

Organic Farming Systems

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Material Safety Data Sheet
Issue Date: 7/07/15

Product Name: Grosil

HAZARDOUS SUBSTANCE.

Classified Hazardous according to Australian Safety and Compensation Council (ASCC)
Scheduled Poison (Schedule 5)

Non-Dangerous Goods according to the criteria of the Australian Dangerous Goods Code (ADG Code).

1. IDENTIFICATION

Product Name	Grosil
Product Use	Fertiliser
Chemical Name	Liquid Potassium Silicate

2. COMPOSITION/ INGREDIENTS

Ingredients:	Potassium Silicate 40% and water 60%
CAS – Potassium Silicate	1312-76-1
Risk Phrases as 100%:	R36/38

3. HAZARDS IDENTIFICATION

ASCC Hazard Classification	Hazardous Substance: IRRITANT Scheduled Poison – S5
Risk and Safety Phases	R36/38 – Irritating to eyes and skin. S24 – Avoid contact with skin. S25 – Avoid contact with eyes. S26 – In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 – After contact with skin, wash immediately with plenty of water. S37 – Wear suitable gloves. S39 – Wear eye/face protection.

4. FIRST AID MEASURES

Inhalation:	Remove from exposure. Allow patient to assume most comfortable position and keep warm and at rest. Seek medical attention if victim feels unwell.
Ingestion:	Immediately rinse mouth with water. Repeat until product is thoroughly removed. Give water to drink. If swallowed 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 Poisons Information.
Eye:	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre (phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor, or for at least 15 minutes.
Skin or Hair Contact:	If skin or hair contact occurs, remove contaminated clothing and flush skin and

hair with running 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.

First Aid Facilities:

Safety shower and eye wash facilities.

Advice to Doctor:

Treat symptomatically as for strong alkalis.

Advice:

For advice, contact a Poisons Information Centre (13 11 26; New Zealand 0800 764 766) or a doctor (at once).

5. FIRE FIGHTING MEASURES

Extinguishing Media:

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

Specific Hazards:

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.

Hazardous Products of Combustion:

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

Personal Protective Equipment:

Fire fighters should wear full protective clothing, chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Wear appropriate protective clothing. Slippery when spilt.

Environmental Precautions:

Small spill cleanup: Mop up and neutralize liquid, then discharge to sewer in 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.

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.

7. HANDLING AND STORAGE

Handling:

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

Storage:

Storage area should be cool, dry and out of direct sunlight. Do not leave product in open containers.

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 Potassium Silicate solution to be stored and thick enough to prevent seepage of water.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits:

No value assigned for this specific material by the Australian Safety and Compensation Council (ASCC). However as with all chemicals exposure to concentrate should be kept to the least possible level.

Biological limit values not established.

Respiratory Protection:

Avoid inhaling the vapor or mist. Respiratory protection is not normally required

Eye Protection:	due to low inhalation risk. Avoid eye contact. Safety glasses, goggles or face shield as appropriate. An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection:	To avoid contact with skin, wear overall, long-sleeved shirt, splash apron or similar protective apparel; socks, safety shoes and industrial safety gloves and mittens. An emergency shower or water supply should be readily accessible to the work area.
Work Hygienic Practices:	Wash hands after contact with this material. Do not eat, drink, or smoke around this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear honey colour.
Odour:	Odourless
pH:	13.3 – 13.7
Solubility in Water:	Soluble in water.
Physical State:	Liquid
Boiling Point:	No data available
Melting Point:	No data available
Specific Gravity:	1.31-1.35
Flammability:	Not combustible

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of use.
Hazardous Polymerization:	If overheated the solution will boil and irritating potassium silicate containing mists will be released.
Conditions to Avoid:	Leaving solutions exposed to carbon dioxide in the air.
Incompatible Materials:	Strong Acids.
Unsuitable Container Materials:	Potassium 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 Reactions:	Flammable hydrogen gas will form on reaction with aluminium, copper, zinc etc.
Reactions:	Gels and generates heat when mixed with acid. May react with ammonium salts resulting in evolution of ammonia gas.

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	LD 50 (rat): not determined.
Eye Irritation:	Severe eye irritant. Wash immediately with copious quantities of water.
Skin Irritation:	Irritant – similar potassium silicate solutions produce minimal irritation to intact skin, but well defined irritation to abraded skin..
Inhalation:	Vapours or mist may cause irritation.
Subchronic Data:	The subchronic toxicity of this material has not been tested. In a study of rats fed chemically similar Potassium 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 Potassium Silicate administration were observed in any of the dosage groups. Another study reported adverse effects to the kidneys of dogs fed Potassium 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 Potassium Silicate in their drinking water at 600 and 1200 ppm.

12. ECOLOGICAL INFORMATION

General:	Avoid contaminating waterways. Soluble in water.
Ecotoxicity:	Sinks and mixes with water. Only water will evaporate from this material. The ecotoxicity of Potassium Silicate has not been tested. The following data is reported for chemically similar Potassium Silicates on a 100% solids basis:

Persistence and Degradability:	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>Lymnaea</i>) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. These products contain 30-60% Potassium Silicate. 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 depolymerises 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 potassium 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.

13. DISPOSAL CONSIDERATIONS

Disposal Methods:	Dispose of waste according to federal, EPA , state and local regulations. Assure conformity with all applicable regulations. Normally suitable for disposal at approved land waste site after dilution or neutralisation.
Landfill:	After dilution or neutralisation may be landfilled.
Incineration:	Not suitable for incineration.

14. TRANSPORT INFORMATION

Un number:	None allocated. This product is not considered a dangerous good according to the criteria of the Australian Dangerous Goods Code (ADG Code).
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15. REGULATORY INFORMATION

Hazard Category:	<p>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. S28 After contact with skin, wash immediately with plenty of water.</p> <p>Scheduled Poison Labelling for S5</p>
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16. OTHER INFORMATION

	The data and recommendations presented herein are based upon research of others believed to be accurate. However, no warranty is expressed or implied regarding this data or the results to be obtained from use thereof. Organic Farming Systems 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.
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