



# SPI COATINGS

PROVEN PERFORMANCE • REAL WORLD SOLUTIONS

**INSULATION  
AND  
CORROSION  
SPECIALISTS**

## LINING KOTE UHS

### Technical Data Sheet (10/12/16)

#### DESCRIPTION

LINING KOTE UHS is a two-part pigmented epoxy coating, which will produce a hard, tough coating film. Designed to for use on the interior of tanks, this epoxy coating was built to resist the toughest acid, chemical or solvent environments. LINING KOTE UHS has outstanding adhesion and can withstand direct impact. It is resistant to water, humidity and high heat. LINING KOTE UHS is made with a high molecular weight base and cure for strength and durability.

#### TYPICAL USES:

- Superb acid and superior alkali resistance.
- As a lining topcoat for acid tanks (two coats required) with 10-day cure time for both interior and exterior splash;
- As a lining topcoat for chemical tanks (three coats required);
- As a lining topcoat for solvent tanks (two coats required);
- As a lining topcoat for ballast tanks (two coats required).

#### APPLICATION METHODS

LINING KOTE can be applied to concrete or masonry substrates. The coating can be applied by spray, brush or roller. For specific instructions on surface preparation, mixing and application, please refer to the SPI's application instructions for LINING KOTE UHS.

**NOTE:** Special attention should be paid to the number of coats for specific types of tanks and the curing time required before being put back into service.

**NOTE:** This product must not be applied on or within 2 inches of chlorinated rubber.

**NOTE:** Never use mineral spirits to prep surfaces or to thin this product.

**NOTE:** Pot life = 30-45 minutes @ 70°F (21°C)

#### TESTS AND CERTIFICATIONS

1. USDA Approved
2. Marine Approvals for Salt Water/Maritime Use:
  - US Coast Guard
  - ABS (American Bureau of Shipping)
  - IMO (International Marine Organization)
3. Abrasion (ASTM D4060)

#### MINIMUM SPREAD RATES (mil thickness)

**Porous Surfaces** – Apply 2-3 applications of LINING KOTE UHS @ 200 sq ft/gallon; (18 sq mtr/gallon); 8 mils wet / 6.4 mils dry (200 microns wet / 160 dry) each coat. This will leave a total thickness of 12.2 (2 coats) or 19.2 (3 coats) dry mils.

**Metal Surfaces** – Apply MOIST METAL GRIP or approved primer as directed, and apply 2 applications of Lining Kote UHS @ 200 sq ft/gallon; (18 sq mtr/gallon); 8 mils wet / 4 mils dry (200 microns wet / 160 dry) each coat. This will leave a total thickness of 12.2 (2 coats) dry mils.

**NOTE:** Surface and ambient temperatures will determine cure-time. Introduction of heat beneath or over surface will enhance the cure time.

No induction time is necessary over 70°F (21°C).

**NOTE:** RUST GRIP is not compatible with LINING KOTE UHS. MOIST METAL GRIP should be used in place of RUST GRIP as a primer. Apply MMG as directed (8 mils wet/4 mils dry).

#### PHYSICAL DATA

- ◆ Reacted Solids: White – By weight 89% / By volume 80%
- ◆ Two hours to tack free at 70°F (21°C)
- ◆ Overcoat window is from tack free to 48 hours @ 70°F
- ◆ Lead- and Chromate-free
- ◆ Cures By: Chemical reaction
- ◆ Reacted Weight: 12.6 lbs/gallon
- ◆ Vehicle Type: Amine- epoxy
- ◆ Shelf Life: Up to three years unopened under appropriate storage conditions (See MSDS)
- ◆ Mix Ratio: 3 parts base to 1 part curing agent by volume
- ◆ Reactive VOC - White: 0.64 lbs/gal; 76.0 grams per liter
- ◆ Tinting: Can be tinted any color - minimum of 250 gallons.
- ◆ Maximum Surface Temperature when applying; 100°F (38°C).
- ◆ Minimum Surface Temperature when applying; 40°F (4.5°C).
- ◆ Maximum Surface Temperature after curing; 275°F (135°C)
- ◆ Failure will occur at a constant temperature equal to or greater than 295°F (146°C); consult SPI for intermittent temperatures greater than 295°F (146°C)
- ◆ pH spread according to % solutions: 1-14
- ◆ Non-sparking coating film

#### SAFETY PRECAUTIONS

Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: proper ventilation, use of proper lamps, wearing of protective clothing and masks, tenting, and proper separation of application areas. This coating is flammable. Keep away from flame, fire, or other sources of ignition. For more specific safety procedures, please refer to the LINING KOTE UHS Material Safety Data Sheet. **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.



# SPI COATINGS

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## LINING KOTE UHS

### Application Instructions (1/28/19)

LINING KOTE UHS is a two-part pigmented epoxy coating, which will produce a hard, tough coating film. Designed to for use on the interior of tanks, this epoxy coating was built to resist the toughest acid, chemical or solvent environments. LINING KOTE UHS has outstanding adhesion and can withstand extreme abrasion. It is resistant to water, humidity and high heat. LINING KOTE UHS is made with a high molecular weight base and cure for the highest level of chemical resistance.

#### **GUIDELINES REGARDING pH SCALE**

Use LINING KOTE UHS when facing pH values from 1-14.

#### **SURFACE PREPARATION**

Surface must be clean from oil, tar, rust, grease, salts, and films.

- 1) Use general degreaser if needed.
- 2) Clean surface using TSP (tri-sodium-phosphate) or a citrus cleaner to release dirt and degreaser residue.
- 3) Pressure-wash if possible @ 3500 psi.
- 4) Salt contamination on a surface can come as a result of salt water, fertilizers, and car exhaust. Use Chlor\*Rid or equivalent to decontaminate surface if salts are present. Acceptable levels: Nitrates: 5-10 mcg/cm<sup>2</sup>, Sulfates: 5-10 mcg/cm<sup>2</sup>, Chlorides: 3-5 mcg/cm<sup>2</sup>

#### **Surface must be completely dry before applying.**

- 1) LINING KOTE must be applied during proper temperatures (below) and the prescribed overcoat window of the coating over which it will be applied.
- 2) If applied over an existing coating having a glossed or shiny finish, it must be sanded and roughed to remove gloss before application, to improve the profile.
- 3) Additional coats of LINING KOTE UHS can only be applied when the 1<sup>st</sup> coat becomes tacky to the touch and has little to no transfer of coating. After this stage, the surface must be lightly sanded to improve the profile.

#### **MIXING**

- 1) Open pail, mix base with curing agent (3 parts base : 1 part curing agent) (ratio by volume, not by weight)
- 2) Mix by hand for two minutes, or using drill and mixing blade for a minimum of 30 seconds with NO vortex.

#### **POT LIFE**

30-45 minutes at 70°F (21°C) - 30 minutes or less at 90°F (32°C)

#### **APPLICATION**

LINING KOTE UHS can be applied by brush, roller or spray; however, the preferred method is by air or airless sprayer.

- 1) If application is by brush, use a soft bristle brush.
- 2) If application is by roller, use a 1/4-1/2-inch nap roller, depending upon surface.
- 3) If application is by spray, use a standard airless sprayer (1½ gallons/minute at 3,300 psi or less) and .017-.027 tip.
- 4) Overcoat window is from tack free to 48 hours @ 70°F.
  - **NOTE:** The number of applications and the thickness of each should be in accordance with the job specifications.
  - **NOTE:** Temperatures must always be a minimum of 5 degrees above the dew point during application.

#### **MINIMUM SPREAD RATES (mil thickness)**

**Porous Surfaces** – Apply 2-3 applications of LINING KOTE @ 200 sqft/gallon; (18 sqmtr/gallon); 8 mils wet, 6.4 mils dry (200 microns wet, 160 microns dry) each coat. This will leave a total thickness of 12.8 dry mils (2 coats) or 19.2 (3 coats).

**Metal Surfaces** – Apply Moist Metal Grip as a primer and apply 2-3 applications of LINING KOTE UHS as directed above. **Important:** When applying LINING KOTE over Moist Metal Grip, if relative humidity (RH) is <60% (and/or low temperature is below 70°F), Moist Metal Grip must be given extended time to cure (6-36 hours) due to low RH and low temp.

**Note:** Surface and ambient temperatures will determine cure time. Introduction of heat beneath or over surface will enhance cure time.

#### **CURE TIME**

**Note:** Surface and ambient temperatures will determine cure time. Introduction of heat over surface will enhance the cure time. Average time at 70°F is 7 days.

**Induction Period:** None is required at 70°F or above.

#### **TEMPERATURE**

- 1) Apply between 40°F. and 120°F.
- 2) Store between 40°F. and 100°F. according to hazmat standards indicated on MSDS.

#### **CLEAN-UP EQUIPMENT**

- 1) After completion, spray systems should be flushed and cleaned with MEK or other comparable solvents.
- 2) After completion, brushes can be cleaned with MEK or comparable solvents, store and reused.

# SAFETY DATA SHEET (E/S/10/02)

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## **SECTION I - IDENTIFICATION OF PRODUCT AND COMPANY:**

PRODUCT IDENTIFIER: LINING KOTE Base  
GHS PRODUCT IDENTIFIED: Global Harmonized System #3208.90.0000  
CHEMICAL TYPE: Bisphenol-A Type Epoxy  
MANUFACTURER: SUPERIOR PRODUCTS INT'L II, INC.  
ADDRESS: 10835 W. 78th St., Shawnee, KS 66214  
PRODUCT USE: Tank and pipe lining  
EMERGENCY TELEPHONE NUMBER: **800/424-9300; 202/483-7616**



## **SECTION II - HAZARD IDENTIFICATION:**

The product is a flammable, solvent-based polyurethane and should be treated according to all known safety precautions. Refer to Section VII for Storage and Handling recommendations, Section VIII for Personal Protection, Section XIV for transport.

## **SECTION III - HAZARDOUS INGREDIENTS:**

<u>HAZARDOUS INGREDIENTS</u>	<u>%</u>	<u>CAS/PIN</u>	<u>TLV</u>	<u>PEL</u>
Ethylene Glycol Propyl Ether	19.3	2807-30-9	50.00	50.00

## **SECTION IV - FIRST AID MEASURES:**

**INHALATION:** Remove to fresh air. Give oxygen if required. Seek medical help.  
**EYES:** Flush w/clear lukewarm water for 15-20 minutes, occasionally lifting eyelids. See physician.  
**SKIN:** Remove contaminated clothing. Wash affected areas & clothing w/mild soap & water.  
**INGESTION:** Do not induce vomiting. Keep at rest. Get prompt medical attention.

## **SECTION V - FIREFIGHTING MEASURES:**

**CONDITIONS OF FLAMMABILITY:** Spraying or other activities to create finely divided droplets around open flame/sparks  
**HAZARDOUS COMBUSTION PRODUCTS:** Carbon monoxide, aldehydes, fumes  
**AUTOIGNITION TEMP.:** >499C. degrees    **FLASH POINT & METHOD:** 120F. TCC  
**FLAMMABLE LIMITS: (Lower) 1.3% (Upper) 15.8%**  
**SENSITIVITY TO STATIC DISCHARGE?** NAV  
**SENSITIVITY TO MECHANICAL IMPACT?** NAV  
**SPECIAL PROCEDURES:** Firefighters should wear full-body protection & SCBA  
**MEANS OF EXTINCTION:** Foam, water spray (fog), dry chemical, carbon dioxide & vaporizing liquid type extinguishing agents

## **SECTION VI - ACCIDENTAL RELEASE MEASURES:**

Ventilate the area, control spill by covering w/sawdust or similar agent. Pour decontamination solution over spill (non-ionic surfactant Union Carbide's Tergitol TMN-10 (20%) + water (80%); avoid breathing vapors

## **SECTION VII - HANDLING AND STORAGE:**

**Storage Requirements:** Maintain temperature between 32-122F. degrees; average shelf life is 3 years @ 77F. degrees. Empty containers may contain residual liquid or vapors, and should not be pressurized, cut, welded or exposed to ignition sources.  
**Handling Procedures/Equipment:** Ground all containers; use non-sparking tools. Keep away from ignition sources as liquid contains volatiles that give off invisible vapors.

NAP = Not Applicable

NAV = Not Available

**SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:**

**Personal Protective Equipment:** Half-face respirator w/organic vapor filter, safety glasses w/shields, PVA or nitrile chemical-resistant gloves, skin protection  
**Engineering Controls:** Mechanical exhaust fans; use explosion-proof equipment

**SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES:**

**APPEARANCE AND ODOR:** White liquid, glycol-ether type solvent odor  
**SOLUBILITY IN WATER:** Partially soluble in water   **VOLATILES:** 34.2%  
**FREEZING POINT:** NAP   **BOILING POINT:** >241F. deg.   **pH:** NAP  
**SPECIFIC GRAVITY:** 1.54   **ODOR THRESHOLD:** NAV  
**COEFF. WATER/OIL:** NAV   **EVAPORATION RATE:** 0.2%  
**VAPOUR DENSITY (Air = 1):** 1.0+   **VAPOUR PRESSURE:** NAV

**SECTION X - STABILITY AND REACTIVITY DATA:**

**CONDITIONS OF REACTIVITY:** By high heat or fire  
**CHEMICAL INCOMPATIBILITY:** Oxidizing materials, aminos, alcohols  
**CONDITIONS OF INSTABILITY:** Stable, under normal conditions  
**HAZARDOUS DECOMPOSITION PRODUCTS:** By high heat/fire--Carbon dioxide, carbon monoxide, fumes, smoke, aldehydes  
**CORROSIVE BEHAVIOR?** NO

**SECTION XI - TOXICOLOGICAL PROPERTIES:**

**ROUTES OF ENTRY:**SKIN CONTACT **X** EYE CONTACT **X** INHALATION **X**  
**SYNERGISTIC PRODUCTS** NAV   **EXPOSURE LIMITS:** NAV  
**EFFECTS OF ACUTE EXPOSURE:** Burning sensation on mucous membranes & respiratory tract. Flu-like symptoms (fever and chills); skin irritation  
**EFFECTS OF CHRONIC EXPOSURE:** Chemical asthma - chest tightness, wheezing, coughing, shortness of breath. Can cause lung damage.  
**MUTAGENICITY:** NAV   **CARCINOGENICITY:** NAV  
**IRRITANCY:** Burning sensation   **TERATOGENICITY:** NAV  
**REPRODUCTIVE TOXICITY:** NAV  
**SENSITIZATION:** Can cause future reaction to lesser amounts

**SECTION XII - ENVIRONMENTAL INFORMATION:**

Air: 0.64 lbs./gallon V.O.C.  
Water: Partially soluble  
Soil: Lead- and chromate-free/not hazardous under RCRA 40CFR

**SECTION XIII - WASTE DISPOSAL:**

Incineration preferred. Dispose of in accordance with federal, state and local government regulations.

**SECTION XIV - TRANSPORT INFORMATION:**

Classified a hazardous material (Class 3//UN1263//P.G. III/F.P.=48C), and should be marked and handled according to specific regulations.

**SECTION XV - REGULATORY INFORMATION:**

Materials listed under Superfund Amendments & Reauthorization Act of 1988 (SARA) Title III 302, 304, 311, 312, 313: Methyl Isobutyl Ketone (CAS 108-10-1), Toluol (CAS 108883)

**SECTION XVI - OTHER INFORMATION:**

# SAFETY DATA SHEET (E/S/10/02)

pg 1 of 2

## **SECTION I - IDENTIFICATION OF PRODUCT AND COMPANY:**

PRODUCT IDENTIFIER: LINING KOTE curing agent (2-part product)  
GHS PRODUCT IDENTIFIER: Global Harmonized System #3208.90.0000  
CHEMICAL TYPE: Modified Amine Solution  
MANUFACTURER: SUPERIOR PRODUCTS INT'L II, INC.  
ADDRESS: 10835 W. 78th St., Shawnee, KS 66214  
PRODUCT USE: Tank and pipe lining  
EMERGENCY TELEPHONE NUMBER: **800/424-9300; 202/483-7616**



## **SECTION II - HAZARD IDENTIFICATION:**

The product is a flammable, solvent-based polyurethane and should be treated according to all known safety precautions. Refer to Section VII for Storage and Handling recommendations, Section VIII for Personal Protection, Section XIV for transport.

## **SECTION III - HAZARDOUS INGREDIENTS:**

<u>HAZARDOUS INGREDIENTS</u>	<u>%</u>	<u>CAS/PIN</u>	<u>TLV</u>	<u>PEL</u>
n-Butanol	8.5	000071-36-3	150.00	150.00
Toluene	15.0	108-88-3	150.00	150.00
Xylene	25.5	1330-20-7	150.00	150.00

## **SECTION IV - FIRST AID MEASURES:**

**INHALATION:** Remove to fresh air. Give oxygen if required. Seek medical help.

**EYES:** Flush w/clear lukewarm water for 15-20 minutes, occasionally lifting eyelids. See physician.

**SKIN:** Remove contaminated clothing. Wash affected areas & clothing w/mild soap & water.

**INGESTION:** Do not induce vomiting. Keep at rest. Get prompt medical attention.

## **SECTION V - FIREFIGHTING MEASURES:**

**CONDITIONS OF FLAMMABILITY:** Spraying or other activities to create finely divided droplets around open flame/sparks

**HAZARDOUS COMBUSTION PRODUCTS:** Carbon monoxide, aldehydes, fumes

**AUTOIGNITION TEMP.:** N/A

**FLASH POINT & METHOD:** 45F. TCC

**FLAMMABLE LIMITS: (Lower)** 1% **(Upper)** 8%

**SENSITIVITY TO STATIC DISCHARGE?** NAV

**SENSITIVITY TO MECHANICAL IMPACT?** NAV

**SPECIAL PROCEDURES:** Firefighters should wear full-body protection & SCBA

**MEANS OF EXTINCTION:** Dry Chemical--monoammonium phosphate, potassium chloride, carbon dioxide, high expansion (protenic) ehcmical foam, water spray for large fires.

## **SECTION VI - ACCIDENTAL RELEASE MEASURES:**

Ventilate the area, control spill by covering w/sawdust or similar agent. Pour decontamination solution over spill (non-ionic surfactant Union Carbide's Tergitol TMN-10 (20%) + water (80%); avoid breathing vapors.

## **SECTION VII - HANDLING AND STORAGE:**

**Storage Requirements:** Maintain temperature between 32-122F. degrees; average shelf life is 3 years @ 77F. degrees. Empty containers may contain residual liquid or vapors, and should not be pressurized, cut, welded or exposed to ignition sources.

**Handling Procedures/Equipment:** Ground all containers; use non-sparking tools. Keep away from ignition sources as liquid contains volatiles that give off invisible vapors.

NAP = Not Applicable

NAV = Not Available

**SECTION VIII - EXPOSURE CONTROLS AND PERSONAL PROTECTION:**

**Personal Protective Equipment:** Half-face respirator w/organic vapor filter, safety glasses w/shields, PVA or nitrile chemical-resistant gloves, skin protection

**Engineering Controls:** Mechanical exhaust fans; use explosion proof equipment

**SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES:**

**APPEARANCE AND ODOR:** Amber-clear liquid, aromatic-solvent odor

**SOLUBILITY IN WATER:** Partially soluble

**FREEZING POINT:** NAP      **BOILING POINT:** N/A      **VOLATILES:** 56.8%

**SPECIFIC GRAVITY:** .99      **ODOR THRESHOLD:** NAV

**COEFF. WATER/OIL:** NAV      **EVAPORATION RATE:** 1.4      **VAPOUR**

**DENSITY (Air = 1):** 1.0      **VAPOUR PRESSURE:** NAV      **pH:** NAP

**SECTION X - STABILITY AND REACTIVITY DATA:**

**CONDITIONS OF REACTIVITY:** By high heat or fire

**CHEMICAL INCOMPATIBILITY:** Oxidizing materials, amines, alcohols

**CONDITIONS OF INSTABILITY:** Stable, under normal conditions; unstable if contacted with water

**HAZARDOUS DECOMPOSITION PRODUCTS:** By high heat/fire--Carbon dioxide, carbon monoxide, fumes, smoke, aldehydes

**CORROSIVE BEHAVIOR?** NO

**SECTION XI - TOXICOLOGICAL PROPERTIES:**

**ROUTES OF ENTRY:**SKIN CONTACT X EYE CONTACT X INHALATION X

**SYNERGISTIC PRODUCTS** NAV      **EXPOSURE LIMITS:** NAV

**EFFECTS OF ACUTE EXPOSURE:** Burning sensation on mucous membranes & respiratory tract. Flu-like symptoms (fever and chills); skin irritation

**EFFECTS OF CHRONIC EXPOSURE:** Chemical asthma - chest tightness, wheezing, coughing, shortness of breath. Can cause lung damage.

**MUTAGENICITY:** NAV      **CARCINOGENICITY:** NAV

**IRRITANCY:** Burning sensation      **TERATOGENICITY:** NAV

**REPRODUCTIVE TOXICITY:** NAV

**SENSITIZATION:** Can cause future reaction to lesser amounts

**SECTION XII - ENVIRONMENTAL INFORMATION:**

Air: 0.64 lbs./gallon V.O.C.

Water: Partially soluble

Soil: Lead- and chromate-free/not hazardous under RCRA 40CFR

**SECTION XIII - WASTE DISPOSAL:**

Incineration preferred. Dispose of in accordance with federal, state and local government regulations.

**SECTION XIV - TRANSPORT INFORMATION:**

Classified a hazardous material (Class 3//UN1263//P.G. II/F.P.=8C), and should be marked and handled according to specific regulations.

**SECTION XV - REGULATORY INFORMATION:**

Materials listed under Superfund Amendments & Reauthorization Act of 1988 (SARA) Title III 302, 304, 311, 312, 313: Methyl Isobutyl Ketone (CAS 108-10-1), Toluol (CAS 108883)

**SECTION XVI - OTHER INFORMATION:**