

Si-COAT®: TECHNOLOGY THAT STICKS™



FOUNDED ON A VISION

OUTPERFORMING THE



TECHNOLOGY THAT STICKS

Throughout this brochure you will find coating products that have been engineered to provide long service and protection for a wide range of surfaces in severe environments. Their standard setting performance can be supported by numerous testimonials and documented long term test results.

How **Si-COAT** achieved its unique, leadership position is a story of dedication and vision that borders on obsession.

Few scientists or engineers would argue with the statement that the world economy spends billions of dollars maintaining deteriorating infrastructures. Buildings, bridges, towers, tanks, ships; they all begin their slow decline the moment they are introduced into service.

These same experts will also agree that the technology exists to significantly reduce or slow down this deterioration along with the caveat "at what cost?"





CSL was founded back in 1984, by engineers/entrepreneurs who were driven by the inspiration that environmentally responsible coating technology can be developed that successfully passes the 'cost effective' equation.

That original inspiration has led to the introduction of **Si-COAT** and the innovative niche application of technology that maximizes the unparalleled resistance of organosiloxane against most chemicals, ultraviolet light, ozone, salt and degradation due to weathering and abrasion.

Si-COAT is a revolutionary line of one-component, room temperature vulcanizing (RTV), elastomeric organosiloxane coatings in a proprietary (patented and patent pending) formulation that exploits the inherent characteristics of quartz to offer unique, long term advantages in a wide variety of applications:

**SECONDARY CONTAINMENT
CONCRETE PROTECTION
ANTI-CORROSION**

**FOULING RELEASE
HIGH VOLTAGE FLASHOVER PREVENTION
ANIMAL INDUCED POWER OUTAGE PREVENTION**

The effectiveness of **Si-COAT** compounds has been proven in 15 years of tests and service.

Equally important in this environmentally conscious world, because the basic chemistry of **Si-COAT** and glass are similar, fully cured **Si-COAT** is as inert as glass. VOC free formulations can also be specified.

By focusing on cost-effective coating technology that protects the environment while protecting host surfaces, **Si-COAT** provides users with safe, world class, lasting protection that reduces maintenance and frees resources for more progressive ambitions.

TECHNOLOGY THAT STICKS

Secondary containment membrane for chemical spills

Resistant to immersion in most industrial chemicals

Highly puncture-resistant due to strong, elastomeric properties

Long-term weathering (UV, ozone and moisture) will never degrade the membrane

Eliminates need for overburden

Seals perfectly and simply to all protrusion surfaces using Si-COAT 549

Chemical spills in tank farms due to ruptured tank walls or leaking pipes and valves cost you money. Expense is incurred not only from lost material which seeps into the ground or porous concrete containment structures, but also from environmental remediation. With increasingly stricter environmental regulations, when chemicals seep into the ground, the soil must be fully remediated – a tremendously expensive effort.

AVOID THE EXPENSE OF MATERIAL LOSSES AND ENVIRONMENTAL REMEDIATION WITH Si-COAT 549 REINFORCED Si-COAT MEMBRANE (RSM) SECONDARY CHEMICAL CONTAINMENT SYSTEM

Concrete berms are expensive to build. Even then, concrete does not stop the flow of chemicals into the ground.

Si-COAT 549 RSM creates a strong barrier impenetrable to most industrial chemicals.

Installation is inexpensive because instead of constructing concrete berms, earthen berms are formed around the chemical storage area. Horizontal soil surfaces are compacted and the membrane is laid down over the berm and horizontal surfaces to the edge of the tank and up its side. Loose edges of membrane along the perimeter of the installation are buried in backfilled trenches for a clean finish.

The result is a secondary containment system that allows nearly all spilled chemicals to be recovered and one that saves the expensive burden of remediating contaminated soil.

Because **Si-COAT 549** is a pure organosiloxane product, it displays superior resistance to UV light and unsurpassed stability in extreme temperatures. Thus, no overburden is required, allowing ease of membrane inspection and spill clean-up.

It will not warp, contract, become embrittled, or crack. Hence, the membrane's life span extends well beyond the life of any competitive product.

As well, the backing of the membrane displays phenomenal tear resistance and tensile strength. The finished product is slip resistant even when wet and will withstand the abuse of foot traffic – even over rocky soil.

From acids and bases to crude oil to diesel fuel and engine oils, trust **Si-COAT 549 RSM** to resolve your secondary chemical containment requirements.

For a technical and/or case history presentation on **Si-COAT 549 RSM**, please contact CSL.



SECONDARY CHEMICAL CONTAINMENT



Typical Properties

Uncured

Type	Si-COAT, one-part RTV
Appearance	thick paint
Solids Content	76% by wt. (68% by vol.)
Specific Gravity	1.2
Viscosity	6,500 ± 1,500 cP
Sag (Leneta Anti-Sag Meter)	35±10
Application Temperature Range	>0 to 50°C (>0 to 120°F)
Application Rate (760µ or 30 mil thickness)	0.88m ² /L (36 ft ² /US gal)
Cure System	neutral, moisture cure
Skin-over Time (at Standard Conditions*)	40 min.
Cure Time (at Standard Conditions*)	24 hr.
Flash Point	42°C (107°F)
Water Vapor Pressure	2.9 perms

Cured

At Standard Conditions* for 7 Days

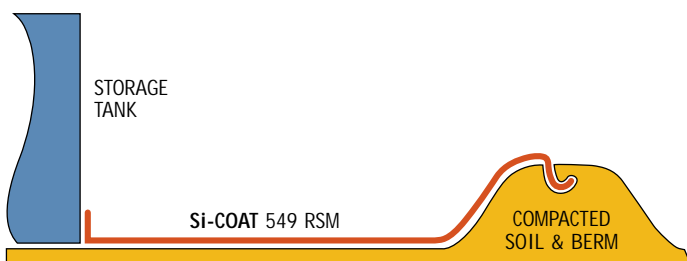
Durometer Hardness (ASTM D2240, Shore A)	35 points
Tensile Strength (ASTM D412)	18 kg/cm ² (250 psi)
Elongation at Break (ASTM D412)	150%
Tear Resistance (ASTM D624, Die B)	6 kN/m (34 pli)
Temperature Stability	-57°C to 160°C (-70°F to 320°F)
Salt Fog Exposure (2550 hours, 60°C or 140°F)	no deterioration
Thermal Conductivity	5.0 x 10 ⁻⁴ cal/sec.cm ² .(°C/cm)
UV Accelerated Weathering Test (ASTM G53 Series, 5000 hours)	no degradation

Si-COAT 549 RSM

Grab Tensile (ASTM D4632)	690 N (155.3 lbf)
Mullen Burst (ASTM D3786)	2.1 MPa (305 psi)
Tear Resistance (ASTM D3786)	300 N (67.5 lbf)
Elongation at Break (ASTM D4632)	70 to 100%
Temperature Stability	-57°C to 160°C (-70°F to 320°F)
UV Accelerated Weathering Test (ASTM G53 Series, 5000 hours)	no degradation

* Standard Conditions are 25°C (77°F) and 50% relative humidity.

BASIC INSTALLATION CONCEPT



PACKAGING

Si-COAT 549 RSM is available in a standard panel size 4.6 m x 15.2 m (15 ft x 50 ft). Each standard panel weighs 181 kg (395 lb).

Si-COAT 549 is available in 3.8L (1 US gallon) cans, 19L (5 US gallon) metal pails and 189L (50 US gallon) drums.

STORAGE

Si-COAT 549, when stored in original unopened container at or below 32°C (90°F), has a shelf life of 12 months from date of shipment.

SAFETY PRECAUTIONS

Adequate ventilation should be provided. On direct contact, uncured coating may irritate eyes. Flush well with water and call a physician. See Material Safety Data Sheet for more information.

Si-COAT 549 RSM MEETS THE FOLLOWING RECOMMENDATIONS FOR USE¹

(SEE THE Si-COAT CHEMICAL RESISTANCE GUIDE FOR A FULL LISTING)

Acids	Ammonium Sulfate	Dibenzyl Phthalate
Acetic - 10%	Calcium Chloride	Diethyl Phthalate
Acetic - 20%	Calcium	Dimethyl Phthalate
Acetic - 50%	Hypochlorite - 15%	Diethyl Phthalate
Acetic - Glacial	Copper Fluoroborate	Ethyl Acetate
Benzoic - Saturated	Copper Plating Cyanide	Ethyl Alcohol
Boric - Saturated	Ferric Chloride	Ethyl Glycol
Chromic - 10%	Ferric Sulfate	Ether
Chromic - 15%	Nickel Chloride	Ethylene Glycol
Citric - 50%	Potassium Hydroxide	Formaldehyde
Fatty	up to 40%	Freon-11
Fluoboric	Silver Nitrate	Gasoline
Formic - 10%	Sodium Benzoate	Glycol Ethers
Hydrochloric - 10%	Sodium Bicarbonate	Glycol Ether Esters
Hydrochloric - 27%	Sodium Carbonate	Hydrogen Peroxide - 30%
Hydrochloric - 37%	Sodium Chloride	Water
Lactic - 20%	Sodium Glutamate	Isopropyl
Maleic - 30%	Sodium Hydroxide	Isopropyl Alcohol
Maleic - 40%	up to 50%	Kerosene
Maleic - 50%	Sodium Hypochlorite	Lanolin
Monochloroacetic - 5%	up to 25%	Linseed Oil
Nitric - 10%	Sodium Sulfate	Methanol
Nitric - 20%	Sodium Sulfide	Methylene Chloride
Nitric - 30%	Trisodium Phosphate	Methyl Ethyl Ketone
Oleic	Zinc Chloride	Mineral Spirits
Oxalic	Zinc Nitrate	Methyl Alcohol
Perchloric		Naptha
Phosphoric	Solvents & Other Chemicals	Oils - Cutting
Salicylic	Acetone	Oils - Sour Crude
Stearic	Acrylonitrile	Perchloroethylene
Sulfamic - 25%	Amyl Acetate	Petroleum
Sulfuric - 20%	Benzene	Phenyl Alcohol
Sulfuric - 37%	Brake Fluid (Auto)	Tall Oil
Sulfuric - 50%	Butyl Acetate	Tire Exudates
Sulfuric - 70%	Butyl Alcohol	Toluene
Tannic	Butyl Lactate	Toluol
Tartaric	Carbon Tetrachloride	Trichloroethylene
Alkalies & Salts	Cellosolve Acetate	Trichloroethane
Aluminum Chloride	Chlorobenzene	Triethanolamine
Ammonium Chloride	Cumene	Triethylene Glycol
Ammonium	Cyclohexane	Tung Oil
Hydroxide - 20%	Cyclohexanone	Turpentine
Ammonium Nitrate	Cyclohexanol	Urea
Ammonium Persulfate	Diacetone Alcohol	Xylene

¹ Suitable for at least 100 hours of containment and for areas with frequent spills and/or poor drainage.

Power outages due to dirty insulator flashover are an expensive nuisance to industries that require an uninterrupted power source. Flashovers cause hours of machine downtime and unnecessary expenses.

PREVENT AND ELIMINATE THE EXPENSE OF INSULATOR FLASHOVERS WITH Si-COAT 570 HVIC

Insulator flashover results from contamination that settles on the insulator surface. When combined with environmental moisture, leakage current develops which can lead to flashover.

Older methods to prevent flashover such as frequent water washing or greasing are time consuming.

Instead, coat your insulators with **Si-COAT 570 HVIC**; the coating which has proven itself to give the best flashover protection for years upon years – even in the most adverse of conditions.

Si-COAT 570 HVIC is a one-part, room temperature vulcanizing (RTV) organosiloxane coating. It's unique and patented formulation provides a highly hydrophobic surface for its entire life. Because it is a **Si-COAT** product, it is not affected by UV light, corona discharge, chemical contaminants, salt, extreme temperatures or corrosive environments.

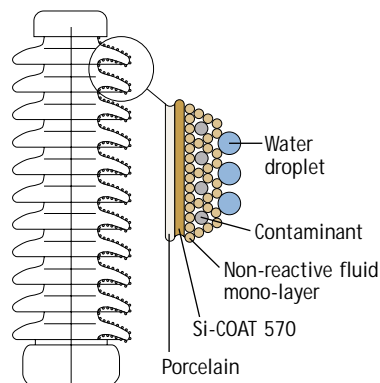
Si-COAT 570 HVIC is engineered with exact amounts of non-reactive fluids and ingredients with precise particle sizes for optimum performance and reliability.

The benefits are twofold: Superior retention of hydrophobicity, ensuring a tremendously long life span, and a more robust self-cooling mechanism to protect the surface from physical damage in the case of dry band arcing.

No heat is required to cure **Si-COAT 570**. This means the free fluid in the coating does not react during curing. Thus, more free fluid is available – dramatically enhancing coating performance.

Si-COAT 570 HVIC applies very smoothly and easily. This translates into a material saving and enhanced performance characteristics.

Choose **Si-COAT 570 HVIC** for the world's most reliable protection against flashover. Also available in a VOC free formulation.



For a technical and/or case history presentation on **Si-COAT 570 HVIC**, please contact CSL.

Non-reactive fluid from the coating micro-encapsulates contaminants to disrupt the continuous path which can lead to flashover. Rain and dew formation washes away contaminants under ordinary circumstances. Under heavy pollution conditions, periodic water washing may be required. Frequency of water washing will depend on severity of contamination.

CURRENT LEAKAGE PREVENTION

Virtually maintenance-free leakage current prevention for porcelain, glass, polymer and composite insulators

One-part, room temperature vulcanizing (RTV), elastomeric organosiloxane rubber

Simple application – brush or spray

Unparalleled resistance against UV, ozone, chemicals and normal weathering provides unsurpassed longevity

Proven effective in conditions from salt-fog to cement dust



Typical Properties

Uncured

Type	Si-COAT, one-part RTV
Appearance	thick paint
Solids Content	70% by wt.
Specific Gravity	1.13
Viscosity	1,000 ± 300 cP
Application Temperature Range	>0 to 50°C (>32 to 120°F)
Coverage (380μ or 15 mil thickness)	1.6 m ² /L (67 ft ² /US gal)
Cure System	neutral, moisture cure
Skin-over Time (at Standard Conditions*)	15 min.
Tack Free Time (at Standard Conditions*)	30 min.
Flash Point	38°C (100°F)

Cured

	At Standard Conditions* for 7 Days
Dielectric Strength (ASTM D149)	350 V/mil
Volume Resistivity (ASTM D257)	3.7 x 10 ¹⁵ ohm.cm
Dissipation Factor (ASTM D150)	at 100 Hz: 0.01 at 100 kHz: 0.0057
Tracking Wheel Withstand	1000 hr.
Useable Temperature Range	-40 to 250°C (-40 to 480°F)
Thermal Expansion Coefficient	0.24 x 10 ⁻⁴ cm/cm.°C
Thermal Conductivity	7.0 x 10 ⁻⁴ cal/sec.cm ² .(°C/cm)
Loss Tangent at 60 Hz	5.5 x 10 ⁻³
Arc Resistance	track: 180 s burn out: 450 s
Water Repellency Angle	96 deg.
UV Accelerated Weathering (ASTM G53 Series, 5000 hours)	no degradation

* Standard Conditions are 25°C (77°F) and 50% relative humidity

TYPICAL APPLICATIONS

Si-COAT 570 is a high voltage insulator coating which performs by virtue of its highly hydrophobic water repellent nature. It provides a virtually maintenance-free system to prevent leakage current, tracking and flashover on porcelain, glass, EPDM and liquid silicone rubber insulators.

Because of its high degree of water repellency, contaminants cannot film out over the surface of Si-COAT 570, eliminating or reducing:

- Regular insulator cleaning
- Periodic reapplication of grease
- Replacement of components damaged by flashover

Insulator surfaces must be cleaned by high pressure water wash, crushed corn cob abrasive or by solvent for degreasing. All surfaces must be completely dry prior to application.

Coating is easily accomplished by brush, spray or dipping to a final coating thickness of 380μ (15 mil).

PACKAGING

Si-COAT 570 is available in 3.8L (1 US gallon) cans, 19L (5 US gallon) metal pails and 189L (50 US gallon) drums.

STORAGE

Si-COAT 570, when stored in original unopened container at or below 32°C (90°F), has a shelf life of 12 months from date of shipment.

SAFETY PRECAUTIONS

Adequate ventilation should be provided. On direct contact, uncured coating may irritate eyes. Flush well with water and call a physician. See Material Safety Data Sheet for more information.

Quantity Estimate at Recommended Thickness of 380μ (15 mil), in ounces

Insulator	15 kV	25 kV	34.5 kV	45 kV	69 kV	115 kV	138 kV	161 kV	230 kV	345 kV	500kV	765 kV
Pin Type	2.8	4.7	6.4	8.5	11	19	23	—	—	—	—	—
Line Post	2.7	4.4	6.1	8	12	20	25	29	41	61	—	—
Buss Support	2.7	4.4	6.1	8	12	20	25	29	41	61	88	136
Lightning Arrester	3.6	5.3	7.5	10	15	25	30	35	50	75	108	165
Oil Circuit Breaker Bushing	4.8	8	11	14	19	32	44	52	74	111	—	—
Transformer Bushing	4.8	8	11	14	19	32	44	52	74	111	160	245
Current Transformer	—	—	—	—	15	25	30	35	50	75	108	165
Air Break Switch (per insulator)	2.7	4.7	6.4	8.5	13	22	26	30	43	65	94	144
4-1/8" Suspension/Deadend	2.1	—	—	—	—	—	—	—	—	—	—	—
6" Suspension/Deadend	2.4	—	—	—	—	—	—	—	—	—	—	—
10" Suspension/Deadend	2.9	—	—	—	2.9	—	—	—	2.9	—	—	—
Fuse Cutout 95 kV BIL	3.2	—	—	—	—	—	—	—	—	—	—	—
Fuse Cutout 125 kV BIL	3.7	—	—	—	—	—	—	—	—	—	—	—
Fuse Cutout 150 kV BIL	4.3	—	—	—	—	—	—	—	—	—	—	—
SF Breaker	—	—	—	—	—	—	—	—	195	293	424	650
Reactor Bushing	—	—	—	—	—	—	—	—	73	111	160	245

High performance anti-corrosion coating requiring minimal surface preparation

VOC free, one-part, room temperature vulcanizing (RTV), elastomeric organosiloxane rubber

Long-term weathering (UV, ozone and moisture) will never degrade the coating

Minimizes corrosion undercutting

Resists cathodic disbondment by design

Creates a 100% liquid-tight protective layer suitable for full immersion applications

CHEMICAL/WEATHERING PROTECTION



ANTI-CORROSION COATINGS - VOC FREE

The fight against the ravages of corrosion is a never-ending battle. To protect against service interruptions and expensive repair of structural steel, the correct coating needs to be specified. Every coatings manufacturer claims to solve problems, but only **Si-COAT Anti-Corrosion Coatings** provide a reliable, cost-effective solution.

END THE BATTLE AGAINST CORROSION & REDUCE MAINTENANCE COSTS BY USING SI-COAT ANTI-CORROSION COATINGS

Epoxy, alkyd, vinyl ester, phenolic and zinc coatings are merely short-term solutions to corrosion. Each of these coatings tend to fade, chalk, and peel after prolonged service. As well, none can compare to the performance of **Si-COAT 579/580** in stopping corrosion undercutting.

Si-COAT Anti-Corrosion Coatings are one-part, room temperature vulcanizing (RTV) organosiloxane rubber protective coatings. The fact that they are single component products imparts many attributes that make them far more favorable coatings compared to conventional materials. **Si-COAT 579** is resistant to cathodic disbondment while **Si-COAT 580** is not.

Mixing of chemicals at the job site is not required, nor are plural pumping systems. As well, **Si-COAT Anti-Corrosion Coatings** display superior resistance to UV light (the primary source of material degradation), ozone, many chemicals and normal weathering. This leads to unparalleled longevity of the product.

Because of its superior adhesive properties, **Si-COAT Anti-Corrosion Coatings** require minimal surface preparation. Thus, no priming is required on almost all substrates and adhesion to metal surfaces is outstanding if not unsurpassed. As well, existing installations coated with lead-based paints or containing asbestos insulation are easily encapsulated by **Si-COAT**. This avoids expensive sand-blasting and containment. A typical case history on a large diameter pipe has shown 70% savings on overall project cost.

The elasticity factor of **Si-COAT Anti-Corrosion Coatings** ensures tolerance to thermal and vibrational expansion. This also applies to mechanical deformation due to various reasons. In destructive tests ranging from 180° bending, to heavy impact to abrasion to nearly four months in a salt-fog chamber at 60°C (140°F), **Si-COAT Anti-Corrosion Coatings** display results far superior to any competitor.



For a technical and/or case history presentation on **Si-COAT Anti-Corrosion Coatings**, please contact CSL.

After 2550 hours in a salt-fog chamber at 60°C (140°F) the coating showed no damage. Uncoated steel corroded severely while coated portions remained fully intact. Corrosion undercutting beyond the score line was arrested.

Typical Properties

Uncured

Type	VOC Free Si-COAT, one-part RTV
Appearance	thick paint
Solids Content	76% by wt. (68% by vol.)
Specific Gravity	1.2
Viscosity	6,500 ± 1,500 cP
Sag (Leneta Anti-Sag Meter)	35 ± 10
Application Temperature Range	>0 to 50°C (>32 to 120°F)
Coverage (500µ or 20 mil thickness)	1.3 m ² /L (53 ft ² /US gal)
Cure System	neutral, moisture cure
Skin-over Time (at Standard Conditions*)	30 min.
Tack Free Time (at Standard Conditions*)	60 min.
Flash Point	42°C (107°F)

Cured

At Standard Conditions* for 7 Days

Hardness (ASTM D2240, Shore A)	35
Tensile Strength (ASTM D412)	17 kg/cm ² (240 psi)
Elongation at Break (ASTM D412)	180%
Tear Resistance (ASTM D624, Die B)	6 kN/m (34 pli)
Temperature Stability	-57 to 160°C (-70 to 320°F)
Salt Water Exposure (2550 hours, 60°C or 140°F)	no deterioration
Thermal Conductivity	5.0 x 10 ⁻⁴ cal/sec.cm. °C
Water Repellency Angle	96 deg.
UV Accelerated Weathering (ASTM G53 Series, 5000 hours)	no degradation

* Standard Conditions are 25°C (77°F) and 50% relative humidity

TYPICAL APPLICATIONS

Si-COAT Anti-Corrosion Coatings are designed for superior anti-corrosion protection. Their resistance to UV, ozone and weathering along with their enhanced adhesion properties makes them ideal anti-corrosion protection agents for metal structures, tanks, buildings and roofs. Si-COAT Anti-Corrosion Coatings achieve excellent adhesion to unprimed metal surfaces. They are best applied to new metal with a dry surface. Si-COAT Anti-Corrosion Coatings can also be used to coat older rusting structures to significantly extend the structure's life and to enhance its appearance.

Surfaces must be thoroughly cleaned of all loose rust and oil. Sandblasting is the recommended method of cleaning. Oil must be removed by hand wiping with solvent. All surfaces must be dry.

Recommended application method is airless spray to a final dry film thickness of 375µ (15 mil). Each coat can be applied as soon as the previous coat is tacky.

PACKAGING

Si-COAT Anti-Corrosion Coatings are available in 3.8L (1 US gallon) cans, 19L (5 US gallon) metal pails and 189L (50 US gallon) drums.

STORAGE

Si-COAT Anti-Corrosion Coatings, when stored in original unopened containers at or below 32°C (90°F), have a shelf life of 12 months from date of shipment.

SAFETY PRECAUTIONS

Adequate ventilation should be provided. On direct contact, uncured coating may irritate eyes. Flush well with water and call a physician. See Material Safety Data Sheet for more information.

Performance Under Specialized & Destructive Testing

Test	Standard	Dry Film Thickness	Ageing	Result
Adhesion Test	ISO 4624	450µ (18 mil)	72 hrs @ 60°C (140°F)	Adhesive strength of 2.1 N/mm ² (300 psi)
180° Bend Test, 12.5 mm (1/2") bend radius	Internal Method	450µ (18 mil)	72 hrs @ 60°C (140°F)	No adhesive failure, no damage to coating surface
180° Bend Test, 5 mm (1/5") bend radius	Internal Method	450µ (18 mil)	72 hrs @ 60°C (140°F)	No adhesive failure, no damage to coating surface
Forward Impact Resistance Test, 10 N·m (88.5 lb _r ·in)	ECCA T5	450µ (18 mil)	72 hrs @ 60°C (140°F)	No adhesive failure, no damage to coating surface
Reverse Impact Resistance Test, 10 N·m (88.5 lb _r ·in)	ECCA T5	450µ (18 mil)	72 hrs @ 60°C (140°F)	No adhesive failure, no damage to coating surface
High Pressure Water Blast Test, Rotating Head, 30 cm (1 ft) Distance	Internal Method	450µ (18 mil)	72 hrs @ 60°C (140°F)	No adhesive failure, no damage to coating surface
Abrasion Resistance Test	ASTM D968	450µ (18 mil)	72 hrs @ 60°C (140°F)	No wear effects observed. Because of coating's elasticity, it is not possible to determine a reduction in film thickness.

Si-COAT 560/561

One-part, room temperature vulcanizing (RTV), elastomeric organosiloxane rubber

Self-cleaning action keeps surface free of marine growth

Environmentally friendly VOC free formulation

Increased speed and fuel efficiency on boats due to high slip coating surface

Easy to apply and maintain by brush, spray or roller

FOULING RELEASE COATINGS - VOC FREE

Marine growth has always created a problem for ships, water intake pipes and other marine structures. The increased drag and weight on boats especially, results in reduced speeds and increased fuel consumption.

Various products such as self-polishing copolymers and coatings that essentially poison marine life in order to impede their growth have worked – but at the cost of destroying the environment. Environmental regulations that force an end to the use of environmentally hazardous coatings have resulted in a search for an appropriate alternative coating that has minimal impact on the environment.

THE SEARCH FOR A SOLUTION TO MARINE FOULING NUISANCES ENDS WITH SI-COAT FOULING RELEASE COATINGS

The most effective anti-fouling coatings available today contain toxins and will be banned by the year 2008. It has been recognized by leading researchers around the world that the ideal replacement will be a nontoxic material that does not poison marine life, but resists the attachment of marine life and encourages the organisms to fall off the structure.

Si-COAT Fouling Release Coatings achieve this objective by creating a high slip surface with very low surface tension. In essence, marine life is unable to strongly grip the surface of the coating and simply falls away.

The smooth surface of **Si-COAT Fouling Release Coatings** give a secondary benefit as well. When compared against a clean boat hull freshly coated with a conventional anti-fouling coating, an identical boat that has been coated with a **Si-COAT Fouling Release Coating** will, on average, ply the water with 10% greater speed and will consume 14% less fuel. This is due to the decreased turbulence at the interface between the boat hull and the water that **Si-COAT Fouling Release Coatings** impart.

Si-COAT Fouling Release Coating is available in two versions. **Si-COAT 560** with protection against cathodic disbondment has been specially formulated to be applied to steel boat hulls and steel structures that employ cathodic protection. **Si-COAT 561** has been designed for application on surfaces without cathodic protection such as fiberglass boat hulls, etc.

For a technical presentation on **Si-COAT Fouling Release Coatings**, please contact CSL.

MARINE GROWTH RELEASE



Typical Properties

Uncured

Type	VOC Free Si-COAT, one-part RTV
Appearance	thick paint
Solids Content	76% by wt. (68% by vol.)
Specific Gravity	1.2
Viscosity (Brookfield Viscometer)	7,000 ± 1,400 cP
Sag (Leneta Anti-Sag Meter)	35±10
Application Temperature Range	>0 to 50°C (>32 to 120°F)
Coverage (500µ or 20 mil thickness)	1.4 m ² /L (57 ft ² /US gal)
Cure System	neutral, moisture cure
Skin-over Time (at Std. Cond.*)	30 min.
Cure Time (at Std. Cond.*)	24 hr.
Flash Point (ASTM D93)	55°C (131°F)
Vapor Pressure (at Std. Cond.*)	negligible

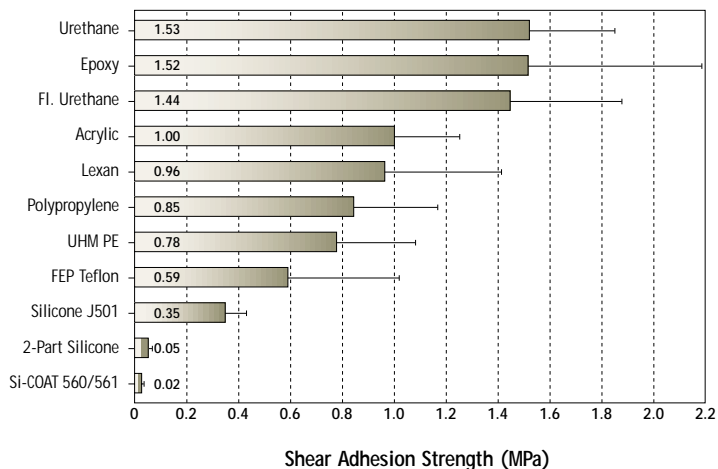
Cured

At Standard Conditions* for 7 Days

Hardness (ASTM D2240, Shore A)	40
Tensile Strength (ASTM D412)	18 kg/cm ² (260 psi)
Elongation at Break (ASTM D412)	210%
Tear Resistance (ASTM D624, Die B)	5 kN/m (29 ppi)
Temperature Stability	-57 to 160°C (-70 to 320°F)
Salt Fog Exposure (2550 hours)	no degradation
Thermal Conductivity	5.0 x 10 ⁻⁴ cal/sec.cm ² .(°C/cm)
UV Accelerated Weathering (ASTM G53 Series, 5000 hours)	no degradation

* Standard Conditions are 25°C (77°F) and 50% relative humidity.

Barnacle Adhesion Strength in Shear



Note: Effectiveness of various fouling release coatings have been evaluated by measuring the shear adhesion strength of barnacles using ASTM D5618 standard test method.

TYPICAL APPLICATIONS

Si-COAT Fouling Release Coatings are designed for superior, environmentally friendly anti-fouling protection through their VOC free formulation. Their resistance to UV, ozone salt and most chemicals along with their enhanced adhesion properties and resistance to marine buildup make them ideal fouling release coatings for metal, concrete, fiberglass, and composite marine structures. Beyond their fouling release properties, **Si-COAT 560/561** revolutionize the field of coatings by eliminating the problem of corrosion undercutting.

Si-COAT Fouling Release Coatings achieve excellent adhesion to most unprimed surfaces and are resistant to the effects of disbondment from cathodic protection. **Si-COAT Fouling Release Coatings** are best applied to new, dry surfaces, but can also be used to coat older rusting structures to significantly extend the structure's life and to enhance its appearance.

Substrates must be thoroughly cleaned of all loose rust and oil. Sandblasting is the recommended method of cleaning. Oil must be removed by wiping with solvent. All surfaces must be dry.

Recommended application method is airless spray to achieve a coat of 500µ (20 mil) thickness.

PACKAGING

Si-COAT Fouling Release Coatings are available in 3.8L (1 US gallon) cans, 19L (5 US gallon) metal pails and 189L (50 US gallon) drums.

STORAGE

Si-COAT Fouling Release Coatings, when stored in original unopened containers at or below 32°C (90°F), have a shelf life of 12 months from date of shipment.

SAFETY PRECAUTIONS

Adequate ventilation should be provided. On direct contact, uncured coating may irritate eyes. Flush well with water and call a physician. See Material Safety Data Sheet for more information.

Ultimate protection for concrete from salt and chemical related degradation

One-part, room temperature vulcanizing (RTV), elastomeric organosiloxane rubber

Unsurpassed adhesion with minimal surface preparation

Long-term weathering (UV, ozone and moisture) will never degrade the coating

Elasticity ensures integrity of coating despite cracking or movement of concrete

SPALLING/DEGRADATION PROTECTION

Typical Properties

Uncured

Type	Si-COAT, one-part RTV
Appearance	thick paint
Solids Content	76% by wt. (68% by vol.)
Specific Gravity	1.2
Viscosity (Brookfield Viscometer)	6,500 ± 1,500 cP
Sag (Leneta Anti-Sag Meter)	35 ± 10
Application Temperature Range	>0 to 50°C (>32 to 120°F)
Coverage (760µ or 30 mil thickness)	0.88 m ² /L (36 ft ² /US gal)
Cure System	neutral, moisture cure
Skin-over Time (at Std. Cond.*)	40 min.
Cure Time (at Std. Cond.*)	24 hr.
Flash Point (ASTM D93)	42°C (107°F)
Water Vapor Pressure	2.9 perms

Cured

	At Standard Conditions* for 7 Days
Hardness (ASTM D2240, Shore A)	35
Tensile Strength (ASTM D412)	18 kg/cm ² (260 psi)
Elongation at Break (ASTM D412)	150%
Tear Resistance (ASTM D624, Die B)	6 kN/m (34 ppi)
Temperature Stability	-57 to 160°C (-70 to 320°F)
Salt Water Exposure (2550 hours)	no deterioration
Thermal Conductivity	5.0 x 10 ⁻⁴ cal/sec.cm.°C
UV Accelerated Weathering (ASTM G53 Series, 5000 hours)	no degradation

* Standard Conditions are 25°C (77°F) and 50% relative humidity.

TYPICAL APPLICATIONS

Si-COAT 569 protects concrete from normal weathering, salt, chemical contamination. It forms an impervious layer to moisture borne contamination to prevent steel rebar corrosion, one of the main causes of premature deterioration of concrete water barriers, dams, bridges, overpasses, etc.

Si-COAT 569 achieves excellent adhesion to clean, unprimed concrete surfaces. It is best applied to newly poured concrete with dry surfaces. **Si-COAT 569** can be used to coat older concrete structures although, in-place contaminants will continue to cause damage, though at a much slower rate. **Si-COAT 569** is unaffected by existing salt/chemical efflorescence.

Surfaces must be cleaned of all loose debris, mildew, oil and any other coating. Recommended application method is airless spray to a final coating thickness of 760µ (30 mil). Each coat can be applied as soon as the previous coat has become tacky.

PACKAGING

Si-COAT 569 is available in 3.8L (1 US gallon) cans, 19L (5 US gallon) metal pails and 189L (50 US gallon) drums.

STORAGE

Si-COAT 569 when stored in original unopened container at or below 32°C (90°F) has a shelf life of 12 months from date of shipment.

SAFETY PRECAUTIONS

Adequate ventilation should be provided. On direct contact, uncured coating may irritate eyes. Flush well with water and call a physician. See Material Safety Data Sheet for more information.

Typical Properties

Uncured

Type	Si-COAT, one-part RTV
Appearance	thick paint
Specific Gravity	1.39
Viscosity	40,000 ± 10,000 cP
Application Temperature Range	>0 to 50°C (>32 to 120°F)
Coverage (760µ or 30 mil thickness)	1.3 m ² /L (53 ft ² /US gal)
Cure System	neutral, moisture cure
Skin-over Time (at Standard Conditions*)	35 min.
Cure Time (at Standard Conditions*)	24 hr.
Flash Point	43°C (109°F)

Cured

At Standard Conditions* for 7 Days

Durometer Hardness (ASTM D2240, Shore A)	40 points
Tensile Strength (ASTM D412)	8.5 kg/cm ² (120 psi)
Elongation at Break (ASTM D412)	150%
Tear Resistance (ASTM D624, Die B)	5.3 kN/m (30 ppi)
Dielectric Strength (ASTM D149)	385 V/mil (152 kV/cm)
Volume Resistivity (ASTM D257)	3.0 x 10 ¹⁵ ohm.cm
Dissipation Factor (ASTM D150)	0.01 at 100 Hz to 100 kHz
Dielectric Constant (ASTM D150)	4.0 at 100 Hz to 100 kHz
Thermal Conductivity	1.2 x 10 ⁻³ cal/sec.cm ² . (°C/cm)
UV Accelerated Weathering (ASTM G53 Series, 5000 hours)	no degradation

* Standard Conditions are 25°C (77°F) and 50% relative humidity.

TYPICAL APPLICATIONS

To overcome the problem, utilities have applied various types of protective "wildlife caps" to no avail. They fail physically due to corona cutting, tracking, erosion and the sun's UV rays. As well, they fail to prevent animals from chewing or reaching underneath the cap.

The solution is simple. Utilities are implementing **Si-COAT 587 Animal Guard Coating**. A one-coat application of 760µ (30 mil) on the metal surfaces provides 10 kV insulation strength. When applied to both ends of insulators, sufficient insulation strength is obtained to guard against animal and bird related flashovers on a 25 kV system.

PACKAGING

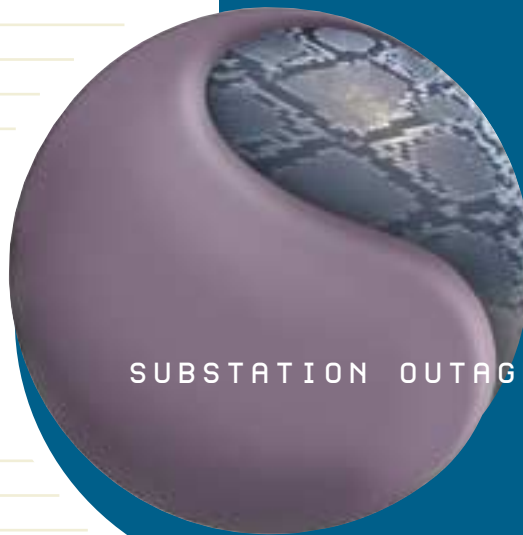
Si-COAT 587 is available in 3.8L (1 US gallon) cans and 19L (5 US gallon) metal pails.

STORAGE

Si-COAT 587 when stored in original unopened container at or below 32°C (90°F) has a shelf life of 12 months from date of shipment.

SAFETY PRECAUTIONS

Adequate ventilation should be provided. On direct contact, uncured coating may irritate eyes. Flush well with water and call a physician. See Material Safety Data Sheet for more information.



SUBSTATION OUTAGE PROTECTION

Power outages as a result of any cause are always a nuisance. But most frustrating of all are outages due to birds and other animals that cause short-circuiting of electrical equipment.

AVOID THE EXPENSE, DOWNTIME AND FRUSTRATION OF WILDLIFE INDUCED POWER OUTAGES WITH Si-COAT 587

Investigation into the statistics of wildlife induced power outages reveals:

Wildlife is the **SECOND** leading cause of substation outages.

Twenty five percent of wildlife induced outages at substations are sustained.

The average cost of a wildlife induced outage at a substation is \$26,000.

The average yearly number of wildlife induced outages for an average-sized utility is 35.

For an average-sized utility, the yearly cost of equipment outage duration due to wildlife is approximately \$1,000,000.

Si - COAT

The knowledge and dedication that has fostered Si-COAT's benchmark standards continues to inspire CSL Engineers.

The journey that has taken us to our leadership position today is only a beginning...

... a starting point for where we're determined to be tomorrow.

TECHNOLOGY THAT STICKS



COLOR OPTIONS

Si-COAT Colors	549	560	561	569	570	579	580	587
Black	✓	✓	✓	✓	✓	✓	✓	✓
Bittersweet Brown	✓	✓	✓	✓	✓	✓	✓	✓
Milky Way Brown	✓	✓	✓	✓	✓	✓	✓	✓
Arizona Clay	✓		✓	✓	✓		✓	✓
Bog Sludge		✓				✓		
Work Socks	✓	✓	✓	✓	✓	✓	✓	✓
Camouflaged Olive	✓	✓	✓	✓	✓	✓	✓	✓
Basically Not Beige		✓					✓	
Quicksilver		✓				✓		
Blue Steel	✓	✓	✓	✓	✓	✓	✓	✓
Galvanic Metallic	✓	✓	✓	✓	✓	✓	✓	✓
Mariner Blue	✓	✓	✓	✓	✓	✓	✓	✓
Florida Blue	✓	✓	✓	✓	✓	✓	✓	✓
Hunter Green	✓	✓	✓	✓	✓	✓	✓	✓
Green Tea	✓	✓	✓	✓	✓	✓	✓	✓
Maroon Merlot	✓	✓	✓	✓	✓	✓	✓	✓
Creamed Cranberry	✓	✓	✓	✓	✓	✓	✓	✓
Wet Clay Grey	✓		✓	✓	✓		✓	✓
Yikes! Yellow	✓		✓	✓	✓		✓	✓
Plastered	✓		✓	✓	✓		✓	✓
Egg Shell	✓		✓	✓	✓		✓	✓
White	✓		✓	✓	✓		✓	✓

Note: Colors may vary. Not exactly as shown. Minimum order quantities may apply.

Custom colors available upon request.

Chemical resistance tested at an ambient temperature of 25°C (77°F)

Si-COAT	549	560	569	570	579	587	Si-COAT	549	560	569	570	579	587	Si-COAT	549	560	569	570	579	587
Acetaldehyde	1	2	2	3	2	3	Ether	1	2	2	3	2	3	Oils - Vegetable	1	2	2	3	2	3
Acetic Acid - up to 99.5% (Glacial)	1	2	2	3	2	3	Ethyl Acetate	1	2	2	3	2	3	Oleum	1	2	2	3	2	3
Acetone	1	2	2	3	2	3	Ethyl Acrylate	1	2	2	3	2	3	Oxalic Acid	1	2	2	3	2	3
Acrylonitrile	1	2	2	3	2	3	Ethyl Ether	1	2	2	3	2	3	Perchloric Acid	1	2	2	3	2	3
Adipic Acid	1	2	2	3	2	3	Ethyl Glycol	1	2	2	3	2	3	Perchloroethylene	1	2	2	3	2	3
Alcohols	1	2	2	3	2	3	Ethyl Sulfate	1	2	2	3	2	3	Petroleum	1	2	2	3	2	3
Aluminum Hydroxide	1	2	2	3	2	3	Ethylamine	1	2	2	3	2	3	Phosphoric Acid	1	2	2	3	2	3
Aluminum Nitrate	1	2	2	3	2	3	Ethylbenzene	1	2	2	3	2	3	Phosphorous Acid	1	2	2	3	2	3
Aluminum Potassium Sulfate	1	2	2	3	2	3	Ethylene Dichloride (EDC)	1	2	2	3	2	3	Phthalic Acid	1	2	2	3	2	3
Aluminum Sulfate	1	2	2	3	2	3	Ethylene Glycol	1	2	2	3	2	3	Polyacrylic Acid	1	2	2	3	2	3
Ammonia	1	2	2	3	2	3	Fatty Acids	1	2	2	3	2	3	Postassium Nitrate	1	2	2	3	2	3
Ammonium Bisulfite	1	2	2	3	2	3	Ferric Chloride	1	2	2	3	2	3	Postassium Persulfate	1	2	2	3	2	3
Ammonium Hydroxide	1	2	2	3	2	3	Fluoboric Acid	1	2	2	3	2	3	Potassium Acetate	1	2	2	3	2	3
Ammonium Nitrate	1	2	2	3	2	3	Formaldehyde	1	2	2	3	2	3	Potassium Bromide	1	2	2	3	2	3
Arsenic Acid	1	2	2	3	2	3	Formic Acid - 10%	1	2	2	3	2	3	Potassium Chlorate	1	2	2	3	2	3
Benzaldehyde	1	2	2	3	2	3	Fuel Oil	1	2	2	3	2	3	Potassium Dichromate	1	2	2	3	2	3
Benzene	1	2	2	3	2	3	Furfural	1	2	2	3	2	3	Potassium Hydroxide - up to 40%	1	2	2	3	2	3
Benzene Sulfonic Acid	1	2	2	3	2	3	Gasoline	1	2	2	3	2	3	Potassium Permanganate	1	2	2	3	2	3
Benzoic Acid - Sat'd	1	2	2	3	2	3	Glycol Ethers	1	2	2	3	2	3	Potassium Sulfate	1	2	2	3	2	3
Black Liquor (Paper)	1	2	2	3	2	3	Glycolic Acid	1	2	2	3	2	3	Propionic Acid - 50%	1	2	2	3	2	3
Bleach	1	2	2	3	2	3	Green Liquor	1	2	2	3	2	3	Salicylic Acid	1	2	2	3	2	3
Boric Acid - Sat'd	1	2	2	3	2	3	Heptane	1	2	2	3	2	3	Silver Nitrate	1	2	2	3	2	3
Butyl Acetate	1	2	2	3	2	3	Hexane	1	2	2	3	2	3	Sodium Bicarbonate	1	2	2	3	2	3
Butyl Acrylate	1	2	2	3	2	3	Hydrazine - 35%	1	2	2	3	2	3	Sodium Chlorate	1	2	2	3	2	3
Butyl Cellosolve Acetate	1	2	2	3	2	3	Hydrobromic Acid - up to 48%	1	2	2	3	2	3	Sodium Chloride	1	2	2	3	2	3
Butyl Ether	1	2	2	3	2	3	Hydrochloric Acid - up to 37%	1	2	2	3	2	3	Sodium Chromate	1	2	2	3	2	3
Carbolic Acid	1	2	2	3	2	3	Hydrogen Peroxide - 30% Water	1	2	2	3	2	3	Sodium Dichromate	1	2	2	3	2	3
Carbon Tetrachloride	1	2	2	3	2	3	Hypochlorous Acid	1	2	2	3	2	3	Sodium Hydrosulfide	1	2	2	3	2	3
Cellosolve	1	2	2	3	2	3	Hydrogen Peroxide	1	2	2	3	2	3	Sodium Hydroxide - up to 50%	1	2	2	3	2	3
Chlorine - Gas (Dry & Wet)	1	2	2	3	2	3	Isopropyl Acetate	1	2	2	3	2	3	Sodium Hypochlorite - up to 25%	1	2	2	3	2	3
Chlorine Dioxide	1	2	2	3	2	3	Isopropyl Ether	1	2	2	3	2	3	Sodium Lauryl Sulfate - 20%	1	2	2	3	2	3
Chlorine Water - Sat'd	1	2	2	3	2	3	Kerosene	1	2	2	3	2	3	Sodium Peroxide	1	2	2	3	2	3
Chloroacetic Acid	1	2	2	3	2	3	Lactic Acid - 20%	1	2	2	3	2	3	Sodium Sulfate	1	2	2	3	2	3
Chlorobenzene	1	2	2	3	2	3	Lanolin	1	2	2	3	2	3	Stearic Acid	1	2	2	3	2	3
Chloroform	1	2	2	3	2	3	Lauric Acid	1	2	2	3	2	3	Styrene	1	2	2	3	2	3
Chlorosulfonic Acid	1	2	2	3	2	3	Levulinic Acid	1	2	2	3	2	3	Sulfamic Acid - 25%	1	2	2	3	2	3
Chromic Acid - up to 15%	1	2	2	3	2	3	Lithium Hypochlorite	1	2	2	3	2	3	Sulfite Liquor (Paper)	1	2	2	3	2	3
Citric Acid - up to 50%	1	2	2	3	2	3	Magnesium Carbonate	1	2	2	3	2	3	Sulfur Dioxide	1	2	2	3	2	3
Copper Sulfate	1	2	2	3	2	3	Magnesium Hydroxide	1	2	2	3	2	3	Sulfuric Acid - up to 70%	1	2	2	3	2	3
Cresylic Acid	1	2	2	3	2	3	Maleic Acid - up to 50%	1	2	2	3	2	3	Sulfurous Acid - Sat'd	1	2	2	3	2	3
Crude Oil - Sour	1	2	2	3	2	3	Malic Acid	1	2	2	3	2	3	Tall Oil	1	2	2	3	2	3
Crude Oil - Sweet	1	2	2	3	2	3	Manganese Sulfate	1	2	2	3	2	3	Tannic Acid	1	2	2	3	2	3
Cumene	1	2	2	3	2	3	Mercury	1	2	2	3	2	3	Tartaric Acid	1	2	2	3	2	3
Cyclohexane	1	2	2	3	2	3	Methyl Ethyl Ketone	1	2	2	3	2	3	Tetrachloroethane	1	2	2	3	2	3
Cyclohexanone	1	2	2	3	2	3	Methyl Isobutyl Ketone	1	2	2	3	2	3	Tetrahydrofuran	1	2	2	3	2	3
Cymene	1	2	2	3	2	3	Methyl Methacrylate	1	2	2	3	2	3	Toluene	1	2	2	3	2	3
Dichloroacetic Acid	1	2	2	3	2	3	Mineral Spiritis	1	2	2	3	2	3	Toluene Sulfonic Acid	1	2	2	3	2	3
Dichlorobenzene	1	2	2	3	2	3	Monochloroacetic Acid - 5%	1	2	2	3	2	3	Trichlorobenzene	1	2	2	3	2	3
Diesel Fuel	1	2	2	3	2	3	Monoethanolamine	1	2	2	3	2	3	Trichloroethylene	1	2	2	3	2	3
Diethylamine	1	2	2	3	2	3	Muriatic Acid	1	2	2	3	2	3	Tricresyl Phosphate	1	2	2	3	2	3
Diethylbenzene	1	2	2	3	2	3	Naphtha	1	2	2	3	2	3	Triethanolamine	1	2	2	3	2	3
Dimethyl Aniline	1	2	2	3	2	3	Naphthenic Acid	1	2	2	3	2	3	Triethyl Phosphite	1	2	2	3	2	3
Dimethyl Phthalate	1	2	2	3	2	3	N-Butyric Acid	1	2	2	3	2	3	Triethylamine	1	2	2	3	2	3
Dimethylformamide	1	2	2	3	2	3	Nitric Acid - up to 30%	1	2	2	3	2	3	Tung Oil	1	2	2	3	2	3
Dinitrobenzene	1	2	2	3	2	3	Octanoic Acid	1	2	2	3	2	3	Urea	1	2	2	3	2	3
Dinitrotoluene	1	2	2	3	2	3	Oils - Animal	1	2	2	3	2	3	Vinyl Chloride	1	2	2	3	2	3
Dioctyl Phthalate	1	2	2	3	2	3	Oils - Cutting	1	2	2	3	2	3	White Liquor (Paper)	1	2	2	3	2	3
Epichlorohydrin	1	2	2	3	2	3	Oils - Mineral	1	2	2	3	2	3	Xylene	1	2	2	3	2	3

Key: 1 = Suitable for at least 100 hours of containment and for areas with frequent spills and/or poor drainage.
 2 = Suitable for intermittent spills when good housekeeping practices are followed.
 3 = Suitable for situations where chemicals are airborne.

This guide is intended as an aid in determining the potential usefulness of Si-COAT products. The chemical resistance of a coating is influenced by several factors including the primary chemical exposure (including chemical mixtures), severity of the exposure, contaminants, housekeeping practices, and operating temperatures. Testing is recommended to confirm suitability. Users are urged to carefully evaluate each project according to its particular conditions and circumstances.

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Si-COAT[®]
a CSL Innovation

TECHNOLOGY THAT STICKS™

LIMITED WARRANTY – PLEASE READ CAREFULLY

CSL believes that the information in this publication is an accurate description of the typical characteristics and/or uses of the product or products, but it is the end-user's responsibility to thoroughly test the product in their specific application to determine its performance, efficacy and safety. Suggestions of uses should not be taken as inducements to infringe any particular patent.

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