

# MATERIAL SAFETY DATA SHEET

## SECTION 1 – PRODUCT IDENTITY

**Silica Shield**  
**Primer, paint, stain, stucco**  
**Inorganic silicate based**  
**mineral coating, stucco**

**R-CRETE INC.**  
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## Section 2 - COMPOSITION INFORMATION ON INGREDIENTS

<u>Chemical and Common Name</u>	<u>CAS Registry Number</u>	<u>Wt. %</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Silica acid, potassium salt:	1312-76-1	<50%	Not Established	Not Established

## SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:

Clear to colored, odorless, thick liquid. Causes mild eye irritation, slight skin irritation, and digestive tract irritation. Spray mist causes irritation to respiratory tract. High pH is harmful to aquatic life. Noncombustible. Spills are slippery. Reacts with acids, ammonium salts, reactive metals and some organics.

*Eye contact:* Causes mild irritation to the eyes.

*Skin contact:* Causes slight irritation to the skin.

*Inhalation:* Spray mist irritating to respiratory tract.

*Ingestion:* May cause irritation to mouth, esophagus and stomach.

*Chronic hazards:* No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.

*Physical hazards:* Dries to form glass film which can easily cut skin. Spilled material is very slippery, can etch glass if not promptly removed.

## SECTION 4 -FIRST AID MEASURES

*Eye:* In case of contact, immediately flush eyes with plenty of water for at least 15 min. Get medical attention.

*Skin:* In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention.

## SECTION 5 - FIRE FIGHTING MEASURES

*Flammable limits:* This material is noncombustible.

*Extinguishing Media:* This material is compatible with all extinguishing media.

*Hazards to fire-fighters:* See Section 3 for information on hazards when this material is present in the area of fire.

*Fire-fighting equipment:* The following protective equipment for fire fighters is recommended when this material is present in the area of a fire: chemical goggles, body-covering protective clothing, chemical resistant gloves and rubber boots.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES:

Personal protection: Wear chemical goggles, body covering protective clothing, chemical resistant gloves and rubber boots. See section 8.

*Environmental Hazards:* Sinks and mixes with water. High pH of this material is harmful to aquatic life, see Section 12. Only water will evaporate from a spill of this material.

Small spill cleanup: Mop up and neutralize liquid, then discharge to sewer in accordance with federal, state and local regulations or permits.

*Large spill cleanup:* Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Stop leak if you can do so without risk.

*cont. »*

Prevent runoff from entering into storm sewers and ditches which lead to natural waterways. Isolate, dike and store discharged material, if possible. Use sand or earth to contain spilled material. If containment is impossible, neutralize contaminated area and flush with large quantities of water. *CERCLA RQ:* There is no CARCLA Reportable Quantity for this material. If a spill goes off site, notification of state and local authorities is recommended.

### **SECTION 7 - HANDLING AND STORAGE:**

*Handling:* Avoid contact with eyes, skin and clothing. Avoid breathing spray mist. Keep container closed. Promptly clean residue from closures with cloth dampened with water. Promptly clean up spills.

*Storage:* Keep containers closed. Store in clean steel or plastic containers. Separate for acids, reactive metals, and ammonium salts. Storage temperature 0-95° C. Loading temperature 45-95° C. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers.

### **SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

*Engineering controls:* Use with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain should be within direct access.

*Respiratory protection:* Use a NIOSH-approved dust and mist respirator where spray mist occurs. Observe OSHA regulations for respirator.

*Skin protection:* Wear body-covering protective clothing and gloves.

*Eye protection:* Wear chemical goggles.

### **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

*Appearance:* Thick liquid  
*Color:* Clear to white and colors.  
*Odor:* Odorless or musty odor.  
*pH:* 11±  
*Specific gravity:* 9.2 to 10.50 lbs/gal  
*Solubility in water:* Miscible.

### **SECTION 10 - STABILITY AND REACTIVITY**

*Stability:* This material is stable under all conditions of use and storage.

*Conditions to avoid:* None

*Materials to avoid:* Gels and generates heat when mixed with acid. May react with ammonium salts and resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on contact with aluminum, tin, lead and zinc.

*Hazardous decomposition products:*

Hydrogen.

### **SECTION 11 - TOXICOLOGICAL INFORMATION**

*Acute Data:* When tested for primary irritation potential, this material caused mild irritation to the eyes and was slightly irritating to the skin. Human experience indicated that irritation occurs when potassium silicates get on clothes at the collar, cuffs or other areas where abrasion may occur. The acute oral toxicity of this product has not been tested. When chemically similar sodium silicates were tested on a 100% solids basis, their single dose acute oral LD50 in rates ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes. This product contains approximately 29.1% potassium silicate.

*Subchronic Data:* The subchronic toxicity of this material has not been tested. In a study of rats fed chemically similar sodium silicate in drinking water for three months, at 200, 600 and 1800 ppm, changes were reported in the blood chemistry of some animals, but no specific changes to the organs of the animals due to potassium silicate administration were observed in any of the dosage groups.

Another study reported adverse effect to the kidneys of dogs fed potassium silicate in their diet at 2.4g/kg/day for 4 weeks, whereas rats fed the same dosage did not develop any treatment-related effects. Decreased numbers of births and survival in weaning was reported for rats fed sodium silicate in their drinking water at 600 and 1200 ppm. The mutagenic potential of this material has not been tested. Chemically similar sodium silicate was not mutagenic to the bacterium E. Coli when tested in a mutagenicity bioassay. There are no known reports of carcinogenicity of potassium silicates. Frequent ingestion over extended periods of time of gram quantities of silicates is associated with the formation of kidney stones and other siliceous urinary calculi in humans. Potassium silicate is not listed by IARC, NTP or OSHA as a carcinogen.

## **SECTION 12 - ECOLOGICAL INFORMATION**

*Ecotoxicity:* The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affinis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnaea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. This product contains approximately 29.1% potassium silicate.

*Environmental Fate:* This material is not persistent in aquatic systems, but its high pH when undiluted or unneutralized is acutely harmful to aquatic life. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute BOD. This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous sponges. Where abnormally low natural silica concentrations exist (less than 0.1 ppm) dissolved silica may be a limiting nutrient for diatoms and a few other aquatic algal species. However, the addition of excess dissolved silica over the limiting concentration will not stimulate the growth of diatom populations; their growth rate is independent of silica concentration once the limiting concentration is exceeded. Neither silica nor potassium will appreciably bioconcentrate up the food chain.

*Physical/Chemical:* Sinks and mixes with water. Only water will evaporate from this material.

## **SECTION 13 - DISPOSAL CONSIDERATIONS**

*Classification:* Disposed material is not a RCRA hazardous waste.

*Disposal Method:* Dispose in accordance with federal, state and local regulations and permits.

## **SECTION 14 - TRANSPORT INFORMATION**

*DOT UN Status:* This material is not regulated hazardous material for transportation.

## **SECTION 15 - REGULATORY INFORMATION**

*CERCLA:* No CERCLA Reportable Quantity has been established for this material.

*SARA TITLE III:* Not an Extremely Hazardous Substance under 313. Hazard Categories under 311/312: Acute

*TSCA:* All ingredients of this material are listed on the TSCA inventory.

*FDA:* Potassium silicate is regarded as GRAS (Generally Recognized As Safe) as a corrosion preventative in potable water.

SILICA SHIELD 10-1-08