



MATERIAL SAFETY DATA SHEET

SODIUM SILICATE SOLUTION

Hazardous Substance according to the Criteria of the Australian NOHSC.
Not a Dangerous Good according to the ADG Code.

Section 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

IDENTIFICATION

Product Name **Sodium Silicate Solution**

Other Names Silicic Acid, Sodium Salt Solution; Water Glass; Soluble Glass.

Trade Names:
As Defined

Manufacturer:
Sportcrete International

USE

May be used as a: detergent ingredient; adhesive; binder; feedstock silica source; general chemical.

COMPANY DETAILS

Company Name	Sportcrete International	A.C.N. No. 070769514
Address	HEAD OFFICE: Greengauge Pty Ltd trading as Sportcrete International 176 Manly Road, Manly Qld 4179 Ph 07 38932122 Fax 07 38933578	Branch; England & USA

Emergency Telephone No: **1800 608577**

Section 2. HAZARDS IDENTIFICATION

Emergency Overview: Clear to hazy, colorless, odorless, thick liquid.
Causes eye, skin, and digestive tract irritation.
Spray mist causes irritation to respiratory tract.
Spills are slippery. High pH is harmful to aquatic life.
Reacts with acids, ammonium salts, reactive metals and some organics.
Noncombustible, but flammable hydrogen gas may be produced on prolonged contact with metals such as aluminium, tin, lead, and zinc.

Dangerous Goods Information: Not a Dangerous Good according to the ADG Code.

Hazardous Substances Information: Hazardous Substance according to the Criteria of the Australian NOHSC.

Poison Schedule Scheduled Poison S5

Acute Health Effects

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

Eye A severe eye irritant. May cause conjunctivitis (inflammation of the eyes) and possibly corneal burns and ulceration.

Skin Irritating to skin. May cause itching and skin rash.

Inhaled 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.

Chronic Health Effects

All Routes Prolonged or repeated skin contact may cause dry skin. Defatting of the skin can result in irritation and dermatitis (inflammation of the skin).

Section 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Identity of Ingredients	CAS No.	Prop'n	Risk Phrases as 100%
Sodium Silicate	1344-09-8	30-60 %	R22-36/37/38
Water	7732-18-5	30-60 %	-

Section 4. FIRST AID MEASURES

Swallowed Immediately rinse mouth with water. Repeat until product is thoroughly removed. Give water to drink. DO NOT induce vomiting due to risk of further damage. If vomiting occurs give water to drink to further dilute the product. Get medical attention. Contact the Poisons Information Centre (available in each State capital city).

Eye Immediately rinse with plenty of water for at least 15 minutes. Eyelids to be held open. Urgently get medical assistance. Transport to hospital or medical centre.

Skin Immediately wash contaminated skin with plenty of water. Soaked clothing should be removed while under the safety shower and skin washed with running water for a minimum of 30 minutes. No attempt should be made to neutralize the alkali with acid solutions, as this could aggravate the burns. Get medical attention if health effects develop or persist.

Inhaled Remove victim to fresh air. Get medical attention if health effects develop or persist.

First-Aid Facilities Safety shower and eye wash facilities.

Advice to Doctor Treat symptomatically as for strong alkalis.

Section 5 - FIRE FIGHTING MEASURES

Fire or Explosion Hazard: Aqueous solution, not flammable under normal conditions of use. Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminium, tin, lead, and zinc.

Extinguishing Media: Compatible with dry chemical water spray, regular foam and carbon dioxide fire extinguishing media.

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

Product Hazards

Special Protective Fire fighters to wear full protective clothing.

Precautions & Chemical goggles, body-covering protective clothing, chemical resistant gloves, and

Equipment rubber boots.

Section 6 - ACCIDENTAL RELEASE MEASURES

Emergency **Small spill cleanup:** Mop up and neutralize liquid, then discharge to sewer in
 Procedures accordance with federal, state and local regulations or permits.
 Large spill cleanup: Keep unnecessary people away; isolate hazard area and deny
 entry. Do not touch or walk through spilled material. Stop leak if you can do so
 without risk. Prevent runoff from entering into storm sewers and ditches which lead to
 natural waterways. Isolate, dike and store discharged material, if possible. Use sand
 or earth to contain spilled material. If containment is impossible, neutralize
 contaminated area and flush with large quantities of water.

 See *Section 13* for Disposal Considerations

Special Issues Spilled material is very slippery. Only water will evaporate from a spill of this material.
 Dries to form glass film which can easily cut skin.
 Sinks and mixes with water. High pH of this material is harmful to aquatic life.

Section 7 - HANDLING and STORAGE

Safe Handling Avoid contact with eyes, skin and clothing. Avoid breathing spray mist.
 Keep container closed. Promptly clean residue from closures with cloth.

Safe Storage Keep containers closed at all times. Store away from acids and foodstuffs. Store in
 clean steel or plastic containers. Separate from acids, reactive metals, and
 ammonium salts. Storage temperature 0-95° C. Loading temperature 45-95 ° C. Do
 not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers.

 Mild steel is the most suitable material of construction for drums, tanks, valves, pipe-
 work, etc. Concrete storage tanks can be used but must be strong enough to hold
 the weight of Sodium Silicate solution to be stored and thick enough to prevent
 seepage of water.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure No exposure standards have been established for the ingredients in this product by
 Standards NOHSC (Worksafe Australia).

SUBSTANCE	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Sodium Silicate	-	5	-	5

This standard is the manufacturers recommended limit for good practice.
 All atmospheric contamination should be minimised.

Design and Use in well ventilated area. Avoid generating and inhaling mists.
 Engineering Control Measures

Section 10 - STABILITY AND REACTIVITY

Chemical Stability	Stable in sealed containers. Absorbs Carbon Dioxide on exposure to air, which results in the deposition of Insoluble Silica.
Conditions To Avoid:	Leaving solutions exposed to carbon dioxide in the air.
Incompatible Materials:	Strong 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:	If Overheated: The solution will boil and irritating Sodium Silicate containing mists will be released.
Hazardous Reactions:	Flammable hydrogen gas will form on reaction with aluminium, copper, zinc etc. Gels and generates heat when mixed with acid. May react with ammonium salts resulting in evolution of ammonia gas.

Section 11 - TOXICOLOGICAL INFORMATION

Toxicity Data: **Acute Oral Toxicity** LD50 (rat): 1280 mg/kg (as 100%)
 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 1280 mg/kg (above) to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes. These products contain 30-60% Sodium Silicate thus each overall product has an Acute Oral Toxicity LD50 (rat): >2000 mg/kg.

Eye Irritation: Severe Irritant.
 Produced corneal, iridal and conjunctival irritation.

Skin Irritation: Irritant.
 When tested for primary skin irritation potential, this material produced irritation with a primary irritation index of 3 to abraded skin and 0 to intact skin.
 Human experience confirms that irritation occurs when this material gets on clothes at the collar, cuffs or other areas where abrasion may occur.

Subchronic 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.

Special Studies: Sodium Silicate was not mutagenic to the bacterium E. Coli when tested in a mutagenicity bioassay. There are no known reports of carcinogenicity of Sodium Silicates. 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. Sodium Silicate is not listed by IARC, NTP or OSHA as a carcinogen.

Section 12 - ECOLOGICAL INFORMATION

General:	Avoid contaminating waterways. Soluble in water. Sinks and mixes with water. Only water will evaporate from this material.
Ecotoxicity Data:	The following data is reported for Sodium Silicates on a 100% solids basis: A 96 hour median tolerance for fish (<i>Gambusia affinis</i>) of 2320 ppm; a 96 hour median tolerance for water fleas (<i>Daphnia magna</i>) of 247 ppm; a 96 hour median tolerance for snail eggs (<i>Lymnea</i>) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. These products contain 30-60% Sodium Silicate.
Persistence & Degradability	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.
Mobility	Neither silica nor sodium will appreciably bioconcentrate up the food chain. Expected to be mobile in soil. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods & Containers	Disposal to be in accordance with Local, State & Federal EPA waste regulations. Normally suitable for disposal at approved land waste site after dilution or neutralisation.
Landfill, Incineration	After dilution or neutralisation may be landfilled. Not suitable for incineration.

Section 14 - TRANSPORT INFORMATION

ROAD & RAIL:	Not defined as a Dangerous Good: by the Australian Code for the Transport of Dangerous Goods by Road & Rail.
SEA:	Not a Dangerous Good according to the International Maritime Dangerous Goods Code (IMDG Code).
AIR:	Not a Dangerous Good according to the International Air Transport Association (IATA) Dangerous Goods Regulations.

Section 15 - REGULATORY INFORMATION

Labelling:	Workplace Hazardous Substance Labelling Hazard Category: Irritant R36/38 - Irritating to eyes and skin. S24/25 Avoid contact with skin and eyes. S37/39 Wear suitable gloves and eye/face protection. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
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S28 After contact with skin, wash immediately with plenty of water.

Scheduled Poison Labelling for S5

The labelling requirements of the SUSDP do not apply to a poison that: 1/ is packed and sold solely for dispensary, industrial, laboratory or manufacturing purposes; and 2/ is labelled in accordance with the NOHSC *National Code of Practice for the Labelling of Workplace Hazardous Substances* [NOHSC:2012]

Not a Dangerous Good:

Packaging

Mild steel is the most suitable material of construction for drums, tanks, valves, pipe-work, etc.

Australian Chemical Control Schemes

NICNAS – AICS	<i>All ingredients are on the Australian Inventory of Chemical Substances.</i>		
Aust. Pesticides & Veterinary Medicine Authority -	Ag & Vet Chemicals		<i>Not applicable</i>
Therapeutic Goods Administration -	Medicines		<i>Not applicable</i>
Food Standards Australian & New Zealand -	Food		<i>Not applicable</i>
Chemicals	<i>Not applicable</i>	Ozone Depleting	<i>Not applicable</i>
Weapons Act		Substance Act	

Section 16 - OTHER INFORMATION

MSDS Dates and Revisions

MSDS Original Preparation Date : 26th November 2004

MSDS Latest Revision Date : 5th May 2005

Sections Changed in Latest Revision: -

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MSDS APPROVED : 26th November 2004

Acronyms Used

ADG Code	Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road & Rail
NOHSC	Australian National Occupational Health and Safety Commission
WHS	Workplace Hazardous Substance
CAS No.	Chemical Abstracts Service Registry Number
UN No.	United Nations Dangerous Goods Number

MSDS Code Used This MSDS has been prepared according to the National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC:2011(2003)]

This MSDS summarises to the best of our knowledge the health and safety hazard information on the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace, including in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.