



## Safety Data Sheet

### 1. Identification of the Substance/Mixture and the Company

#### 1.1 Product Identifier

**Name of Substance/Mixture :** Certified reference material (CRM):  
Silicon (Si) Standard Solution

#### 1.2 Recommended Use of the Chemical :

For laboratory or research use ONLY. Can be used for quality control and validation of analysis methods as well as calibration of instruments for analysis of dissolved silica/silicate using Continuous Flow Analysis (CFA), colorimetric methods.

This silicon solution was prepared by dissolution of sodium metasilicate ( $\text{Na}_2\text{SiO}_3$ ) with pure water. About 100 mL of this solution is in a 100-mL polypropylene bottle sealed in an aluminum-film bag.

**Restriction on Use :** Do not use this product for other purposes than testing and research.

#### 1.3 Company/Supplier :

KANSO TECHNOS CO., LTD.  
Environmental Engineering Division  
Laboratory for Instrumentation and Analysis

**Address :** 3-1-1 Higashikuraji, Katano, Osaka, 576-0061, JAPAN

**Person in Charge :** Reference Material for Nutrients in Seawater (RMNS) Production Manager

**Phone Number :** +81 (0) 72 810 6551      Fax Number : +81 (0) 72 810 6552

**Email :** RMinfo@kanso.co.jp

#### 1.4 Emergency Contact :

+81 (0) 72 810 6551 (Monday - Friday, 9AM - 6PM JST)

### 2. Hazards Identification

#### 2.1 GHS Classification

**Health Hazard :** Category 2: Skin Corrosion / Irritation  
Category 2A: Serious Eye Damage / Eye Irritation

#### 2.2 GHS Label Element :

Symbol GHS 07: Exclamation Mark



**Signal Word :** WARNING

**Hazards Statement :** H315 Causes skin irritation.  
H319 Causes serious eye irritation.

#### Precautionary Statement :

P264+P265 Wash hands thoroughly after handling. Do not touch eyes.

P280 Wear protective gloves/protecting clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Immediately rinse with plenty of water.

P305+P351+P338 IF IN EYES: Rinse cautiously with plenty of water.

Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P317 If skin irritation occurs: Get medical help.

P337+P317 If eye irritation persists: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

#### 2.3 Other hazards not otherwise classified : Not applicable.

### 3. Composition and Information on Ingredients

- 3.1 Substance** : Not applicable
- 3.2 Mixture** : Aqueous solution of sodium metasilicate ( $\leq 0.4\%$  w/w)
- Chemical Identity** : Sodium metasilicate
- Synonyms** : Sodium silicate; disodium metasilicate;  $\text{Na}_2\text{SiO}_3$
- Content** : For the actual value, see the Certificate of Analysis issued by KANSO TECHNOS.

#### Hazardous Component

Chemical Name	CAS RN	ENCS METI	EC Number (EINECS)	Nominal Mass Concentration (%)
Sodium metasilicate	6834-92-0	(1)-508	229-912-9	$\leq 0.44$

#### Non-Hazardous Component

Chemical Name	CAS RN	ENCS METI	EC Number (EINECS)	Nominal Mass Concentration (%)
Water	7732-18-5	N/A	231-791-2	> 99

### 4. First Aid Measures

#### 4.1 Description of necessary first-aid measures

- Eye Contact** : Rinse away thoroughly with clean water. Seek medical attention.
- Skin Contact** : Rinse away thoroughly with clean water. Remove contaminated clothing, shoes, etc. Seek medical attention.
- Inhalation** : Remove the victim to rest in a well ventilated area. Seek medical attention.
- Ingestion** : Rinse mouth thoroughly with water. Seek medical attention.
- Protection of First-Aid Responder** : Wear protective gloves/clothing/eyes-face protection.

#### 4.2 Most important symptoms/effects, acute and delayed

- : Skin irritation; eye damage.

#### 4.3 Indication of immediate medical attention and special treatment needed

- : Seek immediate medical attention if any of the above symptoms are present.

### 5. Fire-Fighting Measures

- 5.1 Extinguishing Media** : Carbon dioxide ( $\text{CO}_2$ ), Powder, Sand, Water, Foam
- Unsuitable Extinguishing Media** : No information available
- 5.2 Specific hazard arising from the chemical** : Thermal decomposition can lead to release of irritating and toxic gases and fumes.
- 5.3 Special protective equipment and precautions for fire-fighters** :  
Use personal protective equipment such as fireproof clothing, heat-resistant clothing, protective clothing, compressed air open-circuit self-contained breathing apparatus, compressed oxygen closed-circuit self-contained breathing apparatus, rubber gloves and rubber boots.

### 6. Accidental Release Measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precaution** : Remove potential ignition sources from the vicinity promptly and contact emergency personnel.
- Personal Protective Equipment and Emergency Procedures** : Ventilate the affected areas thoroughly until the clean-up operation is completed. Use appropriate personal protective equipment during the operation to avoid skin contact, splash etc. and inhalation of dust and gas.

**6.2 Environmental precautions**

- Take precautions and prevent from spillage into drain, rivers etc., to adversely impact the environment. Make sure to appropriately treat contaminated wastewater to prevent release into the surrounding environment directly.

**6.3 Methods and materials for containment and cleaning up**

- Containment and Clean up** : Collect spillage in empty containers by adsorbing to wiping cloth, rag, earth, sand, etc. Rinse away the remains with plenty of water.
- Prevention of Secondary Disaster** : Mark the restricted area with rope etc. to keep out unauthorized people. Carry out the clean-up operation from the windward and make people on the leeward side evacuate.

**7. Handling and Storage****7.1 Precautions for safe handling**

- Ventilation** : Keep container tightly closed and use well-ventilated areas.
- Precautions for Safe Handling** :
- Avoid rough handling such as turning over, dropping, giving a shock.
  - Prevent spill, overflow, and avoid vapor generation.
  - Keep container tightly closed after use.
  - Wash hands, face etc. thoroughly and gargle after handling.
  - Restrict drinking, eating and smoking to a designated area.
  - Keep out unauthorized people by making the handling area restricted.
  - Use proper personal protective equipment to avoid inhalation, and contact with eyes, skin, and clothing.
  - Do not bring contaminated personal protective equipment such as gloves to non-working area.

**7.2 Conditions for safe storage, including any incompatibilities**

- Storage Conditions** :
- Keep polypropylene container sealed in an aluminum bag.
  - Protect from sunlight.
  - Store in clean environment at temperature ranging from 5 °C to 35 °C.
- Packaging Material** : Polypropylene container

**8. Exposure Controls/ Personal Protection****8.1 Control parameters**

- Threshold Limit Value** : Not specified
- Permissible Concentration** :
- ACGIH TLV-TWA : Not specified
  - Value recommended by Japan Society for Occupational Health : Not specified
  - OSHA PEL TWA : Not specified

**8.2 Appropriate engineering controls**

- Ventilation/Exhaust** : Local or general ventilation equipment
- Safety Control / Gas Detection** : Measuring equipment, detecting tube
- Storage Precautions** : Keep in tightly closed container. Keep away from combustible materials, strong reducing agents and oxidizers.

**8.3 Individual protection measures**

- Personal Protection** :
- Respiratory system : Protective Mask
  - Hands : Protective gloves
  - Eyes : Safety goggles
  - Skin and Body : Protective clothing
- Hygiene Controls** : Handle this product in accordance with industrial health and safety standards.

## 9. Physical and Chemical Properties

<b>Physical state and appearance</b>	: Liquid
<b>Color</b>	: Clear and colorless
<b>Odor</b>	: Not available
<b>pH<sup>(1)</sup></b>	: 12 ( <i>laboratory value; not certified</i> )
<b>Melting Point/Freezing Point</b>	: Not available
<b>Boiling Point</b>	: Not available
<b>Vapor Pressure</b>	: Not available
<b>Relative Vapor Density (Air = 1)</b>	: Not available
<b>Density and/or relative density</b>	: 1.0 g / cm <sup>3</sup> (20 °C): <i>laboratory value; not certified</i>
<b>Solubility</b>	: Soluble in water; acidification may form insoluble silica
<b>Kinematic Viscosity</b>	: Not available
<b>Flammability</b>	: Not available
<b>Explosion limit/Flammability limit</b>	: Not available
<b>Flash Point</b>	: Not available
<b>Auto-Ignition Temperature</b>	: Not available
<b>Decomposition Temperature</b>	: Not available
<b>Partition Coefficient: n-octanol/water (log value)</b>	: Not available

<sup>(1)</sup>Alkali reserve of this solution is 0.3 g NaOH / 100 mL solution.

## 10. Stability and Reactivity

<b>10.1 Reactivity</b>	: Stable under normal ambient conditions
<b>10.2 Chemical Stability</b>	: Stable under normal ambient conditions
<b>10.3 Possibility of hazardous reactions</b>	: None under normal ambient conditions
<b>10.4 Conditions to Avoid</b>	: Sunlight, heat, and contact with acids, metals, and halogen substances.
<b>10.5 Incompatible materials</b>	: Strong acids
<b>10.6 Hazardous Decomposition Products</b>	: See Section 5 of this SDS in case of fire.

## 11. Toxicological Information

<b>11.1 Information on the likely routes of exposure</b>	: Inhalation, ingestion, skin and eye contact.
<b>11.2 Symptoms related to the physical, chemical, and toxicological characteristics</b>	: Skin irritation, burns are possible; eye damage.
<b>11.3 Delayed and immediate effects and also chronic effects from short- and long-term exposure</b>	
<b>Inhalation</b>	: Vapor inhalation may cause soar throat, caughing, and shortness of breath.
<b>Injection</b>	: If injected, mild irritation and/or burns of mucus membrane of the oropharynx, esophagus, digestive tract, or stomach may occur.
<b>Skin contact</b>	: Mild to sever skin irritation.
<b>Eye contact</b>	: May cause irritation and damage in the eye.
<b>11.4 Numerical measures of toxicity</b> (the data of the mixture is not available)	
Acute toxicity	: Not classified. Sodium metasilicate (anhydrous): Rat, Oral LD50: 600 mg/kg
Skin corrosion/irritation	: Category 2 Solutions of sodium metasilicate <13 % caused mild irritation.
Serious eye damage/irritation	: Category 2A Sodium metasilicate/water solutions may cause eye irritation.
Respiratory or skin sensitization	: Not classified; no data available.
Germ cell mutagenicity	: Not classified; no data available.
Carcinogenicity	: Not classified; no data available.
Reproductive Toxicity	: Not classified; no data available.
STOT-Single Exposure	: Not classified; no data available.
STOT-Repeated Exposure	: Not classified; no data available.
Aspiration Hazard	: No data available.

**12. Ecological Information**

<b>12.1 Ecotoxicity</b>	:	(sodium metasilicate, anhydrous) Fish Toxicity: Zebrafish ( <i>Brachydanio rerio</i> ) 96 h-LC50: 210 mg/L (IUCLID 2000)
<b>12.2 Persistence and Degradability</b>	:	No information available
<b>12.3 Bioaccumulative Potential</b>	:	No information available
<b>12.4 Mobility (in soil/sediments)</b>	:	No information available
<b>12.5 Adverse Effects to Ozone Layer</b>	:	No information available

**13. Disposal Considerations**

<b>13.1 Residual Waste</b>	:	In accordance with local and national regulations.
<b>Contaminated Container and Package</b>	:	Dispose of containers after thoroughly removing their contents.

**14. Transport Information****NOT REGULATED**

<b>14.1 UN Number</b>	:	-
<b>14.2 UN Proper Shipping Name</b>	:	
<b>14.3 Transport hazard class(es)</b>	:	
<b>14.4 Packing group</b>	:	Not applicable
<b>14.5 Environmental hazards</b>	:	Not applicable
<b>14.6 Special precautions for user</b>	:	Transport carefully by avoiding sunlight and fire. Prevent accidental spillage from rough handling.
<b>ICAO / IATA</b>	:	-

**15. Regulatory Information**

: Not applicable

**16. Other Information**

<b>Revision date</b>	:	28-June-2024 Revised according to JIS Z7253 : 2019																														
<b>Others</b>	:	The information in this Safety Data Sheet (SDS) is based on currently-available information and is not intended to be exhaustive. When handling this product under special conditions, etc., it is recommended to take safety precautions appropriate to each specific application. The precautions given in this SDS are applicable only to recommended handling conditions. This SDS is intended to provide information and not intended to guarantee anything in handling this product. This SDS is prepared based on JIS Z7253 : 2019 and Globally Harmonized System of Classification and Labelling of Chemicals (GHS Rev. 9, 2021).																														
<b>Acronyms</b>	:	<table> <tr> <td>ACGIH</td> <td>American Conference of Governmental Industrial Hygienists</td> </tr> <tr> <td>CAS</td> <td>Chemical Abstracts Service</td> </tr> <tr> <td>CFA</td> <td>Continuous Flow Analysis</td> </tr> <tr> <td>EC</td> <td>European Community</td> </tr> <tr> <td>EINECS</td> <td>European Inventory of Existing Commercial Chemical Substances</td> </tr> <tr> <td>IATA</td> <td>International Air Transportation Agency</td> </tr> <tr> <td>ICAO</td> <td>International Civil Aviation Organization</td> </tr> <tr> <td>IUCLID</td> <td>International Uniform Chemical Information Database</td> </tr> <tr> <td>JIS</td> <td>Japan Industrial Standard</td> </tr> <tr> <td>METI</td> <td>Ministry of Economy, Trade and Industry (Japan)</td> </tr> <tr> <td>OSHA</td> <td>Occupational Safety and Health Administration (USA)</td> </tr> <tr> <td>PEL</td> <td>Permissible Exposure Limit</td> </tr> <tr> <td>STOT</td> <td>Specific Target Organ Toxicity</td> </tr> <tr> <td>TLV</td> <td>Threshold Limit Values</td> </tr> <tr> <td>TWA</td> <td>Time Weighted Average</td> </tr> </table>	ACGIH	American Conference of Governmental Industrial Hygienists	CAS	Chemical Abstracts Service	CFA	Continuous Flow Analysis	EC	European Community	EINECS	European Inventory of Existing Commercial Chemical Substances	IATA	International Air Transportation Agency	ICAO	International Civil Aviation Organization	IUCLID	International Uniform Chemical Information Database	JIS	Japan Industrial Standard	METI	Ministry of Economy, Trade and Industry (Japan)	OSHA	Occupational Safety and Health Administration (USA)	PEL	Permissible Exposure Limit	STOT	Specific Target Organ Toxicity	TLV	Threshold Limit Values	TWA	Time Weighted Average
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