

**Section 1. Supplier Information**



**General Chemical Corp.**  
12336 Emerson Drive  
Brighton, MI 48116  
(248) 587-5600  
**Emergency Telephone: 1-800-424-9300**

**Section 2. Hazardous Ingredients**

| <u>Hazardous Component(s)</u> | <u>CAS #</u> | <u>PEL TWA</u> | <u>PEL Ceiling</u> | <u>TLV TWA</u> | <u>TLV STEL</u> | <u>MFG Limits</u> | <u>WGT %</u> |
|-------------------------------|--------------|----------------|--------------------|----------------|-----------------|-------------------|--------------|
| Sodium metasilicate           | 6834-92-0    | 5 mg/m3        | N/E                | N/E            | N/E             | 2 mg/m3           | 1 - 10       |
| Potassium hydroxide           | 1310-58-3    | N/E            | N/E                | N/E            | 2 mg/m3         | N/E               | 1 - 10       |
| 2-(2-Butoxyethoxy)<br>ethanol | 112-34-5     | N/E            | N/E                | N/E            | N/E             | 35 ppm            | 1 - 10       |

N/A = Not Applicable; N/E = Not Established; \* = Mists; # = Skin; ' = Respirable Dust; " = Total Dust; ^ = Vapor; \*\* = Fumes; C = Ceiling Limit

All components of this product are listed on the Toxic Substances Control Act (TSCA) Inventory and the Canadian Domestic Substances List (DSL), or are exempt from the listing.

**Section 3. Hazards Identification**

**Primary Routes of Entry**

Inhalation: YES  
Skin: YES  
Ingestion: NO

**Hazardous Materials Information System (HMIS) Ratings**

Health: \* 3  
Fire: 0  
Reactivity: 0  
0 = Minimal  
1 = Slight  
2 = Moderate  
3 = Serious  
4 = Severe  
\* = Chronic Hazard

**Signs of Symptoms of Exposure:**

**INHALATION:** Exposure to mists may cause coughing, sneezing, and other symptoms of respiratory tract irritation. Overexposure may result in lung tissue damage due to corrosive effects.

**SKIN:** Can be a severe skin irritant. May be corrosive and cause severe burns if not washed immediately.

**EYES:** This product is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness.

**INGESTION:** This product, if swallowed, can cause severe burns and complete tissue perforation of mucous membranes of the mouth, throat, esophagus, and stomach.

**Chemical Listed as Potential Carcinogens:**

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NTP: NO

IARC: NO

OSHA: NO

Target Organs: Eyes, skin, and respiratory system.

**Section 4. Emergency And First Aid Procedures**

**INHALATION:** If adverse effects such as dizziness, nausea, or irritation are noted, move person to fresh air. If not breathing, give artificial respiration. Get medical attention!

**SKIN:** Immediately wash skin with large amounts of soap and water. Remove contaminated clothing and shoes; wash before reuse. Get medical attention if irritation persists after washing.

**EYES: THE OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY, THEN SEEK MEDICAL ATTENTION!** Immediately flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within several seconds is essential to achieve maximum effectiveness. **SEEK MEDICAL ATTENTION IMMEDIATELY!**

**INGESTION:** If swallowed, dilute with water. Never give fluids if the victim is unconscious or having convulsions. Contact a physician immediately!

**Section 5. Fire Fighting Measures**

Flash Point: None to boiling.

Method Used: Tagliabue Closed Cup

Flammable Limits in Air % by Volume: LEL: N/E

UEL: N/E

Extinguisher Media: Carbon dioxide, dry chemical, foam, or water fog.

Special Fire Fighting Procedures: Firefighters should wear a self-contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode, and protective clothing.

Unusual Fire And Explosion Hazards: Low fire hazard when exposed to heat and flame. Product is not flammable or combustible.

**Section 6. Accidental Release Measures**

If material is spilled, absorb with sand, earth, or similar inert material. Place in closed, labeled containers for proper disposal.

CERCLA (Superfund) Reportable Quantity (in lbs RQ Potassium hydroxide = 1,000 lbs  
(Product RQ = 22,223 lbs - 2,470 gallons)

**Section 7. Handling and Storage**

Handling: Avoid contact with skin and eyes; wash thoroughly after handling. Avoid breathing vapor; use with adequate ventilation.

Storage: **KEEP FROM FREEZING!** Store in a dry location at room temperature. Keep container closed and maintain all original markings and labels. Product is corrosive to zinc, aluminum, tin, and alloys of these metals.

Other: If this solution is mixed with water, heat will be given off. When diluting, always add this solution to water **SLOWLY** with constant mixing, in order to avoid splattering.

**Section 8. Exposure Controls and Personal Protection**

Respiratory Protection: Use NIOSH / MSHA approved respirator where high vapor or mist concentrations are present.

Local Exhaust: Special ventilation is suggested at points where vapors can be expected to escape to the workplace air.

Mechanical Exhaust: Mechanical ventilation should be sufficient to maintain exposure levels

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below exposure limits.

Protective Gloves: Wear chemical resistant gloves.

Eye Protection: Safety glasses with side shields. Do NOT wear contact lenses. Chemical goggles and/or faceshield should be worn where splashing is possible.

Other Protection: Eye wash and safety shower should be readily available. Wear a chemical resistant apron and boots where splashing is possible.

Hygienic Practices: Protective equipment and clothing should be selected, used and maintained according to applicable standards and regulations. For further information, contact the clothing or equipment manufacturer. Do not eat, drink, or smoke while using this product. Wash hands prior to eating, drinking, smoking, or using restrooms. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work shift.

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**Section 9. Physical and Chemical Properties**

Boiling Point: 212 ° F (initial)

Specific Gravity (H<sub>2</sub>O=1): 1.08-1.09

Vapor Pressure (mm Hg): Similar to water.

Vapor Density (air=1) Similar to water.

Solubility in Water: Complete.

Reactivity in Water: Exothermic reaction; heat will be generated.

Weight per Gallon (lb/gal): 8.9 - 9.1 lbs/gal

% Volatile by Volume: 89-91%

% Solid by Weight: 9-11%

Appearance and Odor: Orange liquid with a mild odor.

Theoretical VOC: 0 lbs/gal  
(>0.1 mm Hg @ 20 ° C)

Analytical VOC : 0.3 - 0.5 lbs/gal  
(EPA method 24)

pH: > 13.0

Degree of water solubility:  
Negligible = Less than 0.1%  
Slight = 0.1% - 1%  
Moderate = 1% - 10%  
Appreciable = More than 10%  
Complete = 100%

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**Section 10. Stability and Reactivity**

Stability: Stable. Hazard Polymerization: Will not occur.

Conditions to Avoid: Extreme heat and flames. Reacts exothermically with water.

Incompatibility (Materials to Avoid): Strong oxidizing agents, aluminum, light metal surfaces, strong bases, and salts of strong bases at elevated temperatures.

Hazardous Decomposition Products: Unidentified organic compounds and oxides of carbon.

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**Section 11. Toxicological Information**

Silicic acid, disodium salt [CASRN 006834-92-0]

**ACUTE TOXICITY**

Oral LD50 (rat) = 847 mg/kg Eye irritation (rabbit): 0.1 ml, Corrosive  
Skin irritation (rabbit): Moist skin, Corrosive (At 4 hrs.)

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Sub chronic 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. [15,16-12,13,U,18,12-100200], [17,15-18,12,15-033100]

Potassium hydroxide [CASRN 001310-58-3]

**ACUTE TOXICITY**

Oral LD50 (rat) = 365 mg/kg Primary skin irritation (rabbit, 24 hr) - Severe  
Primary eye irritation (rabbit, 24 hr) - Severe

Human Dermal Exposure: Severity of damage and extent of irreversibility increases with concentration and contact time. Prolonged contact with potassium hydroxide solution (>2.0%) can cause a high degree of tissue destruction. The latent period, following skin contact during which no sensation of irritation occurs varies with concentration. [14,23-2,15,11,0,6-101998]

Ethanol, 2-(2-butoxyethoxy) [CASRN 000112-34-5]

**ACUTE TOXICITY**

Oral LD50 (rat) = 5.1-5.7 g/kg Eye Irritation: Moderate [Rabbit]  
Oral LD50 (mouse) = 2.4 g/kg Skin Irritation: Slight [Rabbit]  
Dermal LD50 (rabbit) ~ 4 g/kg Inhalation LC50 (rat) > 18 ppm; 7 hours

Other Information: Kidney effects in male rats were observed in laboratory animals exposed to this material. Effects were consistent with male rat hyaline droplet nephropathy, which is of questionable significance to human health.

Mutagenicity: Animal mutagenicity studies were negative. In vitro mutagenicity studies were negative in some cases and positive in other cases. [3-3,3,1,6,4-121600], [18,7-1,3,6,4-020901], & [4,16-6,4,3,1-022001]

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**Section 12. Ecological Information**

Silicic acid, disodium salt [CASRN 006834-92-0]

**ECOTOXICITY**

96 hr - LC50 (mosquitofish) = 530 mg/L 48 hr - LC50 (water flea) = 113 mg/L  
96 hr EC50 (gambusia affinis) = 2,320 ppm 96 hr EC50 (amphipoda) = 160 ppm  
96 hr - LC50 (scud) = 160 mg/L 28 d - LC50 (polychaete) = 210-250 g/L  
96 hr EC50 (Lymnea) = 632 ppm 96 hr EC50 (daphnia magna) = 247 ppm  
Terrestrial wildlife - Oral LD50 (mouse) = 770 mg/kg

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

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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 [14,23-20,C,G,18,12,15-121898], [15,16-12,13,U,18,12-100200]  
Potassium hydroxide [CASRN 001310-58-3]

**ECOTOXICITY**

96 hr - LC50 (fathead minnow) = 179 mg/L\* 48 hr - EC50 (water flea) = 60 mg/L\*  
96 hr - EC50 (green algae) = 61 mg/L\* \* 45.25 % aqueous KOH solution

ENVIRONMENTAL FATE DATA: Inorganic, not subject to biodegradation

This material has produced slight toxicity in laboratory tests with aquatic organisms. This material is strongly alkaline. If released to surface water, this compound will cause the pH to rise dependent on the buffering capacity of the waterbody. Aquatic organisms become increasingly stressed as pH exceeds 9, with many aquatic species being intolerant of pH in excess of 10. This compound does not bioaccumulate in organisms. Due caution should be exercised to prevent the accidental release of this material to the environment. [14,23-2,15,11,0,6-101998]

Ethanol, 2-(2-butoxyethoxy) [CASRN 000112-34-5]

**ECOTOXICITY**

LC50 (Poecilia reticulata) = 1150 mg/L LC50 (Lepomis macrochirus) = 1300 mg/L LC50 (Leuciscus idus) = 1805-2304 mg/L LC50 (Menidia beryllina) = 2000 mg/L  
LC50 (Carassius auratus) = 2700 mg/L LC50 (Daphnia magna) = 2850 mg/L  
LC50 (Notropis atherinoides) > 500 mg/L Growth inhibition IC50 (bacteria) = 255 mg/L

MOVEMENT & PARTITIONING: Bioconcentration potential is low (BCF less than 100 or Log Pow less than 3). Log octanol/water partition coefficient (log Pow) is 0.56. Potential for mobility in soil is high (Koc between 50 and 150). Log soil organic carbon partition coefficient (log Koc) is estimated to be 1.88. Henry's Law Constant (H) is estimated to be 1.52E-9 atm.m3/mol.

DEGRADATION & PERSISTENCE: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). Degradation is expected in the atmospheric environment within minutes to hours. 5-Day biochemical oxygen demand (BOD5) is 0.05 p/p. 10-Day biochemical oxygen demand (BOD10) is 0.39 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.08 p/p. Theoretical oxygen demand (ThOD) is calculated to be 2.17 p/p. Biodegradation rate may increase in soil and/or water with acclimation. [3-3,3,1,6,4-121600]

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**Section 13. Disposal Considerations**

Waste Disposal Methods (Federal, State, Local):

In accordance with all federal, state and local requirements.

RCRA Hazardous Waste Number: D002

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**Section 14. Transport Information**

Hazardous Material Description:

(Proper shipping name, hazard class, hazard ID#, packing group)

Domestic ground non-bulk: UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., 8, PG II (POTASSIUM HYDROXIDE DISODIUM TRIOXOSILICATE)

Domestic ground bulk: UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., 8, PG II (POTASSIUM HYDROXIDE DISODIUM TRIOXOSILICATE)

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International: UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., 8,  
PG II (POTASSIUM HYDROXIDE DISODIUM TRIOXOSILICATE)

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**Section 15. Regulatory Information**

SARA 313 Information This product contains the following chemical(s) above deminis concentrations and may be subject to reporting under section 313:  
Reportable Category: Certain glycol ether, 1 - 10 %.

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**Section 16. Other Information**

This MSDS contains revisions in the following sections: New product

Prepared by: Andrew J. Thomas Chemist

Revised by:

The development of this Material Safety Data Sheet (MSDS) relies upon information provided to us by each of our raw material suppliers. This MSDS will be updated as changes occur to their MSDS(s).

We believe the recommendations and technical information contained herein to be accurate. However, they are given without warranty or guarantee, expressed or implied, and we assume no responsibility for losses or damage, direct or indirect, as a result of their use.