



Aqua Chemical Supply, Inc.

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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sodium Silicate Solution
Synonyms: None
Chemical Family: None Known
Application: Adhesive, binder, pulp & paper, water treatment, catalysts & gels.
Manufacturer/Supplier/Distributor
Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC V6X 1W5

Emergency telephone number: For emergency assistance involving chemicals call
CHEMTREC day or night at: 1-800-424-9300

2. HAZARDS IDENTIFICATION

HAZARDOUS COMPONENTS

Ingredients	CAS#	Percentage	LD50s and LC50s Route & Species:
Sodium silicate	1344-09-8	39.2	Oral LD50 (Rat) : 1960 mg/kg Dermal LD50 (Rabbit) : >4640 mg/kg

NON-HAZARDOUS COMPONENTS

Ingredients	CAS#	Percentage	LD50s and LC50s Route & Species:
Water	7732-18-5	60.8	Not available.

3. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

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NON-HAZARDOUS COMPONENTS

Ingredients	CAS#	Percentage	LD50s and LC50s Route & Species:
Water	7732-18-5	60.8	Not available.

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.
Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Immediately remove contaminated clothing and shoes.
Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.
Ingestion: Do not induce vomiting. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.
Notes to Physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point: None.
Flash Point Method: Not applicable.
Autoignition Temperature: Not applicable.
Flammable Limits in Air (%): Not applicable.
Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Special Exposure Hazards: None expected.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: Not Available.

HMIS RATINGS FOR THIS PRODUCT ARE: Not Available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

Environmental Precautionary Measures: Prevent entry into sewers or streams, dike if needed. Consult local authorities.

Procedure for Clean Up: Absorb with an inert dry material and place in an appropriate waste disposal container.

Isolate hazard area and restrict access. Stop leak only if safe to do so. Prevent spilled material from entering sewers, confined spaces, drains, or waterways. Neutralize contamination area and flush with large quantities of water.

Spilled material may cause floors and contact surfaces to become slippery

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapor. Promptly clean residue from closures with cloth dampened with water.

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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Local ventilation recommended where mechanical ventilation is ineffective in controlling airborne concentrations below the recommended occupational exposure limit.

Respiratory Protection: For dusty or misty conditions, wear NIOSH-approved dust or mist respirator.

Gloves: Impervious gloves.

Skin Protection: Apron, coveralls and/or other resistant protective clothing.

Eyes: Mono goggles.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ingredients	Exposure Limit - ACGIH	Exposure Limit – OSHA	IDLH
Sodium silicate	Not available.	Not available.	Not Available.
Water	Not available.	Not available.	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Thick. Liquid

Color: Clear - Hazy White

Odor: Odorless - Musty

pH 11.3

Specific Gravity: 1.42

Boiling Point: Not Available.

Freezing/Melting Point: Not Available.

Vapor Pressure: Not Available.

Vapor Density: Not Available.

% Volatile by Volume: Not Available.

Evaporation Rate: Not Available.

Solubility: Miscible in water.

VOCs (lbs. /gallon): Not Available.

Viscosity: Not Available.

Molecular Weight: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: None known.

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

Hazardous Decomposition Products: Hydrogen
 Additional Information: Dries to form glass film which can easily cut skin.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: May cause irritation to mouth, esophagus and stomach. Causes digestive tract irritation.

Skin Contact: Causes moderate skin irritation.

Inhalation: Mists may cause irritation of upper respiratory tract.

Eye Contact: Causes eye irritation.

Additional Information: 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. This material has not been tested for primary eye irritation potential. Similar sodium silicate solutions produce corneal, iridal and conjunctival irritation. This material has not been tested for primary skin irritation potential. Similar sodium silicate solutions produce skin irritation and are more irritating to abraded skin than intact skin. 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.

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.

Acute Test of Product:

Acute Oral LD50: Not Available.

Acute Dermal LD50: Not Available.

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Sodium silicate	Not listed.	Not listed.
Water	Not listed.	Not listed.

Carcinogenicity Comment: No additional information available.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Not Available.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients Ecotoxicity - Fish Species

Data Acute Crustaceans

Toxicity: Ecotoxicity - Freshwater

Algae Data

Sodium silicate Not Available. Not Available. Not Available.

Water Not Available. Not Available. Not Available.

Other Information:

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 (*Lymnaea*) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. 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. Sinks and dissolves in water. Only water will evaporate from this material.

13. DISPOSAL CONSIDERATION

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

14. TRANSPORT INFORMATION

DOT Shipping Name: Not Regulated.

DOT Hazardous Class: Not Applicable.

DOT UN Number: Not Applicable.

DOT Packing Group: Not Applicable.

DOT Reportable Quantity (lbs): Not Applicable.

Notes: No additional remark.

Marine Pollutant: No.

ICAO/IATA:

IATA Proper Shipping Name: Not Regulated.

IATA Hazard Class: Not Applicable.

UN Number: Not Applicable.

Packing Group: Not Applicable.

IATA Label: Not Applicable.

IATA Remarks: No additional remark.

IMDG:

IMDG Proper Shipping Name: Not Regulated.

Hazard Class: Not Applicable.

UN Number: Not Applicable.

Packing Group: Not Applicable.

Marine Pollutant: No.

IMDG Label: Not Applicable.

Remarks: No additional remark.

TDG (Canada):

TDG Proper Shipping Name: Not Regulated.

Hazard Class: Not Applicable.

UN Number: Not Applicable.

Packing Group: Not Applicable.

Note: No additional remark.

Marine Pollutant: No

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL) or exempt.

U.S. Regulatory Rules

Ingredients	Sodium silicate	Water
CERCLA/SARA – Section 302:	Not Listed	Not Listed
SARA (311, 312) Hazard Class:	Not Listed	Not Listed
CERCLA/SARA – Section 313:	Not Listed	Not Listed

California Proposition 65: Not Listed.
MA Right to Know List: Not Listed.
New Jersey Right-to-Know List: Not Listed.
Pennsylvania Right to Know List: Not Listed.

WHMIS Hazardous Class:

D2B TOXIC MATERIALS

Additional Information: his product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Notice**

Aqua Chemical Supply, Inc. expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Aqua Chemical Supply, Inc. sales office.

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