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FOR CHEMICAL EMERGENCY
Involving Shipping and Handling Spills, Leak, Fire, Exposure or Accident
Call CHEMTREC 1-800-424-9300

Complies with OSHA's Hazard Communication Standard 29 CFR 1910.1200

Section 1 - Product Identification

Product Name: Sodium Metasilicate, all sizes

Product ID: 0204X

Section 2 - Composition/Information on Ingredients

CHEMICAL AND COMMON NAME	CAS REG. #
Silicic acid	6834-92-0

Section 3 - Hazards Identification

EMERGENCY OVERVIEW: White, odorless, granular powder. Corrosive to eyes, skin, and digestive tract. Dust corrosive to respiratory tract. Due to high pH of product, release into surface water is harmful to aquatic life. Noncombustible. Reacts with acids and some organics.

EYE CONTACT: Corrosive. Causes eye burns.

SKIN CONTACT: Corrosive. Causes skin burns.

INHALATION: Dust corrosive to respiratory tract.

INGESTION: Corrosive. Causes burns to mouth, esophagus, and stomach.

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

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

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

INGESTION: If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

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 a 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

PERSONNEL PROTECTION: Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots, NIOSH-approved dust respirator where dust occurs. See Section 8.

ENVIRONMENTAL HAZARDS: Sinks and mixes with water. High pH of this material is harmful to aquatic life, see Section 12.

SMALL SPILL CLEANUP: Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). See Section 8.

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 (PPE). See section 8. In case of contact with water, prevent runoff from entering into storm sewers and ditches which lead to natural waterways. Neutralize contaminated area and flush with large quantities of water. Comply with applicable environmental regulations.

CERCLA RQ: There is no CERCLA 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: Do not get in eyes, on skin, or on clothing. Do not breathe dust. Keep container closed. Promptly clean up spills. Wash thoroughly after handling.

STORAGE: Keep containers closed. Store in clean, tightly closed steel, fiber, 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. Packaged inventory should be used on a first in, first out (FIFO) basis.

Section 8 - Exposure Controls and Personal Protection

ENGINEERING CONTROLS: Use only with adequate ventilation. Keep containers closed. Safety shower and eyewash fountain are recommended.

RESPIRATORY PROTECTION: Use a NIOSH-approved dust respirator where dust occurs. Observe OSHA regulations for respirator use.

SKIN PROTECTION: Wear body-covering protective clothing and gloves.

EYE PROTECTION: Wear chemical goggles.

Section 9 - Physical and Chemical Properties

APPEARANCE: Granular powder

COLOR: White

ODOR: Odorless or musty odor

pH: Approximately 14

BULK DENSITY: Approximately 68 lbs/ft³ untamped, 77 lbs/ft³ tamped

SOLUBILITY IN WATER: Soluble

Section 10 - Stability and Reactivity

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. Carbon monoxide gas may be produced on contact with reducing sugars.

HAZARDOUS DECOMPOSITION: Hydrogen

Section 11 - Toxicological Information

ACUTE DATA: This material has not been tested for primary eye irritation potential. However, on the basis of its high degree of alkalinity, it is regarded as corrosive to the eyes. When this material was tested for skin corrosion/irritation potential according to OECD Guidelines Section 404, it produced dermal corrosion. 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 tested in 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 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 (*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 yields 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 dissolves in water.

Section 13 - Disposal Considerations

CLASSIFICATION: Disposed dry/solid material is not classified as a RCRA Hazardous waste. However, disposed water/wet solutions containing this material are classified as RCRA hazardous waste if they exhibit the corrosive characteristic (pH greater than or equal to 12.5) as defined in EPA rules at 40 C.F.R. 5261.22 (a)(1).

DISPOSAL METHOD: Dispose in accordance with federal, state and local regulations.

Section 14 - Transport Information

DOT UN STATUS: This material is a regulated hazardous material.

UN PROPER SHIPPING NAME: Corrosive Solid, Basic, Inorganic, n.o.s. (Sodium metasilicate, Anhydrous)

UN HAZARD CLASS/DIVISION: 8

UN IDENTIFICATION NUMBER: UN3262

UN PACKING GROUP: PG II

Section 15 - Regulations

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

SARA TITLE III: Not an Extremely Hazardous Substance under S302. Not a Toxic Chemical under S313. Hazard Categories under SS311/312: Acute

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

The information and recommendations in this Material Safety Data Sheet are based upon data believed to be correct and does not relate to its use in combination with any other material or process. Since use conditions vary, we assume no liability for failure to follow product use direction and safety precautions. As data, standards and regulations change; NO WARRANTY, EXPRESS OR IMPLIED, IS MADE AS TO THE COMPLETENESS OR CONTINUING ACCURACY OF THIS INFORMATION.