



SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

HPC® Intermediate (HPCI)

**INSULATION
AND
CORROSION
SPECIALISTS**

Technical Data Sheet (9/25/24)

DESCRIPTION

HPC Intermediate (HPCI) Coating is designed to control heat transfer on surface temperatures between 400°F (200°C) up to 800°F (427°C). It is water-borne and extremely lightweight in appearance. HPC® Coating uses a special acrylic/silicone resin blend with specific ceramic compounds added to provide a non-conductive block against heat transfer.

HPCI offers a "Green", non-flammable, non-toxic formula for high heat surface applications over standard to super steam pipe or oven wall construction. HPCI Coating is easily applied using a texture sprayer, and can be applied over metal, concrete, wood, and other substrates.

If HPCI can be applied over flat steel surfaces and adhere.

TYPICAL USES

- As an insulation system over hot pipes, tanks, and valves
- To block heat loss from surfaces of over ambient or operation temperatures on lines and valve
- As a system to block conductive and convective heat
- Easily applied when a hot system cannot be shut down
- Can be applied over steel, concrete and other building material

APPLICATION METHOD

HPCI can be used for applications between 400°F/204°C to 800°F/427°C with temporary peak of 900°F (482°F). It must be applied according to Manufacturer's Application Instructions. NOTE: Applications applied over 450°F (232°C) may see the resins turn darker in color next to the hot surface, but the HPCI will continue to work as designed.

HPCI can be applied to metal and any hot surface.

The application is applied using a texture sprayer. For specific instructions on surface preparation, mixing and application, please refer to the SPI Application Instruction sheet for HPCI.

If HPCI is applied on surfaces outdoors, there is no need for a top coat unless a color is needed.

HPCI must be completely dry before applying topcoat.

If needed, Multi-Mesh Membrane System is used on hot pipes when continuous cycles cause out-of-norm vibration or movement, and where continuous impact caused by workers handling the hot pipe is unavoidable. Apply Multi-Mesh Membrane between layers of HPCI.

NOTE: IF YOU CHANGE TEMPERATURE RANGES, CONTACT SPI REPRESENTATIVE FOR ADVICE.

NOTE: When surfaces cycle from ambient up to 800°F (427°C) with temporary peak of 850°F (454°C), this does not affect adhesion.

TESTS AND CERTIFICATIONS

- ISO8302/ASTM C 177 (similar to HPC) – Thermal Conductivity (0.063 W / mK @ 86°F/30°C)
- USDA Approved

MINIMUM SPREAD RATES (mil thickness)

25.6 sq. ft./gal = 50 mils dry film thickness
12.8 sq. ft./gal = 100 mils dry film thickness
6.4 sq. ft./gal = 200 mils dry film thickness
5.1 sq. ft./gal = 250 mils dry film thickness

PHYSICAL DATA

- Solids: By Weight: 56.5.0% / By Volume: 80.00%
- Dry Time: If between 400-800°F.; 5-10 minutes per coat, or until steaming action has finished.
- Lead and chromate free
- Water-borne
- Cures by evaporation
- Weight: 5.4 lbs. per gallon
- Vehicle Type: Acrylic/silicone Blend
- Shelf Life: Up to 2 years if unopened under appropriate storage conditions (See MSDS)
- VOC Level: 90 grams/liter, 0.75 lbs./gal.
- pH: 8.5
- Maximum Surface Temperature when applying: 800°F (427°C)
- Minimum Surface Temperature when applying: 300°F (149°C)
- Maximum Surface Temperature after curing: 800°F (427°C) with temporary peak of 900°F (482°C)*

NOTE: Apply only over dry surfaces (inside or out) and when sun is shining (for external application). Do not apply in the rain or if there are or have been heavy cloud conditions or high humidity for a prolonged series of days. Conditions MUST be dry and sunny or partly cloudy with enough sun to dry coating film before nightfall.

IMPORTANT

Do not take internally. Avoid contact with eyes. If solution comes 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.



HPC Intermediate

Application Instructions (1/23/24)

APPLICATION SPECIFICATIONS

The calculated thickness of HPC INTERMEDIATE Coating should be applied in multi-coats. First coat is 0.1mm (1-2 mils) then next coat is 1mm (20mils) 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 INTERMEDIATE Coating must be applied by spray. Use a hopper gun for small applications.
- 2) Use a Texspray 2000 or hopper gun using a 6-8 mm nozzle. For specialty applications, contact SPI.
- 3) For operating temperature below 205°C (400°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 INTERMEDIATE 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 INTERMEDIATE 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 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 INTERMEDIATE Coating the thickness of each coat can increase until proper thickness is achieved. If there is a long delay, after the first coat of HPC INTERMEDIATE Coating is applied, additional coats can be sprayed any time—even the next day. Allow HPC INTERMEDIATE Coating to fully dry and cure before top coating. If bubbles appear, you are applying too thick.

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 the coating, a paint respirator should be worn at all times.

- 1) HPC INTERMEDIATE Coating is made up of one part: white to off-white liquid. When opening 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 mixing, 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 tan mixture with the clear. Blend for 3-5 minutes until you achieve a smooth texture, and the color becomes a uniform shade. 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 INTERMEDIATE COATING TO TEXSPRAY 2000:

Begin pouring the coating 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 the coating 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 the coating 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 INTERMEDIATE Coating 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 INTERMEDIATE Coating between 40°F (5°C) and 120°F (49°C) according to the related safety indications on the SDS.

SAFETY DATA SHEET

SECTION 1: Identification of the substance

- 1.1 **PRODUCT IDENTIFIER:** HPC INTERMEDIATE
GHS PRODUCT IDENTIFIED: Global Harmonized System #3209.10.0000
- 1.2 **PRODUCT USE:** To create high-temperature spray-on insulation, 400F-700F
- 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 product is a water-based coating and is not classified as dangerous for supply or conveyance. The ingredients are water-reduceable and fall well within the acceptable safety limits.

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	<u>Ingredient compositions</u>	<u>%</u>	<u>CAS/PIN</u>	<u>TLV</u>
	Silicone resin	56%	897393.56.5	NAV
	Borosilicate	9%	65997-17-3	NAV
	Mica/additives	27%	58043-05-3	NAV
	Water	8%	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 CO2

5.2 **Special hazards arising from the substance or mixture:**

Hazardous combustion 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 flammability: 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: Soluble pH: 8
 APPEARANCE AND ODOR: Light tan, mild acrylic odor FREEZING POINT: 32F degrees
 BOILING POINT: 35C. deg. SPECIFIC GRAVITY: 1.0 ODOR THRESHOLD: NAV
 COEFF. WATER/OIL: NAV EVAPORATION RATE: 1.0 VOLATILES: NAV
 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