

SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product: **Potassium Silicate 50% Liquid**
 Product Use: Formulation into mixture (mixtures): Binder
 Formulation into mixture (mixtures): Fertilizer
 Restriction of Use: Refer to Section 15

New Zealand Supplier: Horticulture Ltd
 Address: 10 Firth Street
 Drury, 2113

Telephone: +64 9 294 8453
 Fax Number: +64 9 294 7272

Emergency Telephone: 0800 764 766 (National Poison Centre)

Date of SDS Preparation: 10 March 2021

Section 2. Hazards Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2017

EPA Approval Code: Fertilisers (Corrosive) - HSR002569

Pictograms



Corrosive

Signal Word: **DANGER**

HSNO Class.	Hazard Code	Hazard Statement	GHS Category
8.1A	H290	May be corrosive to metals.	Met. Corr. 1
8.2B	H314	Causes severe skin burns and eye damage.	Skin Corr. 1B
8.3A	H318	Causes serious eye damage.	Eye Corr. 1

Prevention Code Prevention Statement

P102	Keep out of reach of children.
P103	Read label before use.
P234	Keep only in original container.
P260	Do not breathe fumes, vapours or spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective clothing as detailed in Section 8.

Response Code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P310	Immediately call a POISON CENTER or doctor/physician.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.
P301 + P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable 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.

Storage Code	Storage Statement
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

Disposal Code	Disposal Statement
P501	Refer to Section 13.

Section 3. Composition / Information on Ingredients

Ingredients	Wt%	CAS NUMBER.
Silicic acid, potassium salt	50 - 100%	1312-76-1
Water	25 - 50%	7732-18-5

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. Immediately call a POISON CENTER or doctor/physician.
If on Skin	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
If Swallowed	Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. Call a physician immediately.
If Inhaled	Remove person to fresh air. Remove contaminated clothing and loosen remaining clothing. Allow person to assume most comfortable position and keep warm. Keep at rest until fully recovered. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms:

Ingestion:	Not applicable
Inhalation:	Not applicable
Skin:	Causes skin burns.
Eye:	Causes serious eye damage.

Treatment: In the case of swallowing with subsequent vomiting, aspiration of the lungs can occur which can lead to chemical pneumonia or asphyxiation.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable
Hazards from decomposition products	No data available.
Suitable Extinguishing media	The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings. Water spray jet, Carbon dioxide (CO ₂), Extinguishing powder, Foam Unsuitable extinguishing media : Full water jet
Precautions for firefighters and special protective clothing	Use suitable breathing apparatus. Do not inhale explosion and combustion gases. Heating causes rise in pressure with risk of bursting. Cool endangered containers with water spray jet. Fire residues and contaminated fire-fighting water must be disposed of in accordance with the local regulations. Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen.
HAZCHEM CODE	2X

Section 6. Accidental Release Measures

Avoid contact with skin, eyes and clothes. Use personal protection equipment. Special danger of slipping by leaking/spilling product.

Do not allow to enter into surface water or drains. Prevent spread over a wide area (e.g. by containment or oil barriers).

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Rinse away rest with plenty of water. Dispose according to Section 13.

Section 7. Handling and Storage

Handling

- Read label before use.
- Keep only in original container.
- Do not breathe fumes, vapours or spray.
- Wash hands thoroughly after handling.
- Heating causes rise in pressure with risk of bursting.
- Wear protective clothing as detailed in Section 8.

Storage

- Store locked up.
- Store in corrosive resistant container with a resistant inner liner.
- Keep/Store only in original container.
- Keep container tightly closed.
- Make sure spills can be contained, e.g. in sump pallets or kerbed areas.
- Provide solvent-resistant and impermeable floor.
- Storage stability: 12 months.
- Storage temperature: +5 °C - +45 °C.
- Keep away from food, drink and animal feeding stuffs.
- Do not store together with: Acids

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³

No ingredients have exposure limits

Workplace Exposure Standard – Time Weighted Average (WES-TWA). The time-weighted average exposure standard designed to protect the worker from the effects of long-term exposure. Workplace Exposure Standard – Short-Term

Product Name: Potassium Silicate 50% Liquid

SDS Prepared by: Technical Compliance Consultants (NZ) Ltd

Date of SDS: 10 March 2021

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Exposure Limit (WESSTEL). The 15-minute average exposure standard. Applies to any 15- Minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both the short-term and time-weighted average exposures apply. Workplace Exposure Standards and Biological Exposure Indices NOV 2019 11TH EDITION.

Engineering Controls

Ensure adequate ventilation is provided to minimize exposure.

Personal Protection Equipment



Eyes	Eye glasses with side protection (DIN EN 166)
Hands	Tested protective gloves must be worn (DIN EN 374) Suitable material: NBR (Nitrile rubber), Butyl caoutchouc (butyl rubber) Thickness of the glove material $\geq 0,4$ mm Breakthrough time (maximum wearing time) ≥ 480 min
Skin	Clothing as usual in the chemical industry.
Respiratory	Usually no personal respirative protection necessary. Respiratory protection necessary at: exceeding exposure limit values, aerosol or mist formation. Suitable respiratory protection apparatus: P2 Particle filter device (DIN EN 143).
General	Avoid contact with eyes and skin. Avoid breathing spray. When using do not eat, drink or smoke. Take off immediately all contaminated clothing and wash it before reuse. Wash hands and face before breaks and after work and take a shower if necessary. Apply skin care products after work.

Section 9 Physical and Chemical Properties

Appearance	Clear liquid
Odour	Odourless
Odour Threshold	Not applicable
pH	14
Boiling Point	$> 100^{\circ}\text{C}$
Melting Point	Not applicable
Freezing Point	Not applicable
Flash Point	Not applicable
Flammability	Not applicable
Upper and Lower Explosive Limits	Not applicable
Vapour Pressure	Not applicable
Vapour Density	Not applicable
Density @ 20°C	1.62 g/cm ³
Solubilities	Completely miscible
Partition Coefficient:	Not applicable
Auto-ignition Temperature	Not applicable
Decomposition Temperature	Not applicable
Kinematic / dynamic	ca. 40 mPa·s @ 20°C
Particle Characteristics	Not applicable
Solid content	Ca. 50%

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Possibility of hazardous reactions	No hazardous reaction when handled and stored according to provisions.

Conditions to Avoid	Protect against: Frost.
Incompatible Materials	Exothermic reaction with aluminum, tin, zinc and alloys of these metals generating hydrogen gas.
Hazardous Decomposition Products	No known hazardous decomposition products.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable.
Dermal	Not applicable.
Inhalation	Not applicable.
Eye	Causes severe eye damage.
Skin	Causes skin burns.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	Not applicable.

Sillicic acid, potassium salt (Molar ratio K₂O : SiO₂ = 1 : 1 - ≤ 1.6)

oral LD₅₀ > 5000 mg/kg Rat
dermal LD₅₀ > 5000 mg/kg Rat

Section 12. Ecotoxicological Information

This product is not hazardous to the environment.

Persistence and degradability	The product has not been tested.
Bioaccumulation	The product has not been tested.
Mobility in Soil	The product has not been tested.
Other adverse effects	The product is an alkali. Before discharge into sewage plants the product normally needs to be neutralised. Further information Do not allow uncontrolled discharge of product into the environment. Do not allow to enter soil, waterways or waste water canal.

Aquatic toxicity

1312-76-1 Sillicic acid, potassium salt (Molar ratio K₂O : SiO₂ = 1 : 1 - ≤ 1.6)

	Dose	[h] [d]	Species	Source
Acute fish toxicity	LC ₅₀ > 146 mg/l	96 h	Leuciscus idus (golden orfe)	IUCLID
Acute algae toxicity	ErC ₅₀ 207 mg/l	72 h	Scenedesmus subspicatus	IUCLID
Acute crustacea toxicity	EC ₅₀ > 146 mg/l	48 h	Daphnia magna (Big water flea)	IUCLID

Section 13. Disposal Considerations

Triple rinse container. Cleaned packaging maybe offered for recycling or landfill in accordance with local regulations. Dispose of unwanted product as a hazardous material according to Local Regulations.

Section 14 Transport Information

This product is classified as a Dangerous Good for transport in NZ ; NZS 5433:2012



Road, Rail, Sea and Air Transport

UN No	3266
Class - Primary	8
Packing Group	III
Proper Shipping Name	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (Silicic acid, potassium salt (Molar ratio K ₂ O : SiO ₂ = 1 : 1 - <= 1.6))
Marine Pollutant	NO
Special Provisions	If the product's individual container is below 1L, it can be transported as a non-DG as long as the product packaging is still labelled as per DG requirements and the driver is given safety information in accordance with Chapter 3.4 of the UNRTDG.

Section 15 Regulatory Information

This substance is classified hazardous according to the EPA Hazardous Substances (Classification) Notice 2017

EPA Approval Code: Fertilisers (Corrosive) – HSR002569

HSNO Classification: 8.1A, 8.2B, 8.3A

HSW (HS) Regulations 2017 and EPA Notices	Trigger Quantity
Certified Handler	Not required
Location Certificate	250L (8.2B)
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	250L (8.2B)
Emergency Response Plan	1000L(8.2B)
Secondary Containment	1000L(8.2B)
Restriction of Use	Only use for the intended purpose.

Section 16 Other Information

Glossary

EC ₅₀	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
HSW	Health and Safety at Work.
LC ₅₀	Lethal concentration that will kill 50% of the test organisms inhaling or ingesting it.
LD ₅₀	Lethal dose to kill 50% of test animals/organisms.
LEL	Lower explosive level.
OSHA	American Occupational Safety and Health Administration.
TEL	Tolerable Exposure Limit.

TLV Threshold Limit Value-an exposure limit set by responsible authority.
UEL Upper Explosive Level
WES Workplace Exposure Limit

References:

1. EPA Hazardous Substances (Safety Data Sheets) Notice 2017
2. Workplace Exposure Standards and Biological Exposure Indices Nov 2017 edition.
3. Assigning a hazardous substance to a HSNO Approval (Aug 2013).
4. Transport of Dangerous goods on land NZS 5433:2012
5. HSW (Hazardous Substances) Regulations 2017

Disclaimer

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Please contact the New Zealand distributor, if further information is required.

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