MATERIAL SAFETY DATA SHEET

Sodium Silicate

Section 1: Chemical Product and Company Identification

Product Name: Sodium Silicate
CAS No.: 1344-09-8
Chemical Formula: Na2O·nSiO2

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #
Sodium silicate	1344-09-8

Section 3: Hazards Identification

Emergency Overview:
White, odorless, powder**.** Corrosive to eyes, skin, and digestive tract. Spray mist is corrosive to respiratory tract. Due to high pH of product, release into surface water is harmful to aquatic life. Noncombustible. Spills are slippery. Reacts with acids, ammonium salts, reactive metals and some organics.

Eye contact:
Corrosive. Causes eye burns.

Skin contact:
Corrosive. Causes skin burns.

Inhalation:
Dust irritating to respiratory tract.

Ingestion:
Causes burns to digestive tract.

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

Physical hazards:
Can etch glass if not promptly removed

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:

If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical got on the victim's exposed skin, such as the hands : Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation: Not available.

Ingestion:

Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not

breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available.

Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Environmental Hazards:

Sinks and mixes with water. High pH of this material is harmful to aquatic life.

Small spill cleanup:

Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective
Equipment.

Large spill cleanup:

Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment. In case of contact with water, prevent runoff from entering into stormsewers and ditches which lead to natural waterways. Neutralize contaminated area and flush with large quantities of water. Comply with applicable environmental regulations.

Section 7: Handling and Storage

Handling:

Do not get in eyes, on skin, or on clothing. Avoid breathing dust. Keep container closed. Promptly clean up spills. Wash thoroughly after handling.

Storage:

Keep containers closed. Store in clean steel or plastic containers. Separate from acids, reactive metals, and ammonium salts. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers. This product can absorb water from the air. In case of high humidity or storage for extended periods of time, use plastic bags to enclose product containers to avoid caking.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Provide exhaust ventilation or other engineering controls to keep the air borne concentrations of vapors below their respective threshold limit value.

Personal Protection:

Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.Boots.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist Before handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Appearance: Powder.
Color: White.
Odor: Odorless or musty odor.
pH: Approximately 12.5
Solubility in water: Soluble

Section 10: Stability and Reactivity Data

Stability:
This material is stable under all conditions of use and storage.
Conditions to avoid: None.
Materials to avoid:
Generates heat when mixed with acid. May react with ammonium salt solutions 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, similar materials were severely irritating or corrosive to the skin and eyes. Human experience confirms that irritation occurs when sodium 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 sodium silicates were tested on a 100% solids basis, their single dose acute oral LD50 in rats ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes.
Subchronic Data:
In a study of rats fed 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 sodium silicate administration were observed in any of the dosage groups. Another study reported adverse effects to the kidneys of dogs fed sodium 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 to weaning was reported for rats fed sodium silicate in their drinking water at 600 and 1200 ppm.
Special Studies:
Sodium silicate was not mutagenic to the bacterium E. Coli when testedin a mutagenicity bioassay. There are no known reports of carcinogenicity of sodium silicates. Frequent ingestion over extended periods of time of gram quantities of silicates is associated with the formation kidney stones and other siliceous urinary calculi in humans. Sodium silicate is not listed by IARC, NTP or OSHA as a

carcinogen.

Section 12: Ecological Information

Eco toxicity:

The following data is reported for sodium silicates on a 100% solids basis:
A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm.

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 to 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 sodium will appreciably bioconcentrate up the food chain.

Physical/Chemical:

Sinks and mixes with water.

Section 13: Disposal Considerations

Classification:

Waste material is not a RCRA Hazardous waste.

Disposal Method:

Dispose in accordance with federal, state and local regulations.

Section 14: Transport Information

This material is not regulated hazardous material for transportation.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Note:
The product on this MSDS has been classified in accordance with the hazard criteria of the China controlled products regulations. This MSDS contains all information requied by those regulations.

Section 16: Other Regulatory Information

Note:
The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations.