



CAL551-201: NOVOLAC TOPCOAT

Industrial Maintenance Coating

PRODUCT PROFILE

DESCRIPTION

CAL551-201 100% Solids Industrial Maintenance Coating for Metal, Concrete and Similar Substrates.

CAL551-201 is an economical Novolac coating, yet it's durable enough to handle slurry applications. CAL551-201 has a high ceramic content to allow its use as a high performance top coat in Battery Room floor and similar applications where sulfuric acid concentrations can rise to 93%. CAL551-201 is a non-solvent based 100% solids floor covering that can be applied in new and existing Battery plants without service interference.

CAL551-201, when applied over a CAL551-001 undercoat, and with horizontal spread limited by a properly sealed spill containment barrier, provides for sulfuric acid spill control that will meet the requirements of the Uniform Fire Code (UFC), Article 64. When augmented with replaceable spill absorbing and neutralization pads (Bat-Mats), a total lead-acid spill control plan can be obtained.

TECHNICAL DATA

PHYSICAL PROPERTIES

Specific Gravity	Resin: 1.66	Hardener: 0.97
Weight	11.54 pounds/gallon	
Solids by volume	100%	
Flash Point	> 250° F (121° C)	
Volatile Organic Compounds (VOC)	0 grams/liter	
Coefficient of Thermal Expansion (.00001/per degree F.)	14.0	
Color	Gray	
Recommended Coverage	15 – 30 mils	
Coverage per Gallon (theoretical)	160 square feet per 10 mils of thickness	
Container Size	Pint, Quart & Gallon	



CHEMICAL RESISTANCE

<p>Acetic Acid up to 10% Ammonium Hydroxide* Aromatic & Aliphatic Solvents Black Liquor Butyl Acetate Butyl Carbitol (Most) Chlorides Chromic Acid up to 15%</p>	<p>Hydrochloric Acid up to 100% (38% hydrogen chloride content) Hydrogen Sulfide Isopropyl Alcohol Mineral Acids Nitric Acid up to 35% (Mild) Organic Acids (Most) Phosphates Phosphoric Acid up to 85%</p>	<p>Methyl Ethyl Ketone Potassium Hydroxide* Sodium Hydroxide* (Most) Sulfides Sulfuric Acid up to 98% 1,1,1-Trichloroethane Urea Solutions White Liquor Ethanol *Ambient temperature only</p>
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SERVICE TEMPERATURE

EXPOSURE

MAXIMUM RECOMMENDED TEMPERATURE

<p>Dry Service Spills, Splashes & Fumes Immersion Service</p>	<p>280° F (138° C) 200° F (93.5° C) 200° F (93.5° C)</p>
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APPLICATION PROCEDURES

SURFACE PREPARATION

Note: For optimal coating performance, take considerable care with surface preparation.

Metal: 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:

Concrete: 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. Sand blast, scarify or etch the surface with muriatic acid (15% HCL, not to exceed 20%), using one gallon per 60 - 75 square feet. Wash down old concrete to remove all residues and neutralize the pH before blasting or scarifying. For severe service, a second wash is recommended.

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)

These products are normally self-priming. However, under certain conditions such as old, porous or poorly finished concrete, a sealer/primer is recommended to avoid bubbling caused by outgassing. If these conditions exist, call Calicorp for assistance.

**MIXING
PROCEDURES**

Note: Do not mix partial kits.

Thoroughly mix the resin before adding the hardener: **CAL551-201** is 100% solids and contains materials with high specific gravity.

Empty the entire amount of hardener into the resin container.

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.

THINNING

If thinning is necessary, especially at temperatures lower than 60° F (16° C), add 4 to 6 fl oz of MEK to the resin and mix thoroughly before adding the hardener. **Note: Do not** exceed 10% solvent by volume. Read the Material Safety Data Sheet for MEK (flammable liquid) before using it.

POT LIFE**AMBIENT TEMPERATURE****TIME**

40° F (4° C)

6 hours

75° F (24° C)

42 minutes

92° F (33° C)

30 minutes

Do not keep the blended coatings in the original container: exothermics – 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".

CAUTIONS

If the ambient temperature is 85° F (29° C) or higher, pot life may be as short at 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.

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

CAL551-201 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 CAL551-201, use an airless system—such as those available from Binks, DeVilbiss or Graco—with the following specifications

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

MULTIPLE COATS

Second and subsequent coats must be applied **before the previous coat has completely cross-linked**. 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.

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.

CURE TIME (@ 70° F/21° C)

Re-coat Window	1 hour, 50 minutes
Light Loading	30 hours
Immersion (Aqueous) Service	72 hours
Full or Chemical Service	7 days

SPEED CURING

The cure time can be reduced and product performance enhanced by applying heat during the curing process of the final coat: 150° F (66° C) for 3 hours is recommended before placing the coating into full service.



CLEAN-UP

Use a mixture of MIBK and Butyl acetate (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 denatured alcohol, preferably ethanol.

MATERIAL SAFETY DATA CAL551-220

HAZARDOUS INGREDIENTS

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

PHYSICAL DATA

	RESIN	HARDNER
Specific Gravity	1.66	0.97
% Volatiles by volume	Nil	< 0.5%
Appearance/Odor	Light Gray	Brown/Slight sweet odor
Melting Point	< 0 degrees F (-18° C)	< 0 degrees F (-18° C)
Solubility in Water (% by weight)	Negligible	Negligible
pH	ca 5	ca 10

FIRE AND EXPLOSION DATA

	RESIN	HARDNER
Flash Point	> 300° F (149° C)	> 200° F (93° 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	HARDNER
Inhalation	LC50 (rabbits): 6000 mg/kg	LC50: possible respiratory irritant
Skin Contact	LD50 (rabbits): 4000 mg/kg	Possible irritant, dermatitis in extreme
Eye Contact	Irritating	Severe irritant
Ingestion	LD50 (rabbits): 4000 mg/kg	LD50 (rats): 3000 mg/kg



	Acute Overexposure	Irritation, possible sensitization	Irritation, possible sensitization, nausea
	Chronic Overexposure	Skin sensitization, dermatitis	Skin sensitization, nausea, may be corrosive
EMERGENCY FIRST AID PROCEDURES	Ingestion	RESIN If large amounts are ingested, induce vomiting if conscious.	HARDENER Call physician immediately. Give generous amounts of water if conscious. Do not 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	Conditions contributing to instability	RESIN Stable	HARDENER Do not 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 Incompatibility	Will not occur Strong oxidizers, strong acids and bases	Heating in bulk
DISPOSAL OR SPILL PROCEDURES	Aquatic Toxicity	RESIN Not available at this time	HARDENER 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.	
SPECIAL PROTECTION MEASURES	Ventilation Requirements	BOTH 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.
SPECIAL PRECAUTIONS	Can cause irritation; wear protective skin and eye equipment. Do not heat in bulk; dangerous decomposition may occur, liberating toxic fumes.	
ORDERING INFORMATION	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

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