



## CAL551-220: HYBRID NOVOLAC SURFACE COAT

### Hybrid Novolac Industrial Maintenance Coating

#### PRODUCT PROFILE

##### DESCRIPTION

CAL551-220 Hybrid Novolac Industrial Maintenance Coating for Metal and Concrete Substrates.

CAL551-220 is an economical high cross-link density ceramic-filled novolac hybrid coating that is designed to provide chemical resistance and good wear and abrasion resistance..

CAL551-220 has a high solids content to give it good wear resistance and flexible enough to enhance impact resistance. It is an excellent choice for Battery Room floors and similar applications where exposure to sulfuric acid concentrations can be expected.

CAL551-220 can be applied in new and existing Battery plants without service interference.

##### TYPICAL APPLICATIONS

- Battery Rooms
- Clean Room
- Floors
- stacks
- Flue-gas Scrubbers
- Stainless Mist Eliminators
- Secondary Containment
- Structures

#### TECHNICAL DATA

##### PHYSICAL PROPERTIES

Specific Gravity	Resin: 1.56; Hardener: 1.06
Weight	9 pounds/gallon
Flash Point	> 250° F (121° C)
Volatile Organic Compounds (VOC)	0 grams/liter excluding H <sub>2</sub> O
Coefficient of Thermal Expansion (.00001/per degree F.)	1.4
Color	Light Gray 4 - 7
Recommended Coverage	2 coats x 8 mils
Coverage per Gallon (theoretical)	147 square feet per 10 mils of thickness
Container Size	1 & 2 gallon
Solids Content	92%

##### CHEMICAL RESISTANCE

Ammonium Hydroxide	Hydrofluoric Acid	Salts
Aromatic & Aliphatic Solvents	up to 20%	Sodium Hydroxide
Black Liquor	Hydrogen Sulfide	Sulfides
Butyl Acetate	Mineral Acids	Sulfuric Acid
Butyl Carbitol	Nitric Acid up to 10%	up to 98%
Chlorides	Phosphates	1,1,1-Trichloroethane
Hydrochloric Acid	Sodium Hydroxide	White Liquor
up to 100%		
38% hydrogen chloride content		



## APPLICATION PREPARATION

SERVICE TEMPERATURE	EXPOSURE	MAXIMUM RECOMMENDED TEMPERATURE						
	Dry Service	300° F (149° C)						
	Spills, Splashes & Fumes	250° F (121° C)						
	Immersion Service	200° F (93.5° C)						
SURFACE PREPARATION	<p><b>Note:</b> For optimal coating performance, take considerable care with surface preparation.</p> <p><b>Metal:</b> Remove all oil, grease or scale from the surface, then blast with sharp sand or grit to finish. Use a non-spherical blast medium to give a 2 - 3 mil (50 - 75 micron) profile and to achieve the following surface preparation standards or their equivalents:</p> <table><tbody><tr><td>Non-chemical Service</td><td>SSPC-SP 6 Commercial Blast (NACE 3)</td></tr><tr><td>Intermittent Splash or Wear</td><td>SSPC-SP 10 Near White Metal Blast (NACE 2)</td></tr><tr><td>Immersion or Abrasive Service</td><td>SSPC-SP 5 White Metal Blast (NACE 1)</td></tr></tbody></table> <p><b>Concrete:</b> Concrete should be aged at least 28 days before coating and the surface should be clean, dry and free of form-release agents, silicone water proofers and/or curing agents.</p> <p>Sand blasting or scarification is recommended. Wash down old concrete to remove all residues and neutralize the pH before blasting or scarifying.</p> <p>These products are normally self-priming. However, under certain conditions such as old, porous or poorly finished concrete, CAL551-102 primer/sealer is recommended to avoid bubbling caused by outgassing. If these conditions exist, call Calicorp for assistance as two coats of CAL551-101 may be indicated on air entrained concrete.</p>		Non-chemical Service	SSPC-SP 6 Commercial Blast (NACE 3)	Intermittent Splash or Wear	SSPC-SP 10 Near White Metal Blast (NACE 2)	Immersion or Abrasive Service	SSPC-SP 5 White Metal Blast (NACE 1)
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MIXING PROCEDURES	<p><b>Note:</b> Do not mix partial kits.</p> <ol style="list-style-type: none"><li>1. Thoroughly mix the resin before adding the hardener: CAL551-220 is 100% solids and contains materials with high specific gravity.</li><li>2. Empty the entire amount of hardener into the resin container.</li><li>3. Mix thoroughly—until uniform in consistency—then continue to mix for an additional 2 - 3 minutes. Pay special attention to the bottom and sides of the container to insure complete mixing. Due to the high viscosity of this product, a mechanical mixer is preferred. Use at low speed and keep the mixing blade down in the product to avoid entrapping air. If mixing by hand, use a square-cornered, flat implement, such as a standard paint stirring stick.</li></ol>							
THINNING	<p>If thinning is necessary, especially at temperatures lower than 60° F (16° C), add up to 5 fl oz of MEK per gallon. (The addition of 5 fl. Oz of MEK will reduce the solids content to 96%.) Read the Material Safety Data Sheet for MEK (flammable liquid) before using it.</p>							



POT LIFE

AMBIENT TEMPERATURE

TIME

40° F(4° C)	7 hours, 30 minutes
75° F(24° C)	50 minutes
92° F(33° C)	30 minutes

**Do not** keep the blended coating in the original container: exotherm – heat created during the curing process – can considerably shorten the pot life. Pour the coating into a rolling tray or large aluminum basting pan. Try to keep the depth of the coating in the tray below 3/8".

APPLICATION PROCEDURE

CAUTIONS

1. If the ambient temperature is 85° F (29° C) or higher, pot life may be as short as 20 minutes. Have the working surfaces ready, and mix no more than one gallon of the coating at a time. To increase the pot life under these conditions, put the tray or pan on ice or in ice water. **Do not** get water or ice in the tray with the coating.
2. The substrate temperature must be at least 5° F (3° C) above dew point—the temperature at which moisture will condense on the surface of the substrate—during all blasting and coating procedures. To calculate the dew point, consult the chart below.

Example: if the ambient air temperature is 70° F—top row below—and the relative humidity is 65%—left column—the dew point is 57° F. Under these conditions, the substrate temperature would need to be at least 62° F before proceeding with blasting and coating procedures.

%RH	Ambient Air Temperature, °F(°C)							
	50 (10)	60 (16)	70 (21)	80 (27)	90 (32)	100 (38)	110 (43)	
90	47 (9)	(14)	67 (19)	77 (25)	87 (31)	97 (36)	107 (42)	
85	45 (7)	55 (13)	65 (18)	75 (24)	84 (29)	95 (35)	104 (40)	
80	44 (7)	54 (12)	63 (17)	73 (23)	82 (28)	93 (34)	102 (39)	
75	42 (6)	52 (11)	62 (17)	71 (22)	80 (27)	91 (33)	100 (38)	
70	40 (4)	50 (10)	60 (16)	69 (21)	78 (26)	88 (31)	98 (37)	
65	38 (3)	48 (9)	57 (14)	67 (19)	76 (24)	86 (30)	95 (35)	
60	36 (2)	46 (8)	55 (13)	65 (18)	74 (23)	83 (28)	92 (33)	
55	34 (1)	43 (6)	53 (12)	62 (17)	71 (22)	80 (27)	90 (32)	
50	31 (-.5)	41 (5)	50 (10)	59 (15)	69 (21)	78 (26)	87 (31)	

APPLICATION

CAL551-220 may be sprayed, brushed, rolled or applied by squeegee. Use a medium bristle brush or a non-shed roller—3/8" nap or shorter—designed for use with epoxies. To spray CAL551-220, use an airless system—such as those available from Binks, DeVilbiss or Graco—with the following specifications a guideline:

Pump Ratio	40:1 or greater
Minimum Output	4000 psi
In-Line Filter	30 mesh
Tip Size Product Hose	.022 - .035 inch
Minimum – Optimum I.D.	.375 - .5 inch
Maximum Length	60 feet



<b>MULTIPLE COATS</b>	<p>Second and subsequent coats must be applied <b>before the previous coat has completely cross-linked</b>. Apply additional coats when the previous coat will still string out (pigtail) and hold its shape when touched. If only slight tack remains, allow the product to cure, then brush blast before applying the next coat. Sanding or wire brushing may abrade small areas.</p> <p>The same requirement applies when overlapping the seams of adjacent coating sections to create a continuous protective film. If the coating surface to be overlapped at the seam cannot be brush blasted, use a non-impact means such as power brushing or sanding to create a mechanical profile.</p>						
<b>CURE TIME</b> (@ 70° F/21° C)	<table border="0"> <tr> <td style="padding-right: 20px;">Re-coat Window</td> <td>1 to 3 hours</td> </tr> <tr> <td>Light Loading</td> <td>12 hours</td> </tr> <tr> <td>Full or Chemical Service</td> <td>3 days</td> </tr> </table>	Re-coat Window	1 to 3 hours	Light Loading	12 hours	Full or Chemical Service	3 days
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<b>SPEED CURING</b>	<p>The cure time varies with temperature variations. If speed curing is desired, cure time can be reduced and product performance enhanced by artificially applying heat during the curing process. A temperature of 150° F (66° C) for 2 hours is recommended for speed curing before placing the coating into full service.</p>						
<b>CLEAN-UP</b>	<p>Use a mixture of MIBK and Xylene (50/50) or MEK for clean-up. Read the Material Safety Data Sheets for any of these products (flammable liquids) before using them. Skin can be cleaned with soap and water. Be sure to lather up thoroughly before using water to rinse.</p>						

## MATERIAL SAFETY DATA

<b>HAZARDOUS INGREDIENTS</b>	<table border="0"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;">RESIN</th> <th style="text-align: center; border-bottom: 1px solid black;">HARDENER</th> </tr> </thead> <tbody> <tr> <td style="padding-right: 20px;">Novolac Resin CAS #28064-14-4 10-40%</td> <td>Modified Polyamine CAS # (Trade Secret), 90% or less no established limit, irritant</td> </tr> <tr> <td style="padding-right: 20px;">Water CAS 7732-18-5 11-30%</td> <td>Propanamine CAS #919-30-4 30% or less</td> </tr> </tbody> </table>	RESIN	HARDENER	Novolac Resin CAS #28064-14-4 10-40%	Modified Polyamine CAS # (Trade Secret), 90% or less no established limit, irritant	Water CAS 7732-18-5 11-30%	Propanamine CAS #919-30-4 30% or less															
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**FIRE AND EXPLOSION DATA**

	RESIN	HARDENER
Flash Point	> 300o F (149o C)	> 200o F (93o C)
Extinguishing Media	Carbon Dioxide, foam, dry chemical	
Special Procedures	Use a self-contained breathing apparatus.	

**NOTE: decomposition and combustion products may be toxic.**

**HEALTH AND HAZARD INFORMATION**

	RESIN	HARDENER
Inhalation	LC <sub>50</sub> (rabbits): 6000 mg/kg	LC <sub>50</sub> : possible respiratory irritant if atomized
Skin Contact	LD <sub>50</sub> (rabbits): 4000 mg/kg	Possible irritant dermatitis in extreme
Eye Contact	Irritating	Severe Irritant
Ingestion	LD <sub>50</sub> (rabbits): 4000 mg/kg	LD <sub>50</sub> (rats): 3000 mg/kg
Acute Overexposure	Irritation possible sensitization	Irritation possible sensitization nausea
Chronic Overexposure	Skin sensitization, dermatitis	Skin sensitization, may be corrosive

**EMERGENCY FIRST AID PROCEDURES**

	RESIN	HARDENER
Ingestion	If large amounts are ingested, induce vomiting if conscious.	Call physician immediately. Give generous amounts of water if conscious. <b>Do not</b> induce vomiting.
Inhalation	Remove to fresh air. Give oxygen if breathing is difficult.	
Eyes	Immediately flush eyes with water for 15 minutes. Call physician.	
Skin	Promptly wash with mild soap and water.	

**REACTIVITY DATA**

	RESIN	HARDENER
Conditions contributing to instability	Stable	<b>Do not</b> heat in bulk as dangerous decomposition may occur, liberating toxic fumes.
Hazardous Decomposition Products	Carbon Monoxide, Carbon Dioxide, Phenolics	Carbon Monoxide, Carbon Dioxide, Phenolic Nitrogen Oxides and Compounds
Conditions Contributing to Hazardous Polymerization	Will not occur	Heating in bulk
Incompatibility	Strong oxidizers, strong acids and bases	



		RESIN	HARDENER
<b>DISPOSAL OR SPILL PROCEDURES</b>	Aquatic Toxicity	Not available at this time	Not available at this time
	Steps to be taken if material is spilled	Shovel into closeable container for disposal.	Absorb into sand or other absorbent material. Shovel into closeable container and dispose of in professional manner.
	Waste Disposal Method	Not considered hazardous under RCRA (40CFR 261) Dispose according to state, federal and local regulations.	
<b>SPECIAL PROTECTION MEASURES</b>		<b>BOTH</b>	
	Ventilation Requirements	Good general mechanical ventilation and local exhaust	
	Specific Personal Protective Equipment	Organic chemical cartridge respirator if needed in non-vented area	
	Eyes	Splash-proof chemical goggles	
	Gloves	Impervious gloves	
Other	Appropriate equipment to prevent probability of skin and eye contact.		
<b>SPECIAL PRECAUTIONS</b>	Can cause irritation; wear protective skin and eye equipment. <b>Do not</b> heat in bulk; dangerous decomposition may occur, liberating toxic fumes.		
<b>ORDERING INFORMATION</b>	For additional information, prices or to place an order, contact Calicorp or a Calicorp representative.		

This product is not regulated by the DOT and is not considered a hazardous waste under the RCRA.

MSDS information provided by the manufacturer.  
Please call Calicorp for additional information regarding this product or its application

All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied:

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for the intended use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.