Safety Data Sheet SODIUM SILICATE Solution

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SECTION 1: Identification

GHS Product identifier

Product name	SODIUM SILICATE Solution
Product number	ST015

Recommended use of the chemical and restrictions on use
Catalysts and silica gels, soaps and detergents, adhesives (especially sealing and laminating paper board containers), water treatment, bleaching and sizing of textiles and paper pulp, ore treatment, soil solidification, glass foam, pigments, drilling fluids, binder for abrasive wheels, foundry cores and molds, waterproofing mortars and cements, impregnating wood, flame retardant, enhanced oil recovery and analytical chemistry.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement
Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 2
- Skin corrosion/irritation, Cat. 2

GHS label elements, including precautionary statements

Pictograms

Signal word	**Warning**
Hazard statement(s)	
H315	Causes skin irritation
H319	Causes serious eye irritation
Precautionary statement(s)	
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water/soap
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

SECTION 3: Composition/information on ingredients

Mixtures

Component	Identification	Weight %
Sodium silicate	CAS no.: 1344-09-8 EC no.: 215-687-4	30 - 60 %
Water	CAS no.: 7732-18-5 EC no.: 231-791-2	40 - 70 %

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
In case of skin contact	Rinse with plenty of water. Get medical attention if irritation develops and persists.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor. Acute and delayed symptoms and effects: Causes serious eye damage. Signs/ symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary
For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Small fire: Use dry chemical, CO2 or water spray. If safe to do so, move undamaged containers from fire area.
Large fire: Use dry chemical, CO2, foam or water spray - Do not use water jets.
Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.

Specific hazards arising from the chemical
May liberate toxic fumes in fire including oxides of silicon and sodium.

Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Some may ignite combustibles (wood, paper, clothing, etc.) Contact with metals may evolve flammable hydrogen gas.

Special protective actions for fire-fighters
Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

Further information
Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminium, tin, lead and zinc.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Dries to form glass film which can easily cut skin. Spilled liquids are very slippery.

Environmental precautions
Sinks and mixes with water. Liquid is alkaline and may increase the pH. High pH can be harmful to aquatic life. Avoid release into water systems and sewers.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities
Corrosive to some metals such as aluminium, tin, lead and zinc. May be mildly corrosive to human tissues.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls
Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Body protection
Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/ NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Clear to hazy colourless, viscous liquid.
Color	Colourless
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	Below 0 °C
Boiling point or initial boiling point and boiling range	105 - 108°C at 100 kPa
Flammability	No data available.
Lower and upper explosion limit/ flammability limit	No data available.
Flash point	Does not burn
Explosive properties	No data available.
Auto-ignition temperature	N/A - does not burn.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	pH 11-13 (depending on concentration).
Kinematic viscosity	Viscosity: 20 - 5000 cP @ 20 °C
Solubility	Solubility in Water: Soluble.
Partition coefficient n-octanol/ water (log value)	No data available.
Vapor pressure	18 mmHg at 20 °C

Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 1.2 - 1.7 (depends upon concentration)
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Absorbs carbon dioxide on exposure to air, which results in the deposition of insoluble silica.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable in sealed containers. absords carbon dioxide on exposure to air, resulting in the deposition of insoluble silica.

Possibility of hazardous reactions
May react with ammonium salts to produce ammonia gas. Forms gels and generates heat when mixed with acids. Forms flammable hydrogen gas when in contact with aluminium, zinc, copper etc.

Conditions to avoid
Strong heating, resulting in irritating sodium silicate mists. Leaving solutions exposed to carbon dioxide in the air. Prolonged storage above 50°C or below 10°C.

Incompatible materials
Fluorine, mineral acids, organic acids, organic materials. May produce hydrogen gas on prolonged contact with metals. Gels when mixed with acids.
Will react exothermically with acids. Unsuitable Container Materials: Sodium Silicate solutions are strongly alkaline and are not compatible with aluminium, copper, brass, bronze, zinc, tin and lead. Can etch glass if not promptly removed.

Hazardous decomposition products
Silicon oxide, sodium oxide.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Acute Toxicity - Oral: LD50 (rat): >3000 mg/kg

Ingestion: Swallowing can result in nausea, vomiting, abdominal pain and diarrhoea. May cause severe irritation to the mouth, throat and stomach.

Inhalation: Exposure to vapours at room temperature is an unlikely route of exposure due to its low vapour pressure. Spray mist will cause respiratory irritation and may result in coughing as well as inflammation of nose, throat and windpipe.

Skin corrosion/irritation
Irritant. May cause redness and pain. May cause deep penetration ulcers of the skin.

Serious eye damage/irritation
A severe eye irritant. May cause conjunctivitis (inflammation of the eyes) and possibly corneal burns and ulceration.

Respiratory or skin sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure
Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure
Not classified based on available information.

Aspiration hazard
Not classified based on available information.

Additional information
[2K] Chronic Effects: Prolonged or repeated skin contact may cause dermatitis.

Sodium silicate: rabbit LD50 skin > 4640mg/kg (4640mg/kg) BEHAVIORAL: SOMNOLENCE (GENERAL DEPRESSED ACTIVITY)

LUNGS, THORAX, OR RESPIRATION: DYSPNEA National Technical Information Service. Vol. OTS0571941,
rat LD50 oral 1960mg/kg (1960mg/kg) National Technical Information Service. Vol. OTS0571941,

SECTION 12: Ecological information

Toxicity
Acute Toxicity - Fish: LC50 (96h) = 210mg/l , Danio rerio, Na, MR 1.0
LC50 (96h) = 260-310mg/l , Oncorhynchus mykiss, Na, MR 3.1

[8Y] Acute Toxicity - Daphnia: EC50 (48h) = 1700mg/l, Daphnia Magna, Na, MR 3.2

Persistence and degradability
Diluted material rapidily depolymerises to yield dissilved silica in a form that is indistinguishable from natural dissolved silica.

Bioaccumulative potential
No bioaccumulation is to be expected.

Mobility in soil
Expected to be mobile in soil. Diluted material rapidly depolymerises to yield dissolved silica in a form that is indistinguishable from natural dissolved silica.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Waste treatment
After dilution or neutralization may be landfilled. Not suitable for inceration.

Sewage disposal
No bioaccumulation is to be expected.

Other disposal recommendations
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP
Poison Schedule: S5

Canadian Domestic Substances List (DSL)
Chemical name: Silicic acid, sodium salt
CAS: 1344-09-8

SECTION 16: Other information

Further information/disclaimer
ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)