

## MIXING & THINNING

<b>Mixing</b>	Premix each component separately, than add together and mix until uniform.
<b>Thinning</b>	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.
<b>Ratio</b>	4:1 Ratio (A to B)
<b>Pot Life</b>	30 minutes (large kit) at 80°F (27°C). The pot life ends when the material becomes too viscous to use.  *These are general guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

## 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.

<b>Spray Application (General)</b>	The following spray equipment has been found suitable and is available from manufacturers.
<b>Airless Spray</b>	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. <b>Note:</b> To facilitate spray application when starting up, condition the spray hose to the same temperature as the material.

## APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	27°C (80°F)	2°C (35°F)	2°C (35°F)	10%
Maximum	32°C (90°F)	43°C (110°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.	Dry to Handle	Immersion Service (Crude Oil, 12-16mils)	Immersion Service (Potable Water, up to 30 mils)	Immersion Service (All Others, 16-25 mils)
2°C (35°F)	72 Hours	7 Days	15 Days	10 Days
10°C (50°F)	36 Hours	5 Days	10 Days	7 Days
24°C (75°F)	10 Hours	3 Days	7 Days	3 Days
38°C (100°F)	6 Hours	36 Hours	3 Days	36 Hours

*The above cure scheduling is based on 50% relative humidity and film thickness and service conditions (single coat system).*

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

Ambient Cure @ 75°F (24°C) for 15 minutes followed by 3.5 hour bake cycle @ 130°F (54°C).

**\*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.	Dry to Handle or Recoat	Cure for Most Immersion Services	Potable Water Service
2°C (35°F)	6 Days	20 Days	15 Days
10°C (50°F)	3 Days	15 Days	10 Days
24°C (75°F)	24 Hours	7 Days	7 Days
38°C (100°F)	12 Hours	3 Days	4 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.

## 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.

# Phenoline 341

PRODUCT DATA SHEET



## CLEANUP & SAFETY

<b>Ventilation</b>	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.
<b>Caution</b>	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.

## PACKAGING, HANDLING & STORAGE

<b>Shelf Life</b>	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.
<b>Shipping Weight (Approximate)</b>	1 Gallon Kit - 14 lbs. (6.3 kg) 5 Gallon Kit - 69 lbs. (31 kg)
<b>Storage Temperature &amp; Humidity</b>	40° - 110°F (4° - 43°C) 0-80% Relative Humidity
<b>Flash Point (Setaflash)</b>	Phenoline 341 Part A: >205°F (96°C) Phenoline 341 Part B: >230°F (110°C) Phenoline 341 Mixed: 211°F (99°C)
<b>Storage</b>	Store Indoors.

## 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.