SAFETY DATA SHEET

According to
HSNO Hazardous Substances (Safety Data Sheets) Notice 2017

Section 1. Identification of the material and the supplier

Product:	**Sili-Fert P**
Product Use:	Fertiliser/Biostimulant
Restriction of Use:	Refer to Section 15
New Zealand Agent:	**Educhem Limited**
Telephone:	09 979 4491
New Zealand Supplier:	**Educhem Limited**
Address:	64 Anselmi Ridge Road Pukehoke 2120 New Zealand
Telephone:	0800 338 2436
Emergency No:	**0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	14 February 2022

Section 2. Hazards Identification

This substance is hazardous according to the EPA Hazardous Substances (Classification) Notice 2020

EPA Approval No: Fertilisers (Corrosive) – HSR002569

Pictograms

Signal Word: **DANGER**

GHS Classification and Category	Hazard Code	Hazard Statement
Skin corrosion Cat. 1B	H314	Causes severe skin burns and eye damage.
Serious eye damage Cat. 1	H318	Causes serious eye damage.
Hazardous to the aquatic environment chronic Cat. 3	H412	Harmful to aquatic life with long lasting effects.

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe dust, fumes, gas, mist, vapours or spray.
P264	Wash hands thoroughly after handling.
P273	Avoid release to the environment.
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.
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.

Disposal Code	Disposal Statement
P501	Dispose of according to Local Regulations or Authorities

Section 3. Composition / Information on Hazardous Ingredients

Ingredients	CAS Number	Weight %
Potassium Silicate	1312-76-1	5-10
Polyethylene glycol	57-55-6	40-50
Hydrochloric acid	7647-01-0	1-2.5
Boric acid	10043-35-3	1-2.5
Sodium molybdate	7631-95-0	<1%
Manganese sulphate monohydrate	10034-96-5	1-2.5
Zinc chloride	7646-85-7	1-2.5
Copper chloride dihydrate	10125-13-0	1-2.5
Other non-hazardous Ingredients	-	Balance to 100%

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes	Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, Immediately call a POISON CENTER or doctor/physician.
If on Skin	Remove contaminated clothing and footwear, rinse skin or shower the person affected if appropriate with plenty of cold water and neutral soap. In serious cases see a doctor. If the product causes burns or freezing, clothing should not be removed as this could worsen the injury caused if it is stuck to the skin. If blisters form on the skin, these should never be burst as this will increase the risk of infection. Immediately call a POISON CENTER or doctor/physician.
If Swallowed	Do not induce vomiting. Wash out mouth thoroughly with water. Never give anything to the mouth of an unconscious person. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs. Seek medical attention if needed.
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. Apply artificial respiration if not breathing. Get medical advice if breathing becomes difficult.

Most important symptoms and effects, both acute and delayed

Symptoms: Causes severe skin burns and eye damage.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable
Hazards from combustion products	As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.
Suitable Extinguishing media	ABC Powder
Precautions for firefighters and special protective clothing	Depending on the magnitude of the fire it may be necessary to use full protective clothing and self-contained breathing apparatus (SCBA). Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...) in accordance with Directive 89/654/EC.
HAZCHEM CODE	**2X**

Section 6. Accidental Release Measures

Wear protective gear as detailed in Section 8. Evacuate all unnecessary personnel. Avoid contact with skin and eyes.

Do not allow to enter drains and water courses.

Absorb the spillage using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Dispose as per Section 13.

Section 7. Handling and Storage

Precautions for Handling:

- Read label before use.
- Do not breathe dust, fumes, gas, mist, vapours or spray.
- Wash hands thoroughly after handling.
- Avoid release to the environment.
- Wear protective clothing as detailed in Section 8.
- Keep containers hermetically sealed.
- Control spills and residues, destroying them with safe methods.
- Avoid leakages from the container.
- Maintain order and cleanliness where dangerous products are used.
- Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products.
- Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Storage temperatures: Minimum = 5^0C Maximum = 30^0C
- Storage time: Maximum = 24 months
- Avoid sources of heat, radiation, static electricity and contact with food.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance		TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³
Propane-1,2-diol, Vapour and particulates	[57-55-6]	150	474	-	-
Zinc chloride fume	[7646-85-7]	-	1	-	2
Hydrogen chloride	[7647-01-0]	Ceiling	5ppm	7.5mg/m3	

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 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 2020 12TH EDITION.

DNEL (Workers)

Identification		Short Exposure		Long Exposure	
		Systemic	Local	Systemic	Local
Manganese Sulphate Cas No 10034-96-5	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	0.004mg/kg	N/A
	Inhalation	N/A	N/A	N/A	N/A
Copper(II) Chloride Dihydrate Cas No 10125-13-0	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	137mg/kg	N/A
	Inhalation	N/A	N/A	1mg/m^3	1 mg/m^3
Hydrochloric Acid Cas No 7647-01-0	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	N/A	N/A
	Inhalation	N/A	15mg/m^3	N/A	8 mg/m^3
Zinc Chloride Cas No 7646-86-7	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	8.3 mg/kg	N/A
	Inhalation	N/A	N/A	1 mg/m^3	N/A
Boric Acid Cas No 10043-35-3	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	392mg/kg	N/A
	Inhalation	N/A	N/A	8.3mg/m^3	N?A

DNEL (General Population)

Identification		Short Exposure		Long Exposure	
		Systemic	Local	Systemic	Local
Manganese Sulphate Cas No 10034-96-5	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	0.002mg/kg	N/A
	Inhalation	N/A	N/A	0.043mg/m^3	N/A
Copper(II) Chloride Dihydrate Cas No 10125-13-0	Oral	0.082mg/kg	N/A	0.041mg/kg	N/A
	Dermal	N/A	N/A	N/A	N/A
	Inhalation	N/A	N/A	N/A	N/A
Hydrochloric Acid Cas No 7647-01-0	Oral	N/A	N/A	N/A	N/A
	Dermal	N/A	N/A	N/A	N/A
	Inhalation	N/A	15mg/m^3	N/A	8 mg/m^3
Zinc Chloride Cas No 7646-86-7	Oral	N/A	N/A	0.83mg/kg	N/A
	Dermal	N/A	N/A	8.3 mg/kg	N/A
	Inhalation	N/A	N/A	1.25 mg/m^3	N/A
Boric Acid Cas No 10043-35-3	Oral	0.98mg/kg	N/A	0.98mg/kg	N/A
	Dermal	N/A	N/A	196mg/kg	N/A
	Inhalation	N/A	N/A	4.15mg/m^3	N?A

PNEC

Identification				
Manganese Sulphate Cas No 10034-96-5	STP	56 mg/L	Fresh water	0.03 mg/L
	Soil	25.1 mg/kg	Marine water	0 mg/L
	Intermittent	0.0088 mg/L	Sediment (fresh water)	0.011 mg/kg
	Oral	N/A	Sediment (marine water)	0.001 mg/kg
Copper(II) Chloride Dihydrate Cas No 10125-13-0	STP	0.23 mg/L	Fresh water	0.0078 mg/L
	Soil	65 mg/kg	Marine water	0.0052 mg/L
	Intermittent	N/A	Sediment (fresh water)	87 mg/kg
	Oral	N/A	Sediment (marine water)	676 mg/kg
Zinc Chloride Cas No 7646-86-7	STP	0.1 mg/L	Fresh water	0.0206 mg/L
	Soil	35.6 mg/kg	Marine water	0.0061 mg/L
	Intermittent	N/A	Sediment (fresh water)	117,8 mg/kg
	Oral	N/A	Sediment (marine water)	56.5 mg/kg
Boric Acid Cas No 10043-35-3	STP	10 mg/:	Fresh water	2.9 mg/L
	Soil	5.7 mg/kg	Marine water	2.9 mg/L
	Intermittent	13.7 mg/L	Sediment (fresh water)	N/A
	Oral	N/A	Sediment (marine water)	N/A

Engineering Controls
Ensure adequate ventilation

Personal Protection Equipment

Eyes	Face shield. Avoid wear contact lenses.
Hands	NON-disposable chemical protective gloves
Skin	Disposable clothing for protection against chemical risks. Safety footwear for protection against chemical risk
Respiratory	The use of protection equipment will be necessary if a mist forms or if the occupational exposure limits are exceeded.
General	

Section 9 Physical and Chemical Properties

Appearance	Liquid
Colour	Green
Odour	Odourless
Odour Threshold	Not available
pH	Not available
Boiling Point	100^0C
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure	2350 Pa (20^0C) 12381,01 Pa (12.38kPa) (50^0C)
Density	>1176.7 mg/m^3 (20^0C)
Relative Density	>1,177 (20^0C)
Water Solubility	Not available
Partition Coefficient:	Not available
Auto-ignition Temperature	360^0C
Decomposition Temperature	Not available
Kinematic Viscosity	Not available
Particle Characteristics	Not available

Section 10. Stability and Reactivity

Stability of Substance	This product is stable under normal conditions.
Possibility of hazardous reactions	Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected
Conditions to Avoid	None known.
Incompatible Materials	Oxidisng materials. Avoid alkalis or strong bases.
Hazardous Decomposition Products	Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO2), carbon monoxide and other organic compounds

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable. Mixture Rule calculation = 6438mg/kg
Dermal	Not applicable. Mixture Rule calculation = 17,857mg/kg
Inhalation	Not applicable.
Eye	Causes serious eye damage.
Skin	Causes severe 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.

Individual component information:
Acute Toxicity:

Chemical Name	Oral – LD50	Dermal – LD50	Inhalation – LC50
Potassium Silicate (1312-76-1)	1600 mg/kg	-	-
Hydrochloric Acid (7647-01-0)	-	-	-0.4mg/L
Manganese Sulphate Monohydrate (10034-96-5)	782mg/kg	-	-
Zinc Chloride (7646-85-7	200 mg/kg	-	-
Copper Chloride dehydrate (10125-13-0)	584 mg/kg	300mg/kg	-

Section 12. Ecotoxicological Information

Harmful to aquatic life with long lasting effects.

Product:	
Persistence and degradability	No data available
Bioaccumulation	No data available
Mobility in Soil	No data available
Other adverse effects	No data available

Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method:
Spent media that has removed toxic chemicals should be examined for specific hazards. Spilled product may be recovered for use if it has not come in contact with liquids or been exposed to significant amounts of gaseous contaminants. Dispose of according to Local Regulations.

Ensure any container holding waste product or contaminated spill media is labelled "Hazardous Waste – Corrosive " and that the label also has the Corrosive Pictogram, waste type identifier, and the business name, address, and phone number.

Precautions or methods to avoid: Avoid release to the environment.

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	1760
Class - Primary	8
Packing Group	II
Proper Shipping Name	CORROSIVE LIQUID, N.O.S. (COPPER(II) CHLORIDE)
Marine Pollutant	NO
Special Provisions	If the product's individual container is below 1L/kg, 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 2020

EPA Approval Code: Fertilisers (Corrosive) – HSR002569

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

Section 16 Other Information

Glossary

Cat	Category
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 2020 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

This document has been prepared by TCC (NZ) Ltd and serves as the suppliers Safety Data Sheet ('SDS'). It is based on information concerning the product which has been provided to TCC (NZ) Ltd or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While TCC (NZ) have taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, TCC (NZ) Ltd accept no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS

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

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