

Selection & Specification Data

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

Description Phenoline 341 is a solventless, epoxy lining for a variety of cargoes 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 650 litres or larger and pipe internal diameters of 760 mm (23 inches) or larger.

- Features**
- Single coat, high performance protection.
 - Low to no odour.
 - Easy to apply by standard equipment.
 - Excellent chemical resistance.
 - Fast cure.
 - Tough abrasion resistant film
 - Tested and approved to AS 4020:2005 as suitable for potable water use (also UL approved as complying with ANSI/NSF Standard 61)
 - Excellent flexibility
 - Excellent corrosion protection.
 - Impact resistant.
 - Hi-build application in one coat.
 - Low temperature cure 2°C (35°F).

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

Colour Grey

Primers Self priming.
Where priming / blast holding required refer to Carboline Technical Service for primer suited to exposure.

Dry Film Thickness **For potable water applications:**
1 coat at 375-750 microns or 2 coats for a total of 750-1500 microns for a maximum of 1500 microns.

For all other applications:
1 coat at 400-625 microns. May be applied up to 760 microns max in a single coat or multiple coats if desired for the application.

Solids Content By Volume: 100%

Theoretical Coverage Rate 38.6 m²/l at 25 microns
2.56 m²/l at 375 microns
Allow for loss in mixing and application.

Mix Ratio 4:1 by volume (Part A : Part B)

VOC Values As supplied: 7 g/l
These are nominal values and may vary slightly with colour.

Dry Temp. Resistance Continuous: 121°C
Non-Continuous: 149°C
Discolouration and loss of gloss is observed above 93°C.

Substrates & Surface Preparation

General Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants as described in AS 1627.1 (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 AS 1627.4 Class 2½ (SSPC-SP 10) and obtain a 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 @ 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.

Approval Data

AS 4020:2005 Potable Water Approval

Tested and approved for lining tanks and pipes with an immersed surface area to water volume ratio of 52.5 cm² / litre or less.
Reference: AWQC Report ID #82127 (7th March 2011)

ANSI/NSF Standard 61 Potable Water Approval

Tested and approved for lining tanks and pipes with an immersed surface area to water volume ratio of 98 cm² / litre or less.
Reference: Underwriters Laboratories (UL) Certificate 20090728-MH26118F (28th July 2009)

Performance Data

Exposure	Splash & Spillage
Acids	Very Good
Alkalis	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 DeVilbiss and Graco.

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 0.5-0.65mm (0.021-0.025"). 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.

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, then add together and mix until uniform.

Ratio 4:1 by volume (Part A : Part 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 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 vapour 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 OSH 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 local 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	27°C	16°-29°C	16°-29°C	40-80%
Minimum	27°C	2°C	2°C	10%
Maximum	32°C	43°C	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 300-400µm	Potable Water up to 750µm	All other services 400-625µm
2°C	72 hours	7 days	30 days	10 days
10°C	36 hours	5 days	21 days	7 days
24°C	10 hours	3 days	15 days	3 days
38°C	6 hours	36 hours	7 days	36 hours

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

Ambient Cure. at 24°C	Then Bake at Surface Temperature of 54°C*
15 minutes	3½ hours

*Note: For the bake cycle, increase the surface temperature from 24°C to 54°C at a rate not exceeding 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 750-1500 micron range (one or two coat system).

Surface Temperature 50% RH	Dry to Handle or Recoat	Standard Cure for Immersion Service	Cure for Potable Water Service
2°C	6 days	20 days	60 days
10°C	3 days	15 days	40 days
24°C	24 hours	7 days	30 days
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 10°C and 14 days for temperatures between 10°C and 38°C. 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 discolouration and may result in a surface haze. Any haze or blush must be removed by water washing if recoating.

Packaging, Handling & Storage

Shipping Weight & Pack Sizes

1 Gallon Kit
6.3 kg (14 lbs)

5 Gallon Kit
31 kg (69 lbs)

Flash Point (Setaflash)

Phenoline 341 Part A: > 96°C
Phenoline 341 Part B: > 110°C

Storage Temperature & Humidity

Store under cover. KEEP DRY
4° - 43°C
0-80% Relative Humidity

Shelf Life

Part A: 24 months at 24°C
Part B: 18 months at 24°C

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

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