Safety Data Sheet

Sodium Silicate Solid

Section 1: Chemical Product and Company Identification	
Product Name: Sodium Silicate Solid **CAS No.:** 1344-09-8 **EC/EINECS:** 215-687-4 **UN No:** - **EC Annex1 Index No:** - **Chemical Name:** Sodium Silicate **Synonyms :** Water glass	**Contact Information:** **CT Glass Co.,Ltd.** 162/3 Moo 4 Petchakasem Rd.Omnoi, Krathumban, Samutsakorn, Thailand 74130 Phone number: 662-810-5090-9,662-420-5891-3 Fax number: 662-420-5894

Section 2: Hazards Identification	
GHS Classification:	Oral acute toxicity category 5 Skin irritation category 2 Eye irritation category 2A
GHS Label:	
GHS Signal Word:	Warning
GHS Precaution Phrases:	H303 May be harmful if swallowed H315 Causes skin irritation H319 Causes serious eye irritation
GHS Response Phrases:	P312 Call a doctor if you feel unwell. P302+P352 If on skin: Wash with plenty of soap and water. P332 + P313 If skin irritation occurs: Get medical advice/ attention. P362: Take off contaminated clothing and wash before reuse. P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/ attention.
Emergency Overview:	Aquamarine glass lumps. Causes eye, skin, and digestive tract irritation. Dust causes irritation to respiratory tract. High pH is harmful to aquatic life. Noncombustible. Reacts with acids and some organics.
Chronic hazards:	No known chronic hazards. Not listed by NTP, IARC or OSHA as a carcinogen.
Physical hazards:	Sharp edges and points can easily cut skin

Section 3: Composition and Information on Ingredients

Chemicals Characterization : molar ratio Na_2O : SiO_2 = 1 : 2.00 to 1 : 3.60

Composition:

Name	CAS No.	EC No.	% by Weight
Sodium silicate	1344-09-8	215-687-4	99.0-100%

Section 4: First Aid Measures

Eye Contact:	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin Contact:	Remove contaminated clothing and shoes. Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion:	Not available

Section 5: Fire and Explosion Data

Flammable limits:	This material is noncombustible.
Extinguishing Media:	This material is compatible with all extinguishing media
Hazards to fire-fighters:	See Section 2 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.
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.

Section 6: Accidental Release Measures

Small Spill:	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:	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.
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.

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 from acids, reactive metals, and ammonium salts. Storage temperature 0-95º C. Loading temperature 45-95 º 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.
Personal Protection :	Wear chemical goggles, body-covering protective clothing and gloves.

Section 9: Physical and Chemical Properties	
Appearance:	Glass lumps
Odor:	Odorless.
Color:	Transparent blue or green
Specific Gravity at 20°C:	Approximately 2.2-2.4 untamped.
pH :	Approximately 11.3
Boiling Point:	Not available.
Melting Point:	Not available.
Flash Point:	The product is not flammable
Critical Temperature:	Not available.
Oxidizing Properties:	None oxidizer
Photodegradation:	No photodegradation
Biodegradation:	Not applicable (inorganic substances)
Solubility:	Slowly soluble in all proportions

Section 10: Stability and Reactivity Data	
Stability:	This material is stable under all conditions of use and storage.
Conditions of Instability:	None.
Materials to avoid	Gels and generates heat when mixed with acid.
Hazard decomposition product:	Hydrogen.

Section 11: Toxicological Information	
Acute Data:	When tested, sodium silicate 100% solids basis, it single dose acute oral LD50 in rats ranged from 3,200 mg/kg to 8,650 mg/kg.
Skin Irritaion Data:	The irritation response is inversely correlated with the molar ratio of the silicates; a lower molar ratio SiO2 : Na2O leads to a higher irritation score and vice versa. This correlation is superimposed by the concentration effect: lower concentrations will exhibit lower irritancy as compared to higher concentrations of the same molar ratio. Whereas ratios of 2.0 and 2.4 exhibited irritating properties, ratios of 2.8 and 3.3 were not irritating.
Eyes Irritation Data:	Varying molar ratios exhibited effects in enucleated rabbit eyes ranging from corrosive (MR 1.0) to severely irritating (MR 2.0, 2.4 and 2.6) to slightly irritating (MR 2.8, 3.0 and 3.3).
Subchronic Data:	Sodium Silicate study shows that no changes to rats' organ when feed for six month NOAEL (180d) at 159 mg/kg bw/d

Section 12: Ecological Information Ecotoxicity	
Ecotoxicity:	The following data is reported for chemically similar sodium silicates on a 100% solids basis: LC50 (96 hour) for fish (Danio rerio) of 1108 ppm at MR 3.46 ; EC50 (48 hour) for invertebrates (Daphnia magna) of 1700 mg/l at MR 3.20 ; ErC50 and EbC50 (72 hour) for algae (Scenedesmus subspicatus) is 345 mg/l and 207 mg/l at MR 3.0 ; EC0 (18 hour) for microorganisms (Pseudomonas putida) of 3480 mg/l at MR 3.46
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.
BOD5 and COD:	No COD or BOD impact on effluents.

Section 13: Disposal Considerations	
Classification:	Disposed material is not a 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.
Identification:	Not applicable.
Special Provisions for Transport:	Not applicable.

Section 15: Other Regulatory Information		
HMIS (U.S.A.):	Health Hazard: 1 Fire Hazard: 0	Reactivity: 0 Personal Protection:
National Fire Protection Association (U.S.A.):	Health: 0 Flammability: 0	Reactivity: 0 Specific hazard:
Protective Equipment:	Chemical goggles, Body-covering protective clothing and gloves.	

Section 16: Other Information References:

Prepared by: Nichapa K. Rev.04 1 August 2017

OECD SIDS: Soluble Silicate, International Programme on Chemical Safety (IPCS): Chemical Safety Information from Intergovernmental Organization (INCHEM), France 20-23 April 2004

IUCLID Dataset Substance ID:1344-09-8, European Commission – European Chemicals Bureau, 18 Feb 2000.

Soluble Silicate: Chemical, toxicological, ecological and legal aspects of production, transport, handling and application, European Chemical Industry Council, Belgium. Feb 2013

ESIS : European chemical Substances Information System, http://esis.jrc.ec.europa.eu/, 29 May 2014

International Chemical Safety Cards: Sodium Silicate (solution 25-50%), The National Institute for Occupational Safety and Health (NIOSH), http://www.cdc.gov/niosh/ipcsneng/neng1137.html, 20 June 2014

Alphabetical index of substances and articles, United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG) http://www.unece.org/fileadmin/DAM/trans/danger/publi/unrec/rev14/English/05E_Index.pdf, 30 June 2014