



SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

**INSULATION
AND
CORROSION
SPECIALISTS**

HPC® HT Coating

Technical Data Sheet (11/22/22)

DESCRIPTION

HPC®-HT is a two-part (9 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 232°C (450°F) and up to 600°C (1112°F). It was designed to block and hold the interior temperature on the surface and reduce heat transfer loss to ambient.

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 600°C. Sold only in 5-gallon pail kits.

NOTE: If the surface temp is below 200°C, the ®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
- 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:

1. 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%.
2. Example: 600°C pipe surface needs between 37-60mm of HT. Submit details to SPI for calculations of thickness and reduced heat loss.
3. 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.
4. 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.
5. Make sure that all valves, parts, and release valves are rated for the actual interior temperature that will increase once it is coated.
6. 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 comes in direct 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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HPC® HT Coating

Application Instructions (11/18/20)

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 232°C (450°F), use standard HPC®.
- 4) If operating temperature is less than 300°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 TEXSPRAY 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 (E/WB/10/02)

SECTION I - IDENTIFICATION OF THE PRODUCT:

PRODUCT NAME: HPC-HT, Part A
 GHS PRODUCT IDENTIFIER: Global Harmonized System #3209.10.000
 RECOMMENDED USE: Blended with Part B to create high-temperature spray-on insulation, up to 650C
 MANUFACTURER: Superior Products International II, Inc.
 ADDRESS: 10835 W. 78th St., Shawnee, KS 66214 USA
 EMERGENCY TELEPHONE NUMBER: **800/424-9300; 202/483-7616**

SECTION II - HAZARD IDENTIFICATION:

This product is 100% solid and not classified as dangerous for supply or conveyance. The ingredients are water-reduceable and fall well within the acceptable safety limits. No toxics or toxic off-gassing is present, but steaming during application presents co-solvents that can cause eye irritation.

SECTION III - COMPOSITION & INFORMATION ON INGREDIENTS:

<i>Haz. ingredients</i>	<i>%</i>	<i>CAS/PIN</i>	<i>LD-50 (species/route)</i>	<i>LC50 (species)</i>
Silicone resin	53.0	897393.56.5	NAV	NAV
Borosilicate	40.0	65997-17-3	NAV	NAV
Mica/additives	3.0	58043-05-3	NAV	NAV
Water	4.0	n/a		

SECTION IV - FIRST AID MEASURES:

EYES: Flush with water for at least 15 minutes; consult physician if irritation continues.
INGESTION: Do not induce vomiting. Drink 1-2 glasses milk/water. Seek medical attention according to amount of product ingested.
SKIN: Wash with mild soap and water.
INHALATION: Remove to fresh air.

SECTION V - FIREFIGHTING MEASURES:

CONDITIONS OF FLAMMABILITY: Not Flammable
HAZARDOUS COMBUSTION PRODUCTS: Carbon oxides, silocon oxides, oxides of phosphorus sulphur oxides
AUTOIGNITION TEMP.: NAV **MINIMUM IGNITION ENERGY:** NAV
FLAMMABLE LIMITS: (Lower) NAV% (Upper) NAP% **FIRE POINT:** NAV
FLASH POINT & METHOD: 44C **SENSITIVITY TO MECHANICAL IMPACT?** No
SENSITIVITY TO STATIC DISCHARGE? No
SPECIAL PROCEDURES: Firefighters should wear full-body protection & SCBA
MEANS OF EXTINCTION: Water, water fog, dry chemical, foam or C02

SECTION VI - ACCIDENTAL RELEASE MEASURES:

Use kitty litter or similar absorbent to contain spill. Neutralize w/solution of 80% water/20% Tergitol TMN-10. Use protective clothing; use non-sparking tools.

SECTION VII - HANDLING AND STORAGE:

Storage Requirements: Maintain temperature between 32-122F. degrees; average shelf life is 1 year @ 77F. degrees.

NAP = Not Applicable

NAV = Not Available

SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:

PERSONAL PROTECTIVE EQUIPMENT: Avoid inhalation of liquid when applying. Use particulate respirator.

ENGINEERING CONTROLS: Use mechanical ventilation to control aerosol or mist if product is sprayed.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL STATE: Liquid	SOLUBILITY IN WATER: Soluble
APPEARANCE AND ODOR: White, ammonia odor	
FREEZING POINT: 32F	BOILING POINT: 35C pH: NAV
SPECIFIC GRAVITY: 1.0	ODOR THRESHOLD: NAV
COEFF. WATER/OIL: 1	EVAPORATION RATE: 1.0
VAPOUR DENSITY (Air = 1): 1.11	VAPOUR PRESSURE: NAV

SECTION X - STABILITY AND REACTIVITY:

CONDITIONS OF REACTIVITY: stable **CONDITIONS OF INSTABILITY:** stable
CHEMICAL INCOMPATIBILITY: None known
HAZARDOUS DECOMPOSITION PRODUCTS: None known, no hazardous polymerization **CORROSIVE BEHAVIOR?** No

SECTION XI - TOXICOLOGICAL INFORMATION:

ROUTES OF ENTRY: EYE CONTACT X INGESTION X
EXPOSURE LIMITS: mica-3mg/m3 (ACGIH)
EFFECTS OF ACUTE EXPOSURE: eye or nose irritation and/or headache.
EFFECTS OF CHRONIC EXPOSURE: Excessive exposure to powders may result in minor irritations.
MUTAGENICITY: NAV **TERATOGENICITY:** NAV
REPRODUCTIVE TOXICITY: NAV **SENSITIZATION:** Not expected
CARCINOGENICITY: Ingredients not listed
IRRITANCY: Possible eye irritation if not washed off.

SECTION XII - ECOLOGICAL INFORMATION:

Air -this product is environmentally-friendly and poses no threat to the air.
Water-no threat.
Soil -the resin contents are biodegradeable in ground soils over a period of time.
No ecological hazards are known to exist.

SECTION XIII - WASTE DISPOSAL:

Product spill should be contained by previously described absorption methods, and dried product disposed of as normal industrial waste according to all federal, state or governmental regulations.

SECTION XIV - TRANSPORT INFORMATION:

The only restriction to carriage is for protection against freezing as contents are 100% solid. Tariff code: 3209.10.000

SECTION XV - REGULATORY INFORMATION:

Regulatory agencies and restrictions are minimal regarding conveyance or use of water-based products other than what has been specifically addressed.

SECTION XVI - OTHER INFORMATION:

SAFETY DATA SHEET (E/WB/10/02)

SECTION I - IDENTIFICATION OF THE PRODUCT:

PRODUCT NAME: HPC-HT, Part B
 GHS PRODUCT IDENTIFIER: Global Harmonized System #3209.10.000
 RECOMMENDED USE: Blended with Part A to create high-temperature spray-on insulation
 MANUFACTURER: Superior Products International II, Inc.
 ADDRESS: 10835 W. 78th St., Shawnee, KS 66214 USA
 EMERGENCY TELEPHONE NUMBER: **800/424-9300; 202/483-7616**

SECTION II - HAZARD IDENTIFICATION:

This product is 100% solid and not classified as dangerous for supply or conveyance. The ingredients are water-reduceable and fall well within the acceptable safety limits. No toxics or toxic off-gassing is present, but steaming during application presents high pH that can cause eye irritation.

SECTION III - COMPOSITION & INFORMATION ON INGREDIENTS:

<i>Haz. ingredients</i>	<i>%</i>	<i>CAS/PIN</i>	<i>LD-50 (species/route)</i>	<i>LC50 (species)</i>
Soda	80.0	1310-73-2	NAV	NAV
Mica/additives	20.0	58043-05-3	NAV	NAV

SECTION IV - FIRST AID MEASURES:

EYES: Flush with water for at least 15 minutes; consult physician if irritation continues.
INGESTION: Do not induce vomiting. Drink 1-2 glasses milk/water. Seek medical attention according to amount of product ingested.
SKIN: Wash with mild soap and water.
INHALATION: Remove to fresh air.

SECTION V - FIREFIGHTING MEASURES:

CONDITIONS OF FLAMMABILITY: Non-flammable
HAZARDOUS COMBUSTION PRODUCTS: NAP
AUTOIGNITION TEMP.: NAV **MINIMUM IGNITION ENERGY:** NAV
FLAMMABLE LIMITS: (Lower) NAV% (Upper) NAP% **FIRE POINT:** NAV
FLASH POINT & METHOD: 44C **SENSITIVITY TO MECHANICAL IMPACT?** No
SENSITIVITY TO STATIC DISCHARGE? No
SPECIAL PROCEDURES: Firefighters should wear full-body protection & SCBA
MEANS OF EXTINCTION: Water, water fog, dry chemical, foam or C02

SECTION VI - ACCIDENTAL RELEASE MEASURES:

Use kitty litter or similar absorbent to contain spill. Neutralize w/solution of 80% water/20% Tergitol TMN-10. Use protective clothing; use non-sparking tools.

SECTION VII - HANDLING AND STORAGE:

Storage Requirements: Maintain temperature between 32-122F. degrees; average shelf life is 1 year @ 77F. degrees.
Handling Procedures/Equipment: Ground all containers; use non-sparking tools.

NAP = Not Applicable

NAV = Not Available

SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:

PERSONAL PROTECTIVE EQUIPMENT: Avoid inhalation of liquid when applying. Use particulate respirator.

ENGINEERING CONTROLS: Use mechanical ventilation to control aerosol or mist if product is sprayed.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL STATE: Liquid	SOLUBILITY IN WATER: Soluble
APPEARANCE AND ODOR: Clear, slight order	
FREEZING POINT: 32F	BOILING POINT: 35C pH: 12
SPECIFIC GRAVITY: 1.32	ODOR THRESHOLD: NAV
COEFF. WATER/OIL: NAV	EVAPORATION RATE: 1.0
VAPOUR DENSITY (Air = 1): 1.11	VAPOUR PRESSURE: NAV

SECTION X - STABILITY AND REACTIVITY:

CONDITIONS OF REACTIVITY: stable **CONDITIONS OF INSTABILITY:** stable
CHEMICAL INCOMPATIBILITY: None known
HAZARDOUS DECOMPOSITION PRODUCTS: None known, no hazardous polymerization **CORROSIVE BEHAVIOR?** No

SECTION XI - TOXICOLOGICAL INFORMATION:

ROUTES OF ENTRY: EYE CONTACT X INGESTION X
EXPOSURE LIMITS: mica-3mg/m3 (ACGIH)
EFFECTS OF ACUTE EXPOSURE: eye or nose irritation and/or headache.
EFFECTS OF CHRONIC EXPOSURE: Excessive exposure to powders may result in minor irritations.
MUTAGENICITY: NAV **TERATOGENICITY:** NAV
REPRODUCTIVE TOXICITY: NAV **SENSITIZATION:** Not expected
CARCINOGENICITY: Ingredients not listed
IRRITANCY: Possible eye irritation if not washed off.

SECTION XII - ECOLOGICAL INFORMATION:

Air -this product is environmentally-friendly and poses no threat to the air.
Water-no threat.
Soil -the resin contents are biodegradeable in ground soils over a period of time.
No ecological hazards are known to exist.

SECTION XIII - WASTE DISPOSAL:

Product spill should be contained by previously described absorption methods, and dried product disposed of as normal industrial waste according to all federal, state or governmental regulations.

SECTION XIV - TRANSPORT INFORMATION:

The only restriction to carriage is for protection against freezing as contents are 100% solid. Tariff code: 3209.10.000

SECTION XV - REGULATORY INFORMATION:

Regulatory agencies and restrictions are minimal regarding conveyance or use of water-based products other than what has been specifically addressed.

SECTION XVI - OTHER INFORMATION: