SPI COATINGS
PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

INSULATION AND CORROSION SPECIALISTS

HPC® HT Coating

Technical Data Sheet (9/24/25-2)

DESCRIPTION

HPC®-HT is a two-part (6 to 1) hybrid silicone non-flammable resin (Part B is cure). Part A is water-based resins using specific ceramic compound loads for application directly over surface temps of 427°C (800°F) and up to 650°C (1200°F). It was designed to block and hold the interior temperature on the surface and reduce heat transfer loss to ambient. If minimum temperature is less than 427°C but operation temperature is between 427°C-650°C, SPI will request this formula to be used for lower temperatures.

Mix Part A and Part B together, HPC®-HT Coating offers a 'green', nonflammable, non-toxic formula for high-heat surface applications. HPC®-HT is easily applied, and can be sprayed direct to metal and other high-temperature surfaces up to 650°C. Sold only in 5-gallon pail kits.

NOTE: If the surface temp is below 200°C, the HPC® HT resin will not dry, and will remain soft. It will not build up. Use regular HPC.

TYPICAL USES

- As the high-temp insulation coat for surfaces greater than 250°C, over hot pipes, tanks, and valves which may reach 800°C.
- To hold heat on the surface of the pipe, valve, etc.
- As a system to block conductive and convective heat loss from surface to ambient
- Applied when a hot system cannot be shut down.

NOTE: A respirator should be worn while mixing and applying the HPC®-HT Coating.

APPLICATION METHOD

For specific instructions on surface preparation, mixing and application, please refer to the HPC®-HT Coating Application Instruction Sheet.

If HPC®-HT is applied over hot exterior surfaces, and can be over-coated, SUPER THERM®, or SP SEAL COAT HT.

NOTE: If there is thermal movement on pipes or unit, then a flexible topcoat must be used as SP SEAL COAT HT.

MINIMUM SPREAD RATES (mil thickness)

2.5 sq.ft./gal. = 500 mils dry (0.23 sq.mtr. = 12.5mm)
1.3 sq.ft./gal. = 1000 mils (0.12 q.mtr. = 25mm)
0.8 sq.ft./gallon = 1500 mils dry (0.08sq.m. = 37mm)

NOTES:

- Overspray with a hopper gun can be 15-20% loss and must be factored in. Using a TexSpray 2000, overspray will be less, 10-15%.
- Example: 650°C pipe surface needs between 50-75mm of HT. Submit details to SPI for calculations of thickness and reduced heat loss (thickness applied to customer desires).
- HPC®-HT calculated thickness must be applied in multi-coats and all applied until thickness is achieved. Start and finish a selected area is best practice.
- According to surface temperature, first coat is applied at 0.5mm to allow steam off without causing bubbles. Apply additional coats until you achieve 6mm thickness without bubbles. You can apply 4-6mm per coat after initial coats.
- Make sure that all valves, parts, and release valves are rated for the actual interior temperature that will increase once it is coated. Do not measure outside surface temperature as the interior operation temperatures determine the actual operating temp to decide thickness.
- Apply only over dry surfaces (inside or out) and when sun is shining (for external application). Do not apply on a full cloudy day with a chance for rain, or within 5° of dew point.

PHYSICAL DATA

- Solids: By Weight: 73.8% / By Volume: 81.4%
- Dry Time: If between 400-650°F (204C-345C).; 20 minutes per coat, or until steaming action has finished; over 750°F (5 minutes between coats).
- Lead and chromate free
- Water-borne
- Cures by evaporation on hot surfaces
- Weight: A+B= 7.87 lbs. per gallon (3.32 kilos)
- Vehicle Type: Silicone hybrid blend
- Shelf Life: 1 year, if unopened and maintained under appropriate storage conditions (See SDS)
- Pot Life: 6 hours, or the formula will thicken too much to spray
- VOC Level: 200 grams/liter, 1.67 lbs./gal.
- pH: 11.0-11.5
- Maximum Surface Temperature when applying: 1115°F (600°C)
- Minimum Surface Temperature when applying: 390°F (250°C); less than 250°C, use regular HPC®
- Maximum Surface Temperature "after curing": 1115°F (600°C)

IMPORTANT

Do not take internally. Avoid contact with eyes. If solution does come in contact with eyes, flush immediately with water and contact a physician for medical advice. Avoid prolonged contact with skin or breathing of spray mist. KEEP OUT OF REACH OF CHILDREN.

LIMITATION OF LIABILITY: The information contained in this data sheet is based upon tests that we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the products made by SPI, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge is reliable. The products and information are designed for users having the requisite knowledge and industrial skills, and the end-user has the responsibility to determine the suitability of the product for its intended use.

SPI has no control over either the quality of condition of the substrate, or the many factors affecting the use and application of the product. Therefore, SPI does not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The information contained in this data sheet is subject to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues and the user has the responsibility to ensure that this sheet is current prior to using the product.

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INSULATION AND CORROSION SPECIALISTS

HPC® HT Coating

Application Instructions (9/25/24)

APPLICATION SPECIFICATIONS

The calculated thickness of HPC®-HT should be applied in multi-coats. First coat is 0.5mm (20 mils) then next coat is 1mm (40mils) and third and additional coats applied @ 3mm (120 mils) and more, according to steaming and bubbles. Avoid creating bubbles with a coat being too thick. These coats are applied very quickly, back to back, as the applicator moves along the substrate being coated. Stop-and-start action is not required between coats, unless application area is very small.

1) HPC®-HT Coating must be applied by spray. Use a hopper gun for small applications.
2) Use a Texspray 2000 with the flex head gun or hopper gun using a 6-8 mm nozzle. For specialty applications, contact SPI.
3) For operating temperature below 204°C (400°F), use standard HPC®.
4) If operating temperature is less than 204°C, the dry time between coats could extend to 20-40 minutes because of the silicone resins.
5) Applied HPC®-HT Coating should never be over coated with any coating until moisture content is 5% or less.
6) **Hot Surface Applications**. First, apply a thin priming coat of HPC®-HT Coating at 20 mils wet (0.5mm). Coating will appear to 'bounce off' but this can be counteracted by increasing distance from surface and using high air pressure and quick movement until coating 'bites' onto the surface. Allow coating to cure down and moisture to steam off (approx. 5 minutes). Once steaming has stopped, apply second coat of HPC®-HT Coating at 1mm wet per coat. Subsequent coats can be built with normal procedures as the 'bounce off' action will not occur. Allow coating to completely steam off between coats before applying additional product. With each coat of HPC®-HT the thickness of each coat can increase until proper thickness is achieved. If there is a long delay, after the first coat of HPC-HT is applied, additional coats can be sprayed any time--even the next day. Allow HPC®-HT to fully dry and cure before top coating. If bubbles appear, you are applying too thick.
7) Pot Life: After A&B are mixed together, you have 6 hours to use before it thickens too much to spray.

NOTE: Bubbles can be punctured to release trapped air and pressed down to allow bubble to adhere after initial coats; avoid causing bubbles. If bubbles appear after one pass, wait until the surface dries to touch and pat the bubbles down flat before next pass.

NOTE: Check pail every 10-15 minutes to see if white film forms on top; if so, stir for one minute.

SURFACE PREPARATION

Surface must be clean from all residues and degreasers.

1) If heavy rust needs to be removed prior to application, unit should be shut off and power washed at ambient temperature. Clean by removing pack rust, loose dirt and rust using a wire brush or mechanical tool. Remove mil-scale by grit blast, power tool or hammer gun.

***NOTE*:** The internal temperature of a pipe, valve, or tank cannot be determined using an IR-gun by taking the exterior surface temperature where heat is released into the atmosphere. Surface temperatures will rise to match the temperature of the fluid or gas contained once the surface is coated and the heat is held back.

Make sure that all valves, parts and release valves are rated for the actual interior temperature that will increase once it is coated.

MIXING

NOTE: While mixing and applying HPC®-HT, a paint respirator should be worn at all times.

1) HPC®-HT is made up of two parts: Part A is a white water-based resin blend; Part B is a clear curing agent. When opening Part A you will see a collection of solid material—do not worry. Using a 6" diameter dispersion blade, push your blade through the top crust of ceramics and blend well at a low-medium speed (it takes about 30 seconds).
2) When adding Part B into Part A, stir and lift and drop the blade in the solution with a swift up-and-down until you feel the mixture loosen and blend together the white mixture with the brown. Blend for 3-5 minutes until you achieve a smooth texture, and the color becomes a uniform shade of tan with fibers. Then move blade in a circle from bottom to top to finish.

SPRAYING BLENDED PRODUCT: ***NOTE*: Apply ONLY while in operation so that surface is hot.** Use drop cloths under the pipe and to block other areas from overspray as the resin system mist can put a thin layer of slick residue on floor and on other equipment next to spray area. A tremendous amount of steam will come off because this is water-based.

ADDING HPC®-HT TO TEXPRAY 2000: Begin pouring HPC®-HT into Texspray hopper. Remove spray gun from product hose line. Turn product flow up until product starts to flow. Discard any excess water into waste bucket until only HPC-HT is flowing out of the line. Turn pump pressure off. Place spray gun on product hose line. NOTE: While Texspray is running, always have the air on the gun slightly open to prevent product from clogging the air line. Turn on pump pressure, then pull trigger to spray HPC®-HT into Texspray hopper until there is a solid stream of product. Allow all air to exit out of hose. First coat will seem liquid and can only be applied very thinly and may have some drips. After it dries, the second and following coats are easier and able to be applied heavier or thicker without sag or drips. As you apply the third and remaining coats, do not apply more than 5mm (200 mils) and make sure that the coat is dry before applying the next coat. If you see the coat or layer move, then stop applying and allow it to dry.

NOTE: For start & stop (lunch), clean equipment with soap and water/Simple Green mixture 50/50 anytime a delay of 1 hour or more.
Place gun and tip in water/Simple Green solution to keep tip from clogging if laying it down for one hour or more.

SAFETY NOTES:

1) A full-face (PPE) Respirator with carbon filter must be used when spraying by anyone in the area.
2) The steam release from the water-blended resins has a slight odor and is initially irritating to the eyes and respiratory. The steam vapor must be properly ventilated, using fans to exit it out of the building or structure while HPC®-HT is being applied.

CLEAN-UP EQUIPMENT

During breaks, spray systems should be flushed with soap/water, and dispose of waste product properly.

Storage of Product: Store separate components of HPC®-HT Coating between 40°F (5°C) and 120°F (49°C) according to the related safety indications on the SDS for each part (A&B).

SAFETY DATA SHEET

SECTION 1: Identification of the substance

1.1 PRODUCT IDENTIFIER: HPC-HT, Part A
GHS PRODUCT INDENTIFIED: Global Harmonized System #3209.10.0000

1.2 PRODUCT USE: Blended with Part B to create high-temperature spray-on insulation, up to 650C

1.3 SUPPLIER: SUPERIOR PRODUCTS INT'L II, INC.
10835 W. 78th St., Shawnee, KS 66214 USA

1.4 EMERGENCY TELEPHONE NUMBER: 800-424-9300; 202/483-7616

SECTION 2: Hazard identification

2.1 Classification of the substance: This products is a water-based coating and is not classified as dangerous for supply or conveyance.

2.2 Label elements: Signal Word: WARNING Hazard Symbol:

Hazard Statement: Irritant, dermal sensitiser, acute toxicity (harmful).
H320 causes eye irritation. H317 may cause an allergic skin reaction.

SECTION 3: Composition/information on ingredients

3.2 Ingredient compositions	%	CAS/PIN	TLV
Silicone Resin	53.0	897393.56.5	NAV
Borosilicate	40.0	65997-17-3	NAV
Mica / additives	3.0	58043-05-3	NAV
Water	4.0	N/A	

SECTION 4: First aid measures

4.1 Description of first aid measures
INHALATION: Remove to fresh air.
EYES: Flush w/water for at least 15 minutes; see physician if irritation continues.
SKIN: Wash affected areas w/mild soap & water.
INGESTION: Do not induce vomiting. Give 1-2 glasses milk or water. Seek medical attention according to amount of product ingested.

SECTION 5: Firefighting measures

5.1 Extinguishing media: Water, water fog, dry chemical, foam or C02

5.2 Special hazards arising from the substance or mixture:
Hazardous combusion products: Carbon monoxide, methacrylate and other noxious gases.
Autoignition Temperature: NAP Minimum ignitions energy: NAV
Flash point: NAP Flammable limits: (Lower) NAP / (Upper): NAV%
Sensitivity to static discharge? NO Sensitivity to mechanical impact? NO
Conditions of flammabillity: Not flammable; water-based product

5.3 Advice for firefighters: Firefighters should wear full-body protection & SCBA

SECTION 6: Accidental release measures

6.1 Personal precautions: Use protective clothing; use particulate respirator when spraying.

6.3 Methods of cleanup: Use kitty litter or similar absorbent to contain spill.

SECTION 7: Handling and storage

7.1 Precautions for safe handling: Treat as paint product. Use ventilation and protective equipment to suit conditions of use.

7.2 Conditions for safe storage: Keep from freezing. Store below 50C degrees. Keep container closed tightly to prevent drying out.

SECTION 8: Exposure Controls/personal protection

8.1 Control parameters: Avoid inhalation of liquid when applying. Use particulate respirator.
ENGINEERING CONTROLS: Use mechanical exhaust ventilation to control aerosol or mist if sprayed.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:
PHYSICAL STATE: Liquid SOLUBILITY IN WATER: Soluable pH: NAV
APPEARANCE AND ODOR: Grey, mild acrylic odor FREEZING POINT: 32F degrees
BOILING POINT: 35C. deg. SPECIFIC GRAVITY: 1.0 ODOR THRESHOLD: NAV
COEFF. WATER/OIL: NAV EVAPORATION RATE: slow%
VAPOUR DENSITY (Air=1): 1.11 VAPOUR PRESSURE: NAV CORROSIVE: NO

SECTION 10: Stability and reactivity

10.1 Conditions of Reactivity: Stable
10.2 Conditions of Instability: Stable under normal conditions
10.3 Possibility of hazardous reactions: None known.
10.4 Conditions to avoid: None known.
10.5 Incompatible materials: Strong acids or bases
10.6 Hazardous decomposition products: None known, no hazardous polymerization

SECTION 11: Toxicology Information

11.1 Information on toxicological effects:
Acute toxicity - oral: Not meant to be ingested; no known significant effects or critical hazards
Acute toxicity - inhalation: Vapors or mist can cause mild irritation.
Acute toxicity - dermal: Liquid splash could result in eye or nose irritations and/or headach
Health effects to chronic exposure: Excessive exposure to liquid product may result in minor irritations

SECTION 12: Ecological Information

12.1 Toxicity
No known toxins as product is water-based and not deemed hazardous.

SECTION 13: Disposal considerations

13.1 Waste treatment methods: Dispose of as paint according to local regulations.

SECTION 14: Transport information

This product is not regulated in any capacity of transport.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance: No listed materials under Superfund Amendments & Reauthorization Act of 1988 (SARA) 302, 304, 311, 312. Meets European codes under Article 59(10) of the Reach regulation.

SECTION 16: Other information

PREPARED BY: J. Pritchett, Superior Products Int'l II, Inc. **DATE**: 4/13/23

SAFETY DATA SHEET

SECTION 1: Identification of the substance

1.1 PRODUCT IDENTIFIER: HPC-HT, Part B
GHS PRODUCT INDENTIFIED: Global Harmonized System #3209.10.0000

1.2 PRODUCT USE: Blended with Part A to create high-temperature spray-on insulation, up to 650C

1.3 SUPPLIER: SUPERIOR PRODUCTS INT'L II, INC.
10835 W. 78th St., Shawnee, KS 66214 USA

1.4 EMERGENCY TELEPHONE NUMBER: 800-424-9300; 202/483-7616

SECTION 2: Hazard identification

2.1 Classification of the substance: This products is a water-based coating and is not classified as dangerous for supply or conveyance.

2.2 Label elements: Signal Word: WARNING Hazard Symbol:

Hazard Statement: Alkaline; irritating to eyes and skin.
H315 causes eye irritation. H319 causes serious eye irritation.

SECTION 3: Composition/information on ingredients

3.2 Ingredient compositions	%	CAS/PIN	TLV
Silicic acid, sodium salt	80.0	1344-09-8	NAV
Mica / additives	20.0	58043-05-3	NAV

SECTION 4: First aid measures

4.1 Description of first aid measures
INHALATION: Remove to fresh air.
EYES: Flush w/water for at least 15 minutes; see physician if irritation continues.
SKIN: Wash affected areas w/mild soap & water.
INGESTION: Do not induce vomiting. Wash out mouth with water and give 1-2 glasses milk or water. Seek medical attention according to amount of product ingested.

SECTION 5: Firefighting measures

5.1 Extinguishing media: Water, water fog, dry chemical, foam or C02

5.2 Special hazards arising from the substance or mixture:
Hazardous combusion products: Carbon monoxide, methacrylate and other noxious gases.
Autoignition Temperature: NAP Minimum ignitions energy: NAV
Flash point: NAP Flammable limits: (Lower) NAP / (Upper): NAV%
Sensitivity to static discharge? NO Sensitivity to mechanical impact? NO
Conditions of flammabillity: Not flammable; water-based product

5.3 Advice for firefighters: Firefighters should wear full-body protection & SCBA

SECTION 6: Accidental release measures

6.1 Personal precautions: Use protective clothing; use particulate respirator when spraying.

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SECTION 7: Handling and storage

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8.1 Control parameters: Avoid inhalation of liquid when applying. Use particulate respirator.
ENGINEERING CONTROLS: Use mechanical exhaust ventilation to control aerosol or mist if sprayed.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

PHYSICAL STATE: Liquid	SOLUBILITY IN WATER: Soluable	pH: 11-12
APPEARANCE AND ODOR: Clear, slight odor		FREEZING POINT: NAP
BOILING POINT: 100c	SPECIFIC GRAVITY: 1.32	ODOR THRESHOLD: NAV
COEFF. WATER/OIL: NAV		EVAPORATION RATE: NAP
VAPOUR DENSITY (Air=1): 1.4	VAPOUR PRESSURE: NAV	CORROSIVE: NO

SECTION 10: Stability and reactivity

10.1 Conditions of Reactivity: Stable

10.2 Conditions of Instability: Stable under normal conditions

10.3 Possibility of hazardous reactions: None known.

10.4 Conditions to avoid: None known.

10.5 Incompatible materials: Strong acids or bases

10.6 Hazardous decomposition products: None known, no hazardous polymerization

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Acute toxicity - oral: Not meant to be ingested; no known significant effects or critical hazards

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Health effects to chronic exposure: Excessive exposure to liquid product may result in minor irritations

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SECTION 16: Other information

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