



**SAFETY DATA SHEET**  
**SODIUM SILICATE SOLUTION (2.6<MR<=3.2)**  
**REVISION 7, DATE 28 AUG 2023**

## 1. IDENTIFICATION

<b>Product Name</b>	<b>Sodium Silicate Solution (2.6&lt;MR&lt;=3.2)</b>
<b>Other Names</b>	N-Grade; O-Grade
<b>Uses</b>	Detergent ingredient, Adhesive, Binder, Feedstock silica source, General chemical.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	Unspecified
<b>Chemical Name</b>	Silicic acid, sodium salt, solution
<b>Product Description</b>	No Data Available

### Contact Details of the Supplier of this Safety Data Sheet

<b>Organisation</b>	<b>Location</b>	<b>Telephone</b>
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Suite 13A.03, Menara Summit Persiaran Kewajipan USJ1 47600 UEP Subang Jaya Selangor, Malaysia	+60-3-5614-2111

### Emergency Contact Details

*For emergencies only; DO NOT contact these companies for general product advice.*

<b>Organisation</b>	<b>Location</b>	<b>Telephone</b>
Poisons Information Centre	Australia – Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
National Poison Centre	Malaysia	+60-4-6536-999
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887


## 2. HAZARD IDENTIFICATION

### Poisons Schedule (Aust)

Schedule 5



## Globally Harmonised System

<b>Hazard Classification</b>	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)		
<b>Hazard Categories</b>	Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 2		
<b>Pictograms</b>			
<b>Signal Word</b>	Warning		
<b>Hazard Statements</b>	<b>H315</b>	Causes skin irritation.	
	<b>H319</b>	Causes serious eye irritation.	
<b>Precautionary Statements</b>	Prevention	<b>P280</b>	Wear protective gloves/eye protection/face protection.
	Response	<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of water.
		<b>P337 + P313</b>	If eye irritation persists: Get medical attention.
		<b>P332 + P313</b>	If skin irritation occurs: Get medical attention.
		<b>P362</b>	Take off contaminated clothing.
		<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road &amp; Rail (ADG Code)

<b>Dangerous Goods Classification</b>	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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## Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

<b>Hazard Classification</b>	Hazardous according to the criteria of Safe Work Australia under Model WHS Regulations
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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

## Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Silicic acid, sodium salt	Unspecified	1344-09-8	30 - 60 %
Water	H2O	7732-18-5	Balance %

## 4. FIRST AID MEASURES

*Description of necessary measures according to routes of exposure*

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<b>Swallowed</b>	IF SWALLOWED: Rinse mouth, then give plenty of water to drink. Do NOT induce vomiting. For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.
<b>Eye</b>	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes.
<b>Skin</b>	IF ON SKIN (or hair): Remove and isolate contaminated clothing and shoes. Immediately flush skin and hair with running water for at least 15 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
<b>Inhaled</b>	IF INHALED: Remove victim to fresh air and keep warm and at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical attention.
<b>Advice to Doctor</b>	Treat symptomatically. *Most important symptoms and effects, both acute and delayed: Causes skin irritation. Causes serious eye irritation. *Indication of any immediate medical attention and special treatment needed: None known.
<b>Medical Conditions Aggravated by Exposure</b>	No information available.

### 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Dike fire-control water for later disposal.
<b>Flammability Conditions</b>	Non-combustible (Aqueous solution).
<b>Extinguishing Media</b>	If material is involved in a fire, use dry chemical, Carbon dioxide (CO <sub>2</sub> ), foam or water spray for extinction.
<b>Fire and Explosion Hazard</b>	Flammable hydrogen gas may be produced on prolonged contact with metals, such as aluminium, tin, lead and zinc.
<b>Hazardous Products of Combustion</b>	Fire may produce irritating, corrosive and/or toxic gases.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may cause pollution.
<b>Personal Protective Equipment</b>	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

### 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Ensure adequate ventilation. Do not touch or walk through spilled material - Spillages may be slippery! Avoid breathing mist/vapours and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Pick up with sand or other non-combustible absorbent material and place into containers for later disposal (see SECTION 13).
<b>Containment</b>	Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Dike far ahead of large spill for later disposal.
<b>Decontamination</b>	Cautiously neutralise remainder, then flush away with plenty of water.
<b>Environmental Precautionary Measures</b>	Prevent entry into drains and waterways. Advise authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.
<b>Evacuation Criteria</b>	Isolate hazard area and deny entry. Keep unauthorised personnel away.
<b>Personal Precautionary Measures</b>	Use personal protective equipment as required (see SECTION 8).

**7. HANDLING AND STORAGE**

<b>Handling</b>	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid generation of mist. Avoid breathing mist/vapours and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product.
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Do not allow material to freeze! Keep container tightly closed. Keep away from foodstuffs and incompatible materials (see SECTION 10). *Storage temperature: 5 - 60°C
<b>Container</b>	Keep in the original container, clean steel or plastic containers. Do not store in aluminium, fiberglass, copper, brass, zinc or galvanized containers.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>General</b>	No specific exposure standards are available for this product.
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	No information available.
<b>Engineering Measures</b>	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
<b>Personal Protection Equipment</b>	<ul style="list-style-type: none"><li>- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Suitable mist respirator (refer to AS/NZS 1715 &amp; 1716).</li><li>- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical goggles.</li><li>- Hand protection: Wear protective gloves. Recommended: Plastic or rubber gloves. Wear insulating gloves when handling product whilst hot.</li><li>- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.</li></ul>
<b>Special Hazards Precautions</b>	When arc welding vessels containing aqueous solutions of this material, take care to control any explosion risk from hydrogen evolved by electrolysis.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Wash contaminated clothing and protective equipment before storing and re-using.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear - hazy liquid
<b>Odour</b>	Odourless
<b>Colour</b>	Colourless
<b>pH</b>	11 - 13
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	105 - 108 °C
<b>Melting Point</b>	0 °C
<b>Freezing Point</b>	0 °C
<b>Solubility</b>	Soluble in water
<b>Specific Gravity</b>	1.2 - 1.6
<b>Flash Point</b>	No Data Available

<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	20 - 5,000 cps (@ No Data Available)
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	Not applicable.
<b>Fast or Intensely Burning Characteristics</b>	No information available.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	Non-combustible (Aqueous solution).
<b>Reactions That Release Gases or Vapours</b>	Can react with sugar residues to form carbon monoxide. May react with ammonium salts resulting in evolution of ammonia gas.
<b>Release of Invisible Flammable Vapours and Gases</b>	Flammable hydrogen gas may be produced on prolonged contact with metals, such as aluminium, tin, lead and zinc.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	Absorbs carbon dioxide on exposure to air, which results in the deposition of insoluble silica.
<b>Chemical Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Avoid contact with incompatible materials.
<b>Materials to Avoid</b>	Separate from acids, reactive metals and ammonium salts. Do not store in aluminium, fiberglass, copper, brass, zinc or galvanized containers.
<b>Hazardous Decomposition Products</b>	Can react with sugar residues to form carbon monoxide. May react with ammonium salts resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on prolonged contact with metals, such as aluminium, tin, lead and zinc.
<b>Hazardous Polymerisation</b>	No information available.

## 11. TOXICOLOGICAL INFORMATION

**General Information**

Information on toxicological effects:

- Acute toxicity: May be harmful if swallowed. All symptoms of acute toxicity are due to high alkalinity. The toxicity of sodium silicate is dependent on the silica to alkali ratio and on the pH.
- Skin corrosion/irritation: Causes skin irritation.
- Eye damage/irritation: Causes serious eye irritation.
- Respiratory/skin sensitisation: Not sensitising.
- Germ cell mutagenicity: No evidence of genotoxicity. In vitro/in vivo, negative.
- Carcinogenicity: No structural alerts. IARC, NTP, OSHA, ACGIH do not list this product or any components thereof as known or suspected carcinogens.
- Reproductive toxicity: No evidence of reproductive toxicity or developmental toxicity.
- STOT (single exposure): Not classified.
- STOT (repeated exposure): Not classified. Oral NOAEL (Rat): >159 mg/kg bw/d.
- Aspiration toxicity: Not classified.

Information on possible routes of exposure:

- Ingestion: Swallowing can result in nausea, vomiting, abdominal pain and diarrhoea. May cause severe irritation to the mouth, throat and stomach.
  - Eye contact: Material will cause irritation.
  - Skin contact: Material will cause irritation.
  - Inhalation: Mist is irritant to the respiratory tract.
- Chronic effects: No information available.

**Acute****Ingestion**

Acute toxicity (Oral):

- LD50, Rat: 3,400 mg/kg bw [Supplier's SDS].

**Other**

Acute toxicity (Dermal):

- LD50, Rat: >5,000 mg/kg bw. [Supplier's SDS].

**Inhalation**

Acute toxicity (Inhalation):

- LC50, Rat: >2.06 g/m3 [Supplier's SDS].

**Carcinogen Category**

None

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Aquatic toxicity:

- LC50, Fish (Brachydanio rerio): 1,108 mg/l (96 h) [Supplier's SDS].
- EC50, Crustacea (Daphnia magna): 1,700 mg/l (48 h) [Supplier's SDS].

**Persistence/Degradability**

The product is unlikely to persist in the environment.

**Mobility**

Soluble in water. The product is expected to have high mobility in soil.

**Environmental Fate**

Liquid is alkaline and may increase the pH. High pH can be harmful to aquatic life.

**Bioaccumulation Potential**

The product has low potential for bioaccumulation.

**Environmental Impact**

No Data Available

**13. DISPOSAL CONSIDERATIONS****General Information**

Dispose of contents/container in accordance with local/regional/national regulations.

**Special Precautions for Land Fill**

Normally suitable for disposal at approved land waste site after dilution or neutralisation. Not suitable for incineration.

**14. TRANSPORT INFORMATION**

**Land Transport (Australia)**

ADG Code

<b>Proper Shipping Name</b>	Sodium Silicate Solution (2.6<MR<=3.2)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (Malaysia)**

ADR Code

<b>Proper Shipping Name</b>	Sodium Silicate Solution (2.6<MR<=3.2)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (New Zealand)**

NZS5433

<b>Proper Shipping Name</b>	Sodium Silicate Solution (2.6<MR<=3.2)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (United States of America)**

US DOT

<b>Proper Shipping Name</b>	Sodium Silicate Solution (2.6<MR<=3.2)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Sea Transport**

IMDG Code

<b>Proper Shipping Name</b>	Sodium Silicate Solution (2.6<MR<=3.2)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>EMS</b>	No Data Available
<b>Marine Pollutant</b>	No
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for SEA transport.

**Air Transport**

IATA DGR

<b>Proper Shipping Name</b>	Sodium Silicate Solution (2.6<MR<=3.2)
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for AIR transport.

**National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road &amp; Rail (ADG Code)

<b>Dangerous Goods Classification</b>	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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**15. REGULATORY INFORMATION**

<b>General Information</b>	ALKALINE SALTS
<b>Poisons Schedule (Aust)</b>	Schedule 5

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

<b>Approval Code</b>	HSR002503 - Additives Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020
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**National/Regional Inventories**

<b>Australia (AIC)</b>	Listed
<b>Canada (DSL)</b>	Listed



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Canada (NDSL)	Not Listed
China (IECSC)	Listed
Europe (EINECS)	Listed
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (List of Classified Substances)	Not Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Taiwan (TCSI)	Listed
USA (TSCA)	Listed
Mexico (INSQ)	Listed

## 16. OTHER INFORMATION

Related Product Codes	RAWMAT1000, RAWMAT1050, SODSIL1801, SODSIS0400, SODSIS0500, SODSIS0600, SODSIS0700, SODSIS0701, SODSIS1000, SODSIS1001, SODSIS1002, SODSIS1003, SODSIS1005, SODSIS1100, SODSIS1200, SODSIS1400, SODSIS2000, SODSIS3120, SODSIS4000, SODSIS4001, SODSIS4200, SODSIS4500, SODSIS4501, SODSIS5001, SODSIS5101, SODSIS5301, SODSIS5500, SODSIS6002, SODSIS8000
Revision	7
Revision Date	28 Aug 2023
Key/Legend	<p>&lt; Less Than</p> <p>&gt; Greater Than</p> <p><b>AICS</b> Australian Inventory of Chemical Substances</p> <p><b>atm</b> Atmosphere</p> <p><b>CAS</b> Chemical Abstracts Service (Registry Number)</p> <p><b>cm<sup>2</sup></b> Square Centimetres</p> <p><b>CO<sub>2</sub></b> Carbon Dioxide</p> <p><b>COD</b> Chemical Oxygen Demand</p> <p><b>deg C (°C)</b> Degrees Celcius</p> <p><b>EPA (New Zealand)</b> Environmental Protection Authority of New Zealand</p> <p><b>deg F (°F)</b> Degrees Farenheit</p> <p><b>g</b> Grams</p> <p><b>g/cm<sup>3</sup></b> Grams per Cubic Centimetre</p> <p><b>g/l</b> Grams per Litre</p> <p><b>HSNO</b> Hazardous Substance and New Organism</p> <p><b>IDLH</b> Immediately Dangerous to Life and Health</p> <p><b>immiscible</b> Liquids are insoluable in each other.</p> <p><b>inHg</b> Inch of Mercury</p> <p><b>inH<sub>2</sub>O</b> Inch of Water</p> <p><b>K</b> Kelvin</p> <p><b>kg</b> Kilogram</p> <p><b>kg/m<sup>3</sup></b> Kilograms per Cubic Metre</p> <p><b>lb</b> Pound</p> <p><b>LC50</b> LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.</p> <p><b>LD50</b> LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.</p> <p><b>ltr or L</b> Litre</p>

**m<sup>3</sup>** Cubic Metre

**mbar** Millibar

**mg** Milligram

**mg/24H** Milligrams per 24 Hours

**mg/kg** Milligrams per Kilogram

**mg/m<sup>3</sup>** Milligrams per Cubic Metre

**Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

**mm** Millimetre

**mmH<sub>2</sub>O** Millimetres of Water

**mPa.s** Millipascals per Second

**N/A** Not Applicable

**NIOSH** National Institute for Occupational Safety and Health

**NOHSC** National Occupational Health and Safety Commission

**OECD** Organisation for Economic Co-operation and Development

**Oz** Ounce

**PEL** Permissible Exposure Limit

**Pa** Pascal

**ppb** Parts per Billion

**ppm** Parts per Million

**ppm/2h** Parts per Million per 2 Hours

**ppm/6h** Parts per Million per 6 Hours

**psi** Pounds per Square Inch

**R** Rankine

**RCP** Reciprocal Calculation Procedure

**STEL** Short Term Exposure Limit

**TLV** Threshold Limit Value

**tne** Tonne

**TWA** Time Weighted Average

**ug/24H** Micrograms per 24 Hours

**UN** United Nations

**wt** Weight