



INTRODUCTION

Si-COAT® 570hs™ High Voltage Insulator Coating (HVIC) [high solids] is a room temperature vulcanizing (RTV) silicone product that contains less solvent than regular. It does not require additional thinning or excessive mixing before use. Its patent is based on a formulation using optimally sized alumina trihydrate (ATH) particle at optimized concentration to provide long-term hydrophobicity and resistance to electrical tracking. Unlike competitors that rely on sub-micron ATH to reduce settling, **Si-COAT® 570hs™** uses a larger, patented ATH particle combined with a controlled manufacturing process to minimize filler settling and reduce mixing requirements, making it one of the easiest HVICs to apply. **Si-COAT® 570hs™** also delivers strong adhesion to glass, porcelain, and polymer (silicone and EPDM) insulators without primer, across all voltage classes. With over 15 years of field service, it has demonstrated zero failures, outperforming all competitive HVICs.

For maximum leakage-current suppression and unmatched long-term performance, **Si-COAT® 570hs™** remains CSL's flagship HVIC.

For maximum suppression of leakage current and an unmatched long term performance greater than that of any other HVIC, turn to **Si-COAT® 570hs™** by CSL Silicones In..

PRODUCT DESCRIPTION

A single component, RTV, moisture cure, high-build polysiloxane coating providing excellent long-term hydrophobicity, hydrophobicity recovery, electrical characteristics and UV tolerance leading to suppression of leakage current, reduction of pollution related flashover risk and a long service life.

INTENDED USES

Suitable for both new and refurbishment applications. Can be used, unprimed, on a variety of insulator substrates including glass, porcelain, HTV silicone, LSR type silicone and EPDM.

Can be used as a refresh coating over old existing silicone HVICs when properly cleaned and still displays strong adhesion to the insulator surface.

Effective in salt spray, salt fog, industrial (cement dust, fly ash, carbon black, acid emissions, etc.), desert sand and other severe environments. Designed for use in AC and DC systems, in substations of all voltage levels and on transmission lines under all voltage conditions ranging from low distribution voltages to very high transmission voltages.

May also be used on metal substrates where a high dielectric strength insulating coating is required, including railway and other high-voltage applications.

PRODUCT CHARACTERISTICS AND PRACTICAL INFORMATION

Color	Clay Gray or White. Custom colors may be available dependent on formulation requirements
Gloss Level	Semi-gloss
Percent Solids	75% by volume, nominal 84% by weight, nominal
Theoretical Thickness	15.0 mil ± 4 mil (380 ± 100 microns) dry film thickness (DFT) 20.0 ± 5 mil (500 ± 130 microns) wet film thickness (WFT)

Theoretical Coverage	15.0 mils (380 μ) DFT
sq. ft per US gal.	80,4
sq. ft per lb	7,6
sq. m per liter	2,0
sq. m per kg	1,6

Allow appropriate loss factor:

Practical Coverage = Theoretical Coverage x [100% - Loss%].

Practical Application Thickness Guidance:

380 microns ± 100 microns, in accordance with IEEE Std 1523TM-2002 (IEEE Guide for the Application, Maintenance, and Evaluation of Room Temperature Vulcanizing (RTV) Silicone Rubber Coatings for Outdoor Ceramic Insulators)

Method of Application: Airless spray, brush or dip

Application Temperature Range:

41 to 140°F (5 to 60°C) [ambient]
41 to 266°F (5 to 130°C) [substrate]

DRYING TIME:

Skin-over Time	20-25 minutes nominal*
Tack-free Time	30-40 minutes nominal*
Cure Through	6 hours nominal*
Full Physical Characteristics	7 days nominal*

*At standard conditions [77°F (25°C) and 50% relative humidity – 10 mils wet film thickness]

REGULATORY DATA

Flash Point	100°F (38°C)
VOC	1.7 lb/US gallon (200 g/liter), nominal
Product Weight	10.6 lb/US gallon (1.27 kg/liter), nominal

PHYSICAL PROPERTIES

(Typical properties - values not to be used as specifications)

Uncured	
Appearance	Thick Paint
Viscosity	2500 to 4000 cP
Cure System	Neutral, moisture cure
Cured At Standard Conditions* for 7 Days	
Dielectric Strength (ASTM D149)	718.3 V/mil @ 21.3 mil (282.8 kV/cm @ 0.054 cm)
Volume Resistivity (ASTM D257)	>2.35 x 10 ¹² Ω.in (5.96 x 10 ¹⁶ Ω.cm)
Surface Resistivity (ASTM D257)	1.26 x 10 ¹⁶ Ω/□
Dissipation Factor (ASTM D150)	at 100 Hz: 0,0234 at 100 kHz: 0,00586
Dielectric Constant (ASTM D150)	at 100 Hz: 3.13 at 100 kHz: 3.05
Tracking Wheel Withstand (CEA LWIWG-01)	>1,000 hrs
Dry Arc Resistance (ASTM D495)	Track: 186 sec. Burnout: > 450 sec.
Temperature Stability	-40 to 480°F (-40 to 250°C)
Thermal Expansion Coefficient	1.33 x 10 ⁻⁵ in/in.°F (2.4 x 10 ⁻⁵ cm/cm.°C)
Thermal Conductivity	1.70 x 10 ⁻⁵ BTU/hr.ft.°F (7.0 x 10 ⁻⁴ Cal/sec.cm.°C)
Loss Tangent at 100 Hz (ASTM D150)	0.0234
Water Repellency Angle (IEC 62073)	Static: 116.0 degrees Advancing: 114.0 degrees Receding: 92.0 degrees
UV & Salt Fog Accelerated Weathering (IEC61109, 5,000 hours)	No degradation
Inclined Plane Tracking & Erosion Test (IEC 60587)	PASS: 1A 4.5; 1B 4.5
Adhesion Testing (IEEE 957)	Water Blast Test: PASS
Adhesion Testing (CEA LWIWG-02)	100 hrs Boiling Water Test: PASS

*At standard conditions 77°F (25°C) and 50% relative humidity.

SURFACE PREPARATION & CLEANLINESS

All surfaces to be coated must be dry and free of dirt, dust, grease, oil, release agents, curing compounds, and other foreign matter including frost, water and microscopic condensed moisture, to ensure proper adhesion of the Si-COAT® 570hs™ coating to the insulator surface.

High-pressure water washing is the suggested method for cleaning the insulator surface. The suggested pressure washing parameters are 200-1000 psi (14-70 bar) @ 8 – 10 gallons per minute (30 – 40 liters per minute). For cementitious contaminants use dry abrasive cleaner such as crushed corncob or walnut shells mixed with limestone.

For covered in silicone or hydrocarbon grease, remove the bulk of the grease with a dry abrasive cleaner or by hand-wiping with a rag, then clean the surface with an

oil-free solvent such as acetone, followed by a final wipe with isopropyl alcohol. Apply coating only after surfaces are fully dry.

If coating application is delayed after cleaning, the insulators must be re-cleaned.

COATING APPLICATION

Mixing: Si-COAT® 570hs™ is a one-part, ready-to-use coating. However, it is normal, during shipment or extended storage, for carrier solvent to rise to the top of the container. Upon opening of the container, mix by power agitator until an even consistency of coating is obtained.

Application: All surfaces must be clean and dry before application. Apply coating in a manner to prevent runs, sags, drips, spills or holidays. The temperature of the surface to be coated should be between 41 and 122°F (5 and 50°C) and environmental temperature should be at least 5°F (3°C) above the dew point prior to and during application.

All areas particularly prone to corrosion such as the caps and pins of insulator discs can also be coated to provide added protection and a uniform monolithic surface.

The insulator should be coated with a minimum 10.0 mils (254 microns) DFT of Si-COAT® 570hs™. The average DFT of Si-COAT® 570hs™ is 15 mils (380 microns) and the maximum advisable DFT is 50 mils (1,270 microns).

Airless Spray: Recommended - Tip sizes to range from 17 to 21 thou (432 to 533 micron) with a 6 to 10 inch (15 to 25 cm) fan at 1 ft (30 cm) distance. Pump pressure ratio of 40:1. Total output fluid pressure at spray tip not less than 2,000 psi (141 kg/cm²). Minimum 1/2 inch (1.3 cm) ID, maximum 50 ft (15 m) length spray line.

Brush: Suitable - Generally, 10 to 15 mil (254 to 381 micron) DFT can be achieved.

Thinner: Naphtha or Odorless Mineral Spirits. It is recommended, however, that Si-COAT® 570hs™ be used at the viscosity supplied. If product is thinned, do not exceed local environmental legislation

Cleaner: Naphtha or Odorless Mineral Spirits.

Work Stoppages & Restarts: If work must stop before a container of Si-COAT® 570hs™ is fully used, minimize air and moisture exposure by covering the coating surface with polyethylene film and sealing the container airtight.

When restarting, remove the film. If any cured material is present, cut it away from the container wall and peel off the cured layer to expose fresh coating underneath.

Clean-up: Do not allow material to remain in hoses, gun or spray equipment. Flush all equipment thoroughly with the recommended cleaner.

Fully cured coating is environmentally benign (will not harm) and is safe for landfill disposal. However, always check local environmental regulations before disposal.

PRODUCT CHARACTERISTICS

Level of sheen and surface finish is dependent on application method. Avoid using a combination of application methods whenever possible. Best results in terms of gloss and appearance will always be obtained with airless spray.

If over coating Si-COAT® 570hs™ after weathering or ageing, ensure the coating is fully cleaned to remove all surface contamination such as dust, grease, oil, salt crystals, traffic fumes, etc. before application of a further coat of Si-COAT® 570hs™.

This product must only be thinned using the recommended thinners. The use of alternate thinners may inhibit the curing mechanism of the coating.

Do not apply to substrate temperatures below 41°F (5°C).

When applying Si-COAT® 570hs™ in confined spaces ensure adequate ventilation and/or respiratory equipment is available. Consult the Si-COAT® 570hs™ SDS for further details.

Condensation occurring during or immediately following application may result in a matte finish.

Si-COAT® 570hs™ has excellent tolerance to airborne chemical exposure. When severe chemical or solvent splashing/pooling is likely to occur, please contact CSL Silicones Inc. for information regarding suitability.

SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given in this document, the Si-COAT® 570hs™ Safety Data Sheet (SDS) and the container(s), and should not be used without reference to the SDS that CSL Silicones Inc. has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards & regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes may be emitted that will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult CSL Silicones Inc. for further advice.

PACKAGING*

Size (unit)	Product Volume	Net Weight	Shipping Weight
1 US gal	1.0 US gal (3.8 L)	10.6 lb (4.8 kg)	12.1 lb (5.5 kg)
5 US gal	5.0 US gal (18.9 L)	52.9 lb (24.0 kg)	57.3 lb (26.0 kg)

*For availability of other package sizes, please contact CSL Silicones Inc.

STORAGE

Shelf Life: 12 months from date of manufacture in the original unopened container below 90°F (32°C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat or ignition.

If your country or region experience high temperatures, CSL strongly recommends storing the coating material in an air-conditioned dry area, away from sources of heat or ignition, preferably below 73°F (23°C).

Disclaimer

The information given in this sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this document without first obtaining written confirmation from CSL Silicones Inc. as to the suitability of the product for the intended purpose does so at his/her own risk. The information contained herein has been prepared in good faith to comply with applicable federal and provincial (state) law(s). However, no warranty of any kind is given or implied and CSL Silicones Inc. will not be responsible for any damages, losses or injuries that may result from the use of any information contained herein. While CSL endeavors to ensure all advice it gives about the product (whether in this document or otherwise) is correct, we have no control over either the quality or condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless CSL specifically agrees in writing to do so, it does not accept any liability whatsoever or howsoever arising for the performance of the product, or for any consequential loss or damage arising out of the use of the product. Any warranty, if given or specific Terms & Conditions of Sale are contained in CSL's Terms & Conditions of Sale, a copy of which can be obtained upon request. The information contained herein is liable to modification from time-to-time in light of experience and CSL's policy of continuous product improvement. It is the user's responsibility to check that this document is current prior to using the product. This document must not be used for specification writing.

Technical Data Sheet

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