AMERLOCK® 400 VOC

DESCRIPTION

VOC Compliant High Solids Epoxy Coating

PRINCIPAL CHARACTERISTICS

- VOC compliant for <100 g/L specifications
- High performance coating for new or old steel
- Self Priming in many applications
- Compatible with prepared, damp surfaces
- Compatible with adherent rust remaining on prepared surfaces
- Dry temperature resistance up to 450°F on insulated or uninsulated surfaces when mixed with AMERCOAT 880 glass flake additive

COLOR AND GLOSS LEVEL

- Standard primer colors and custom colors
- Semi-gloss

Note:

- Epoxy coatings will characteristically chalk and fade upon exposure to sunlight. Light colors are prone to ambering to some extent

BASIC DATA AT 20°C (68°F)

Data for mixed product	
Number of components	Two
Volume solids	83 ± 2%
VOC (Supplied)	max. 0.8 lb/US gal (approx. 99 g/l)
Temperature resistance (Continuous)	To 200°F (93°C)
Temperature resistance (Intermittent)	To 350°F (177°C)
Recommended dry film thickness	4.0 - 8.0 mils (100 - 200 µm) depending on system
Theoretical spreading rate	333 ft^2/US gal for 4.0 mils (8.3 m^2/l for 100 µm)
Shelf life	Base: at least 36 months when stored cool and dry Hardener: at least 36 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time
- Color will drift at elevated temperatures
- Intermittent temperature resistance should be less than 5% of the time, and maximum 24 hours
- Amerlock 400 VOC may be thinned with 97-739 thinner for a VOC-exempt option

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RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES

- Coating performance is proportional to the degree of surface preparation

Steel

- Remove weld spatter, protrusions, and laminations in steel. Grind welds smooth in accordance with NACE RP-0178
- Remove all surface contaminants, oil and grease in accordance with SSPC SP-1
- Abrasive blast with an angular abrasive to an SSPC SP-10 cleanliness or higher for tank lining service. Achieve a surface profile of 2.0 – 4.0 mils (50 – 100 µm)
- For atmospheric service, abrasive blast to SSPC SP-6 standards
- The product may be applied over an SSPC SP-12 WJ-2(L) for non-tank lining applications where a previous blast profile can be exposed.
- For maintenance and repair in atmospheric service, the product can be applied over surfaces prepared in accordance with SSPC SP-2 or SSPC SP-3 (hand and power tool cleaning).
- AMERCOAT 114 A may be used as a pit filler for severely pitted steel and surface discontinuities
- Check with PPG technical service for the maximum allowable soluble salt level for water immersion service. This will vary based on the water chemistry and service temperatures

Concrete

- Prepare in accordance with SSPC SP-13 guidelines
- Abrade surface per ASTM D-4259 to remove all efflorescence and laitance, to expose subsurface voids, and to provide a surface roughness equivalent of 60 grit sandpaper or coarser
- Test for moisture by conducting a plastic sheet test in accordance with ASTM D4263
- Fill voids as necessary with AMERCOAT 114 A epoxy filler
- For slabs on grade, test for moisture in accordance with ASTM F1869 (calcium chloride test)
- Slabs on grade should have a maximum moisture content of 3 lbs / 1,000 ft^2/24 hours when measured by calcium chloride test
- Surface should be free from moisture in accordance with ASTM D4263. Refer to Information Sheet # 1496ACUS for further details regarding moisture measurements

Galvanized steel

- Remove oil or soap film with detergent or emulsion cleaner
- Lightly abrasive blast with a fine abrasive in accordance with SSPC SP-16 guidelines to achieve a profile of 1.5 – 3.0 mils (38 – 75 µm). When light abrasive blasting is not possible, galvanizing can be treated with a suitable zinc phosphate conversion coating.
- Galvanizing that has at least 12 months of exterior weathering and has a rough surface with white rust present may be over-coated after power washing and cleaning to remove white rust and other contaminants
- The surface must have a measurable profile
- A test patch is recommended to determine compatibility and adhesion
- Not recommended over chromate sealed galvanizing without blasting to thoroughly remove chromates. Adhesion problems may occur

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Non-ferrous metals and stainless steel

- Abrasive blast in accordance with SSPC SP-16 guidelines to achieve a uniform and dense 1.5-4.0 mil anchor profile. Size and hardness of abrasive should be adjusted as necessary based on the hardness of the substrate
- Aluminum may be treated with a surface treatment compliant with Mil-DTL-5541 or equivalent (non-immersion applications only).

Aged coatings and repairs

- Ensure the coating system is sound and well adhered
- Do not apply over acrylic coatings or coatings that exhibit poor solvent resistance
- A test patch is recommended to determine compatibility and adhesion
- Sweep blast or otherwise thoroughly abrade the existing coating in accordance with SSPC SP-7
- Alternately, PREP 88 may be used to prepare some existing coatings. Please refer to PREP 88 data sheet for details
- Feather the edges of tightly adhered, in-tact coatings at the perimeter of repair areas
- Power tool clean the existing steel in accordance with SSPC SP-3 (atmospheric service) or SSPC SP-11 (immersion service)

Substrate temperature and application conditions

- Surface temperature during application should be between 50°F (10°C) and 122°F (50°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Ambient temperature during application and curing should be between 50°F (10°C) and 122°F (50°C)
- Relative humidity during application should be above 0% and below 100%

Note:

- Epoxy AMERLOCK 2 VOC hardener can be used with the AMERLOCK 2/400 base component for applications that require a faster dry time or application at lower temperature. The A component is the same for AMERLOCK 400VOC and AMERLOCK 2VOC. The B components are interchangeable

SYSTEM SPECIFICATION

- Primers: Direct to substrate; DIMETCOTE- Series Primers, AMERCOAT 68HS, AMERCOAT 68MCZ
- Topcoats: AMERCOAT 450-Series Polyurethanes,AMERSHIELD VOC, PSX 700, PSX One

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 1:1

- Pre-mix base component with a pneumatic air mixer at moderate speeds to homogenize the container. Add hardener to base and agitate with a power mixer for 1–2 minutes until completely dispersed

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Application

- Area should be sheltered from airborne particulates and pollutants
- Ensure good ventilation during application and curing
- Provide shelter to prevent wind from affecting spray patterns
- Avoid combustion gases or other sources of carbon dioxide that may promote amine blush and ambering of light colors
- PPG 97-739 and tert-butyl acetate are VOC exempt thinners which can be used without limit to maintain < 100 g/L. The following thinners may be used up to 2.5 oz. per gallon to maintain a VOC of < 100 g/L.

Material temperature

- Material temperature during application should be between 50°F (10°C) and 100°F (38°C)

Pot life

2.5 hours at 70°F (21°C)

Note:

- See ADDITIONAL DATA – Pot life

Air spray

Recommended thinner

THINNER 21-06 (AMERCOAT 65) (xylene)), THINNER 21-25 (AMERCOAT 101) (recommended for > 90°F (32°C))

Volume of thinner

0 - 20%

Nozzle orifice

Approx. 0.070 in (1.8 mm)

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Airless spray

- 45:1 pump or larger
- Can be applied with plural component equipment

Recommended thinner

THINNER 21-06 (AMERCOAT 65) (xylene)), THINNER 21-25 (AMERCOAT 101) (recommended for > 90°F (32°C))

Volume of thinner

0 - 5%, depending on required thickness and application conditions

Nozzle orifice

0.017 – 0.019 in (approx. 0.43 – 0.48 mm)

Brush/roller

- Use a high quality natural bristle brush and/or solvent resistant, 3/8" nap roller. Ensure brush/roller is well loaded to avoid air entrainment. Multiple coats may be necessary to achieve adequate film-build

Recommended thinner

Thinner 21-06 (Amercoat 65, 97-727, xylene) or Thinner 21-25 (Amercoat 101) for temperatures > 90 F.

Volume of thinner

Up to 5% THINNER can be added if desired

Cleaning solvent

- THINNER 90-58 (AMERCOAT 12)
- THINNER 21-06 (AMERCOAT 65)

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ADDITIONAL DATA

Overcoating interval with AMERCOAT 861 accelerator for DFT up to 5.0 mils (125 µm)					
Overcoating with...	**Interval**	**32°F (0°C)**	**50°F (10°C)**	**70°F (21°C)**	**90°F (32°C)**
itself	Minimum	16 hours	16 hours	8 hours	4 hours
	Maximum	2 months	1.5 months	30 days	15 days
urethane and PSX	Minimum	16 hours	16 hours	8 hours	4 hours
	Maximum	30 days	21 days	14 days	5 days

Notes:

- Note that Amercoat 861 accelerator will significantly reduce the pot life.
- Dry times are dependent on air and surface temperatures as well as film thickness, ventilation, and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures – not simply air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window
- Surface must be clean and dry. Any contamination must be identified and removed. A detergent wash with PREP 88 or equivalent is required prior to application of topcoats after 30 days of exposure. However, particular attention must be paid to surfaces exposed to sunlight where chalking may be present. In those situations, a further degree of cleaning may be required. PPG Technical Service can advise on suitable cleaning methods. If maximum recoat/topcoat time is exceeded, then roughen surface.
- The use of Amercoat 861 will cause increased yellowing of the coating, especially for light colors.
- Amercoat 861 accelerator may be added at up to 1 pint per mixed 5 gallons to speed curing times.

Overcoating interval for DFT up to 5.0 mils (125 µm)					
Overcoating with...	**Interval**	**50°F (10°C)**	**70°F (21°C)**	**90°F (32°C)**	**120°F (49°C)**
itself	Minimum	32 hours	16 hours	8 hours	3 hours
	Maximum	4 months	3 months	1.5 months	14 days
urethane and PSX	Minimum	32 hours	16 hours	8 hours	3 hours
	Maximum	30 days	30 days	14 days	5 days

Notes:

- Surface must be clean and dry. Any contamination must be identified and removed. A detergent wash with PREP 88 or equivalent is required prior to application of topcoats after 30 days of exposure. However, particular attention must be paid to surfaces exposed to sunlight where chalking may be present. In those situations, a further degree of cleaning may be required. PPG Technical Service can advise on suitable cleaning methods. If maximum recoat/topcoat time is exceeded, then roughen surface.
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Curing time for DFT up to 5.0 mils (125 µm)			
Substrate temperature	**Dry to touch**	**Dry to handle**	**Service- water immersion**
32°F (0°C)	Not recommended	Not recommended	Not recommended
50°F (10°C)	28 hours	40 hours	21 days
70°F (21°C)	9 hours	20 hours	7 days
90°F (32°C)	4.5 hours	12 hours	4 days

Curing time with 1 pint of Amercoat 861 per mixed 5 gallons			
Substrate temperature	**Dry to touch**	**Dry to handle**	**Service- water immersion**
32°F (0°C)	48 hours	3 days	Not recommended
50°F (10°C)	15 hours	24 hours	Not recommended
70°F (21°C)	4 hours	10 hours	Not recommended
90°F (32°C)	2 hours	5 hours	Not recommended

Pot life (at application viscosity)	
Mixed product temperature	**Pot life**
50°F (10°C)	4 hours
70°F (21°C)	2.5 hours
90°F (32°C)	90 minutes

Note:

- AMERCOAT 8 thinner can be used to extend pot life approximately 10 - 20% in hot weather conditions

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Pot life (at application viscosity) with 1 pint Amercoat 861 per 5 gallons	
Mixed product temperature	**Pot life**
50°F (10°C)	1.5 hours
70°F (21°C)	1 hour
90°F (32°C)	45 minutes

Note:

- AMERCOAT 8 thinner can be used to extend pot life approximately 10 - 20% in hot weather conditions

Product Qualifications

- Compliant with USDA Incidental Food Contact Requirements
- AWWA D102-06 ICS #1, #2, #3, #5
- LEED's compliant for Anti-corrosive Paint category

SAFETY PRECAUTIONS

- See Safety Data Sheet and product label for complete safety and precaution requirements
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

REFERENCES

- Information sheet | Explanation of product data sheets

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

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LIMITATIONS OF LIABILITY

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AVAILABILITY OF PACKAGING

Packaging

- 2-gallon and 5-gallon kits; (2-gallon kits have 1 full gallon of base and 1 full gallon of hardener; 5 gallon kits have 2.5 gallons of base and 2.5 gallons of hardener)

Depending on specific country of application the following versions are available:

Product	Color
AK2V-72	Oxide Red Base
AK2V-T5	High Hiding Yellow Tint Base *
AK400V-B	Hardener
AK2V-1	Buff Base
AK2V-T3	Neutral Tint Base *
AK2V-9	Black Base
AK2V-3	White Base
AK2V-T1	Deep Tint Base *
AK2V-81	Safety Yellow Base
AK2V-23	Pearl Gray Base
AK2V-T2	Light Tint Base *

Note:

- * Tintable using UCD V-Line colorants only

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