NTS
Nutri-Tech Solutions®

7 Harvest Road. Yandina
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Phone +61. 7. 5472 9900
info@nutri-tech.com.au
www.nutri-tech.com.au

SAFETY DATA SHEET

Potassium Silicate

Date of Issue: 21/07/2023

CLASSIFICATION OF MATERIAL

HAZARDOUS CHEMICAL
Classified as Hazardous according to Safe Work Australia (GHS)
SUSMP Scheduled Poison (Schedule 5)
Not a Dangerous Good according to the Australian Dangerous Goods Code

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name:	Potassium Silicate
UN Proper Shipping Name:	N/A
Recommended Use:	Fertiliser
Company Name:	Nutri-Tech Solutions Pty Ltd
Address:	7 Harvest Road, Yandina, Qld 4561, Australia
Email:	info@nutri-tech.com.au
ABN:	83 010 472 590
Telephone:	+61 5472 9900
Emergency Telephone Numbers:	Police, Ambulance, Fire: 000 (Mobile 112) Poisons Information Centre (Australia) 13 11 26 Nutri-Tech Solutions Mon-Fri 8:00am-4pm AEST 07 5472 9900 (Australia)

2. HAZARDS IDENTIFICATION

GHS Classification

Skin irritation – category 2
Serious eye damage – category 1
Specific target organ toxicity (single exposure) category 3, Respiratory system

GHS Label elements

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Signal Word:	**DANGER**
Hazard Statement(s):	
H315	**Causes skin irritation**
H318	**Causes serious eye damage**
H335	**May cause respiratory irritation**
Precautionary Statement(s):	
Prevention	
P261	**Avoid breathing spray mist.**
P271	**Use only outdoors in a well ventilated area.**
P264	**Wash hands thoroughly after handling.**
P280	**Wear protective gloves and eye protection.**
Response:	
P302 + P352	**IF ON SKIN: Wash with plenty of water.**
P332 + P313	**If skin irritation occurs: Get medical advice.**
P362	**Take off contaminated clothing and wash before reuse.**
P304 + P340	**IF INHALED: Remove victim to fresh air and keep at rest in a comfortable position for breathing.**
P305 + P351 + P338	**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**
P310	**Immediately call a POISON CENTRE or doctor.**
Storage:	
P405	**Store locked up**
Disposal:	
P501	**Dispose of contents and container in accordance with local and national regulations.**

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Proportion
Potassium silicate	1312-76-1	30-60%
Water	N/A	To 100%

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4. FIRST AID MEASURES

Ingestion:	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 or a doctor.
Eye:	Immediately rinse with plenty of water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eyes and lids with water and urgently contact a physician or poisons information centre. Transport to hospital or medical centre if severe irritation of the ocular area occurs.
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 neutralise the alkali with acid solutions, as this could aggravate the burns. Get medical attention if health effects develop or persist.
Inhalation:	Remove to fresh air. Get medical attention if irritation occurs or breathing difficulty develops.
First Aid Facilities:	Eye wash station and safety shower.
Advice to Doctor:	Treat symptomatically as for strong alkalis.
General Information:	N/A

5. FIRE FIGHTING MEASURES

Flammability:	Aqueous solution, not flammable under normal conditions of use. Fire fighters recommended to wear SCBA.
Extinguishing media:	Compatible with dry chemical water spray, regular foam and carbon dioxide fire extinguishing media.
Hazchem Code:	N/A
Precautions in connection with fire	Flammable hydrogen gas may be produced on prolonged contact with metals such as aluminum, tin, lead and zinc.

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6. ACCIDENTAL RELEASE MEASURES

Emergency procedures:	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.
Methods and materials for contamination and clean-up:	Wear protective clothing when cleaning up spills. **Small spills -** Mop up and neutralise liquid, then discharge to sewer in accordance with federal, state and local regulations or permits. **Large Spills-** Keep unnecessary people away; isolate hazard 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, neutralise contaminated area and flush with large quantities of water.

7. HANDLING AND STORAGE

Precautions for safe handling:	Wear protective equipment to avoid skin and eye exposure (refer to section 8). Do not inhale spray mist. Prohibit eating, drinking and smoking in contaminated areas.
Storage:	Keep out of reach of children. Store in a cool, dry area in original sealed container. Do not store in prolonged sunlight. Separate from acids, reactive metals and ammonium salts. Do not store in aluminum, fiberglass, copper, brass, zinc or galvanized containers.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards:	None established.
Biological Limit Values:	None established.
Engineering Controls:	No specific measures are required provided the product is handled in accordance with the general rules of occupational hygiene and safety. Maintain adequate ventilation at all times.
Personal Protective Equipment:	The use of protective equipment depends on the degree and nature of exposure. The following is recommended: Wear protective gloves of impervious material (e.g. PVC), safety glasses or face shield, chemical resistant safety boots and overalls. Ensure a high level or personal hygiene is maintained when using this product. Always wash hands before eating, drinking, smoking and going to the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear liquid
Odour:	Odourless
pH:	11.3-12.3
Flammability:	Not combustible
Solubility in Water:	Fully miscible
Lower Explosion Limit:	No data available
Upper Explosion Limit:	No data available
Specific Gravity:	1.4
Conductivity:	70-90 mS/cm
Melting Point:	No data available
Boiling Point:	No data available
Vapour Pressure:	No data available
Evaporation Rate:	No data available

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of use.
Hazardous Reactions & Materials to Avoid:	Avoid extreme heat, flames and ignition sources. Avoid exposure to air. Incompatible with strong acids. Flammable hydrogen gas will form on reaction with aluminum, copper, zinc. Gels and generates heat when mixed with acid. May react with ammonium salts resulting in evolution of ammonia gas. Hazardous polymerization will not occur.
Hazardous Decomposition Products:	If overheated irritating potassium silicate vapour will be released.

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11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	The acute oral toxicity of this product has not been tested. When chemically similar sodium silicates were tested on a 100% solid basis, their single dose acute oral LD_{50} in rats ranged from 1280 mg/kg to 3200 mg/kg.
Skin:	When tested for primary skin irritation potential, similar potassium silicate solutions produced no irritation to intact skin but well defined irritation to abraded skin.
Eye:	No data available.
Respiratory or skin sensitisation:	No data available.
Germ cell mutagenicity:	No data available.
Carcinogenicity:	No data available.
Reproductive toxicity:	No data available.
Specific Target Organ Toxicity (STOT) single exposure:	No data available.
Specific Target Organ Toxicity (STOT) – repeated exposure:	No data available.
Aspiration Hazard:	No data available.
Chronic	The subchronic toxicity of this material has not been tested. In a study of rats fed chemically similar 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 2.4 g/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. The mutagenic potential of this material has not been tested.

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12. ECOLOGICAL INFORMATION

Ecotoxicity:	The ecotoxicity of potassium silicate has not been tested. The following data is reported for chemically similar sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (Gambusia affnis) of 2320 ppm; a 96 hour median tolerance for water fleas (Daphnia magna) of 247 ppm; a 96 hour median tolerance for snail eggs (Lymnea) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm.
Persistence/Degradability:	This material is not persistent in aquatic systems but it's high pH when undiluted or unneutralised is acutely harmful to aquatic life. Diluted material rapidly depolymerises to yield dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute to biological oxygen demand. This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous/sponges. Neither silica nor potassium will appreciably bioconcentrate up the food chain.
Mobility:	Expected to be mobile in soil. Diluted material rapidly depolymerises to yield dissolved silica in a form that is indistinguishable from natural dissolved silica.
Environmental Protection:	No data available

13. DISPOSAL CONSIDERATIONS

Disposal Method:	Where possible, product should be used for its intended purpose including the rinsings of the container. Dispose of in accordance with all local state and national regulations. Do not discard into drains or waterways.
Container:	Triple or preferably pressure rinse containers before disposal. Dispose of used container in accordance with all local and national regulations. Recycle containers if possible (replace cap and return cleaned container to recyclers or collection point). Empty containers and product should not be burned.

14. TRANSPORT INFORMATION

Land Transport (ADG Code):	Not regulated for transport of Dangerous Goods
Air Transport (IATA)	Not regulated for transport of Dangerous Goods
Sea Transport (IMDG Code)	Not regulated for transport of Dangerous Goods

15. REGULATORY INFORMATION

SUSMP Poisons Schedule:	S5

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16. OTHER INFORMATION

Acronyms	
ADG Code:	Australian Code for the Transport of Dangerous Foods by Road and Rail
AICS:	Australian Inventory of Chemical Substances
CAS Number:	Chemical Abstracts Service Registry
Hazchem Code:	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC:	International Agency for Research on Cancer
GHS:	Globally Harmonised System of Classification and Labelling of Chemicals
NOS:	Not Otherwise Specified
NTP:	National Toxicology Program (USA)
UN Number:	United Nations Number
SUSMP:	Standard for the Uniform Scheduling of Medicines and Poisons
STEL:	Short Term Exposure Limit
TWA:	Time Weighted Average (the average airborne concentration when calculated over a normal eight hour working day for five days a week)
LD_{50}:	Lethal Dose for 50% Mortality
SCBA:	Self Contained Breathing Apparatus

Disclaimer
The data and recommendations presented herein are based upon research of others and are believed to be accurate. However, no warranty is expressed or implied regarding this data or the results to be obtained from use thereof. Nutri-Tech Solutions P/L , assumes no responsibility for the injury to customers or third party proximity caused by the material if reasonable safety procedures are not adhered to as stipulated in this data sheet.

END OF SDS