



# CORLAR<sup>®</sup> 2.1 ST<sup>®</sup>

## SATIN HIGH SOLIDS EPOXY MASTIC

(formerly Corlar<sup>®</sup> 25P<sup>®</sup>)

Corlar<sup>®</sup> 2.1 ST<sup>™</sup> is a satin gloss, high build epoxy mastic, two-package, VOC conforming product (2.1 lbs/gal) based on DuPont amido amine modified polyamide epoxy technology. The resulting highly durable coating delivers outstanding corrosion and chemical resistance.

### SUGGESTED USES:

As a high performance direct-to-metal (DTM) coating or topcoat on carbon steel, galvanized steel, stainless steel, aluminum, concrete, concrete block and wood where:

- Rusted, hand or power-tool cleaned surfaces must be protected.
- Single coat applications up to 10 mils dry film thickness are required.
- Application will be made over damp surfaces and/or under conditions of high relative humidity
- Excellent resistance to chemical and/or marine environments is required.
- Outstanding abrasion resistance and edge protection are required.
- Application by brush and roller, in addition to spraying, may be necessary.
- Application must be made at temperatures as low as 35°F.
- No induction time and long pot life will improve productivity.

Corlar<sup>®</sup> 2.1 ST<sup>™</sup> may also be used as a high performance tank lining on carbon steel or concrete for immersion service in near neutral pH water, fresh water, or saltwater. Corlar<sup>®</sup> 2.1 ST<sup>™</sup> is not recommended for use with potable water. Contact your DuPont Performance Coatings Representative for specific immersion service recommendations and procedures.

### NOT RECOMMENDED FOR:

- Immersion service in potable water, chemicals or hydrocarbons.
- Exterior exposure without topcoat.

### RECOMMENDATIONS FOR IMMERSION SERVICE:

Corlar<sup>®</sup> 2.1 ST<sup>™</sup> when applied in multiple coats (at least 2) at 10-12 mil DFT is recommended for immersion service in near neutral, fresh or saltwater exposures. It is not recommended for use with potable water. It may be used for fire water towers, ballast tanks, clarifiers, wastewater treatment plants, offshore structures, pier pilings and supports and other areas where a high level of water resistance is required. See Additional Comment #5.

### COMPATIBILITY WITH OTHER COATINGS:

Corlar<sup>®</sup> 2.1 ST<sup>™</sup> is highly compatible with most coating types. It may be used over most aged and hard cured coatings in good condition. Testing for lifting, bubbling and adhesion is recommended to assure compatibility with unknown coatings. Contact your DuPont Performance Coatings Representative for specific recommendations.

### MAXIMUM SERVICE TEMPERATURE:

Up to	250°F	Continuous
	300°F	Intermittent
	100°F	Immersion

All technical advice, recommendations and services are rendered by the Seller gratis. They are based on technical data which the Seller believes to be reliable, and are intended for use by persons having skill and know-how at their own discretion and risk. Seller assumes no responsibility for results obtained or damages incurred from their use by Buyer in whole or in part. Such recommendations, technical advice or services are not to be taken as a license to operate under or intended to suggest infringement of any existing patent.

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**COLOR CHANGE/CHALKING:**

Corlar<sup>®</sup> 2.1 ST<sup>™</sup> is primarily designed for corrosion protection. Corlar<sup>®</sup> 2.1 ST<sup>™</sup> will chalk upon exposure to sunlight. If gloss, color retention and color stability are important, Corlar<sup>®</sup> 2.1 ST<sup>™</sup> should be topcoated with Imron<sup>®</sup> 2.8 HG<sup>™</sup> or Imron<sup>®</sup> 3.5 HG<sup>™</sup>, Tufcote 3.5 HG-NI<sup>™</sup> or other appropriate topcoat. In high temperature applications, some yellowing may occur. See Additional Comment #8.

**PERFORMANCE PROPERTIES:**

Abrasion	Excellent	Humidity	Excellent
Acids	Very Good	Salts	Excellent
Alkalis	Excellent	Solvents	Excellent
Ammonia	Excellent	Weather	Very Good (will chalk on exterior exposure)

**VOLATILE ORGANIC CONTENT (VOC) THEORETICAL:**

Condition	Thinner	% VOC		
		Max	(lbs/gal)*	(g/l)*
Airless Normal	Y32035 <sup>™</sup>	2-5	2.3	276
Conventional	Y32035 <sup>™</sup>	7-10	2.5	300
Max. Pot Life	Y32035 <sup>™</sup>	15	2.7	324
	RT001P <sup>™</sup>	15	2.8	336
Hot & Windy	T-8054 <sup>™</sup>	10-15	2.8	336
Brush & Roll	RT001P <sup>™</sup>	10-15	2.8	336
Mixed Unthinned*			2.1	252

\*Reported values at higher level of reduction (theoretical/ave.) Reported values are average Across Color Range.

**COLOR:**

Various. Select Factory Packaged colors and custom mixes available.

**GLOSS:**

Satin Finish

**CURE TIME – HOURS @ 50% R.H. @ 5 MILS SUGGESTED DFT**

	50°F (10°C)	70°F (21°C)	90°F (32°C)
To Touch	3-4	2-3	1-2
To Handle	8	4	2
To Recoat	5	3	2
Full Cure	14 Days	7 Days	4 Days

**THEORETICAL COVERAGE PER GALLON:**

- 1155 ft.<sup>2</sup> @ 1 mil DFT
- 230 ft.<sup>2</sup> @ 5 mils DFT
- 115 ft.<sup>2</sup> @ 10 mils DFT

\*Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

**SUGGESTED FILM BUILD (DFT):**

- Single Coat 5-8 mils in noncorrosive environment  
10-12 mils in corrosive environment
- Primer 3-8 mils
- Mid Coat 4-6 mils
- Immersion 10 - 12 mils



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**VOLUME SOLIDS (MIXED) VARIES WITH COLOR:**

72 ± 2%

**WEIGHT SOLIDS (MIXED) VARIES WITH COLOR:**

83 ± 2%

**WEIGHT PER GALLON (MIXED) VARIES WITH COLOR:**

11.8 ± 2 Lb. Avg.                      5.4 Kg

**FLASH POINT (TAG CLOSED CUP):**

Corlar<sup>®</sup> 2.1 ST<sup>™</sup> Bases > 100°F  
Corlar<sup>®</sup> VF-525<sup>™</sup> < 73°F

**PACKAGING:**

1 & 5 gallon containers

**SHIPPING WEIGHT (LBS.) APPROXIMATE:**

1 gallon container: 14 (base) / 11 (activator);  
5 gallon container: 63 (base) / 55 (activator)

**SHELF LIFE & STORAGE CONDITIONS:**

Store in a dry, well ventilated area, storage temperatures should be between -30°F (-34°C) and 120°F (48°C)

- Shelf Life 1 year minimum
- Corlar<sup>®</sup> 2.1 ST<sup>™</sup> may settle. Agitate before each use and intermittently while sitting in storage.

**SAFETY:**

Consult the Material Safety Data Sheet for this product prior to use.



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**APPLICATION INSTRUCTIONS**

**SURFACE PREPARATION:**

For atmospheric service, an SSPC-SP 6 Commercial Blast Cleaning is preferred for optimal performance. If not possible or practical, then Hand Tool Clean to an SSPC-SP 2 or Power Tool Clean to an SSPC-SP 3. For immersion service, an SSPC-SP 5 White Metal Blast is required.

**ACTIVATION:**

Add 1 part Corlar<sup>®</sup> VF-525<sup>™</sup> activator to 1 part Corlar<sup>®</sup> 2.1 ST<sup>™</sup> (25P<sup>™</sup>) base. Mix until thoroughly blended. You may begin painting immediately—there is no induction time.

**POT LIFE:**

8 hours @ 70°F to 90°F when reduced 15% by volume with DuPont Y-32035<sup>™</sup> or DuPont RT001P<sup>™</sup> Thinner.

**REDUCTION:**

2-5% of DuPont Y-32035<sup>™</sup> is required under normal conditions for airless spray. 7-10% with DuPont Y-32035<sup>™</sup> is the suggested level of thinning for conventional spray. For maximum pot life, reduce 15% by volume with DuPont Y-32035<sup>™</sup> or DuPont RT001P<sup>™</sup>. Use 10-15% DuPont T-8054<sup>™</sup> Thinner in hot or windy conditions for spray application. Reduce 10-15% with RT001P<sup>™</sup> Thinner when applying by roller or brush. If more reduction is required, consult your local DuPont Performance Coatings Representative. See Additional Comments #2

**APPLICATION THINNERS:**

Normal Conditions — DuPont Y-32035<sup>™</sup>  
Hot or Windy Conditions — DuPont T-8054<sup>™</sup> (spray)  
Brush or Roll — DuPont RT001P<sup>™</sup>

**CLEAN UP THINNERS:**

DuPont T-8054<sup>™</sup> or MEK

**APPLICATION CONDITIONS:**

Do not apply if material, substrate or ambient temperature is below 35°F (2°C) or above 100°F (38°C).

**APPLICATION EQUIPMENT:**

- Apply by brush, roll, or spray
- Manufacturers listed below are a guide. Others may be used. Changes in pressure and tip size may be required to achieve proper application.

**BRUSH & ROLL:**

- ½" - ¾" nap Wooster Pro/Doo-Z roller cover. Keep roll wet. Roll in one direction, rewet, then cross roll.
- 3"-4" Wooster China Bristle Brush

**CONVENTIONAL SPRAY:**

	<u>Binks</u>	<u>DeVilbiss</u>	<u>Sata</u>
Spray Gun:	2001	JGA	K3RP
Fluid Nozzle:	67SS	D (2.2)	1.1
Pot Pressure:			25
Atomizing Pressure			36
Air Cap:	67PB	64 HD	

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### HVLP SPRAY:

	<u>Binks</u>	<u>DeVilbiss</u>
Spray Gun:	Mach 1	GTi
Fluid Nozzle:	905 (2.3)	2.0
Air Cap:	905P	2000

### AIRLESS SPRAY:

Pump:	Graco Extreme 33:1
Airless Gun:	Graco 207945
Fluid Hose:	3/8" x 50' max.
Tips:	414-527
Minimum pressure to avoid fingering:	2400 psi min.

### ADDITIONAL COMMENTS:

1. USDA approved.
2. At 15% reduction, reduced maximum film thickness will be obtained.
3. If using D fluid nozzle, minimize reduction to avoid runs and sags.
4. Recoating of Corlar<sup>®</sup> 2.1 ST<sup>™</sup> should be done as soon as possible after dry to touch, a minimum of 3-5 hours at 70°F, up to overnight.

If you cannot recoat within 7 days up to 30 days, and you have not exposed the Corlar<sup>®</sup> 2.1 ST<sup>™</sup> to strong exterior sunlight and elevated temperatures over 100°F, you should water wash with a minimum of 1500 psi to remove any surface contamination.

If you cannot recoat before 30 days and have exposed the Corlar<sup>®</sup> 2.1 ST<sup>™</sup> surfaces to exterior sunlight and elevated temperatures over 100°F, you should either:

**Option 1:** Water wash the surface with 1500 psi and apply 1-2 mils DFT tack-mist coat Corlar<sup>®</sup> 2.1 ST<sup>™</sup> over the Corlar<sup>®</sup> 2.1 ST<sup>™</sup> painted surface and topcoat within 3-5 hours up to overnight, or

**Option 2:** Water wash the surface with 1500 psi and abrasively brush-blast to an SSPC-SP7 (sweep-blast) and topcoat within 3-5 hours up to overnight.

5. Do not roll for immersion applications. Spray apply only.
6. When applying over inorganic zinc primers, a mist coat is recommended for best results to minimize bubbling. Apply a mist coat and allow bubbles to break. Apply a full wet coat after mist coat.
7. Under certain high humidity and low temperature conditions, an amine blush is possible. This blush should be removed before proceeding with next coat by wiping surface with an alcohol-based solvent.
8. Epoxies chalk with extended exposure to sunlight. Lack of ventilation, incomplete mixing, miscatalyzation or the use of heaters that emit carbon dioxide and carbon monoxide during application and initial stages of curing may cause yellowing to occur.
9. For intermittent service temperatures above 250°F, do not topcoat.
10. Custom color bases are short filled to allow for colorant addition
  - 1LB25P – Light base (124 oz/gal)
  - 2MB25P – Medium base (120 oz/gal)
  - 3DB25P – Deep base (116 oz/gal)
  - 4NB25P – Neutral base (112 oz/gal)



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**ASTM INFORMATION**

Physical properties are averages. Properties for Corlar<sup>®</sup> 2.1 ST<sup>™</sup> are enhanced when used in conjunction with topcoats such as Imron<sup>®</sup> polyurethane or applied at higher film builds. The results listed below are obtained when applying Corlar<sup>®</sup> 2.1 ST<sup>™</sup> (gray) to 5.1 mils DFT. For specific system results, contact DuPont Technical Service at 1-800-3DUPONT.

◆ Paint System	Corlar <sup>®</sup> 2.1 ST <sup>™</sup>	
◆ Type/Color	Epoxy/Gray	
◆ DFT	5.1	
◆ Salt Fog (ASTM B117)	1000 hours	no rusting, no blisters
	2000 hours	no rusting, few #2 blisters at the scribe
	3000 hours	no rusting, no undercutting at the scribe, medium #2 blisters at the scribe
◆ Relative Humidity (ASTM D2247)	1000 hours	no rusting, no blisters
	2000 hours	no rusting, no blisters
	3000 hours	no rusting, no blisters
◆ Dry Heat (ASTM D2485)	250°F for 24 hours	no cracking, very slight loss of adhesion, slight discoloration
◆ Electrical Resistance (ASTM D2457):	28.3X10 <sup>17</sup>	
◆ Adhesion (ASTM D4521 A2):	1834 psi	adhesion failure between coating and substrate
◆ Cleveland Cond (ASTM D4585):	1000 hours	no rusting, no blisters, no delamination
◆ UV Con (ASTM D4587)*	3000 hours	Gloss before exposure 48.9 Gloss after exposure 1.5
	Evaluation	no rusting, no blisters, no delamination
◆ Impact (ASTM D2794):	3 inch pounds	
◆ Mandrel Bend (ASTM D522):	% Elongation - 0%	
◆ Taber Abrasion (ASTM D4060):	weight loss in grams - .07	

\*8 hr UV @ 50°C, 4 hr condensation @ 40°C, gloss readings @ 60°