SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	Top up Mg, B , Zn
Product Use:	Fertilizer
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	Horticentre 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:	4 May 2020

Section 2. Hazards Identification

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

EPA Approval No: Fertiliser (subsidiary) – HSR002571

Pictograms

Toxic Chronic Corrosive Ecotoxic

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.1D (oral)	H302	Harmful if swallowed.	Acute Tox. 4
6.3B	H316	Causes mild skin irritation.	Skin Irrit. 3
6.8B	H361	Suspected of damaging fertility or the unborn child.	Repr. 2
6.9B	H373	May cause damage to organs through prolonged or repeated exposure.	STOT RE 2
8.3A	H318	Causes serious eye damage.	Eye Corr. 1
9.1B	H411	Toxic to aquatic life with long lasting effects.	Aquatic Chronic 2

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe fumes, mist, vapours or spray.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective clothing as detailed in Section 8.
P281	Use personal protective equipment as required.

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.
P314	Get medical advice/attention if you feel unwell.
P330	Rinse mouth.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
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 Ingredients

Ingredients	**Wt%**	**CAS NUMBER.**
Boric Acid	30 - 40	10043-35-3
Zinc Sulphate	7.5 – 12.5	7446-19-7

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. If eye irritation persists: Get medical advice.

If on Skin — Wash with plenty of soap and water. If skin irritation occurs: get medical advice/attention.

If Swallowed — Immediately rinse the mouth with water, then drink a lot of water. Consult the doctor in case of persistent trouble.

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: Harmful if swallowed.
Inhalation: Not applicable.
Skin: Causes mild skin irritation.

Eyes: Causes serious eye damage. Pain. Lacrimation.

Chronic: Suspected of damaging fertility or the unborn child. May cause damage to organs through repeated or prolonged exposure.

Treatment: Treat symptomatically.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable
Hazards from decomposition products	On heating/burning: release of toxic and corrosive gases/vapours nitrous vapours.
Suitable Extinguishing media	Making extinguishing agents environment-friendly. Unsuitable: high volume water jet.
Precautions for firefighters and special protective clothing	Fire fighters to wear suited clothing and an independent repertory device (SCBA) that covers the face completely with pressure. Clothing for fire fighters (including helmets, protective boots and gloves) to give a basic protection level for an incident with chemicals. Heat/fire exposure: compressed air/oxygen apparatus. Exposure to fire/heat: keep upwind, consider evacuation, have neighbourhood close doors and windows.
HAZCHEM CODE	**2Z**

Section 6. Accidental Release Measures

Evacuate unnecessary personnel. Wear PPE as detailed in Section 8. Avoid raising dust. Do not get in eyes, on skin, or on clothing. Provide adequate ventilation.

Plug the leak, cut off the supply. Dam up the solid spill. Contain released product, pump into suitable containers. Disposal of contaminated material as waste according to section 13.

Ensure that the product does not reach the ground-water, water bodies or the drainage system.

Section 7. Handling and Storage

Handling

- Read label before use.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe fumes, mist, vapours or spray.
- Wash hands thoroughly after handling.
- Clean contaminated clothing.
- Thoroughly clean/dry the installation before use.
- Avoid raising dust.
- Keep away from naked flames/heat.
- Keep container tightly closed.
- Carry operations in the open/under local exhaust/ventilation or with respiratory Protection.
- Hygiene measures: Do not eat, drink or smoke when using this product. Facilities: shower, eye shower.
- Avoid release to the environment.
- Wear protective clothing as detailed in Section 8.
- Use personal protective equipment as required.

Storage

- Keep out of reach of children.
- Store locked up.

- Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight.
- Store in original container.
- Store in a closed container.
- KEEP SUBSTANCE AWAY FROM: heat sources.
- Meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials: paper, paper with plastic inner lining, plastics.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

Substance	TWA ppm	TWA mg/m^3	STEL ppm	STEL 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 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: Provide sufficient air exchange and/or exhaust.

Personal Protection Equipment

Eyes	Chemical goggles or safety glasses. EN 166
Skin	Wear Nitrile rubber, Latex gloves with a permeation time of >480 minutes. Wear skin and body protection.
Respiratory	Use a filtering half-face mask Type P2
General	After contact with skin, wash immediately and thoroughly with plenty of water.

Section 9 Physical and Chemical Properties

Appearance	Solid powder
Colour	White
Odour	Odourless
Odour Threshold	Not available
pH (ph1% solution)	+/- 6.5
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	Non flammble
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Density	Not available
Solubilities	Soluble in water.

Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
Decomposition Temperature	Not available
Kinematic Viscosity	Not available
Particle Size	Not available

Section 10. Stability and Reactivity

Stability of Substance	This material is stable when stored and used as directed.
Hazardous Reactions	No additional information available.
Conditions to Avoid	Avoid high temperatures. Moisture.
Incompatible Materials	Strong bases. Oxidizing Agents.
Hazardous Decomposition Products	On heating/burning: release of toxic and corrosive gases/vapours nitrous vapours.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Harmful if swallowed.
Dermal	Not applicable.
Inhalation	Not applicable.
Eye	Causes serious eye damage.
Skin	Causes mild skin irritation.

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Suspected of damaging fertility or the unborn child.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	Not applicable.
STOT/RE	May cause damage to organs through prolonged or repeated exposure.

Individual component information:

Acute Toxicity:

Chemical Name	Oral – LD50	Dermal – LD50	Inhalation – LC50
Boric Acid (Cas no 10043-35-3)	446 mg/kg (mouse) NZ CCID	> 2000 mg/kg (FIFRA (40 CFR), 24 h, Rabbit, Male/female, Experimental value, Dermal)	> 2.12 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male/female, Experimental value, Inhalation (dust))
Zinc Sulphate (Cas no 7446-19-7)	1891 mg/kg (mouse NZ CCID	> 2000 mg/kg (rat)	-

Section 12. Ecotoxicological Information

HSNO Classes: 9.1B = Toxic to aquatic life with long lasting effects.

Persistence and degradability	No data available.
Bioaccumulation	**Boric acid (10043-35-3)** BCF fish 1: < 0.1 (60 day(s), Oncorhynchus tshawytscha, Flow-through system, Fresh water, Weight of evidence, Fresh weight) Log Pow -1.09 (Experimental value, EU Method A.8: Partition Coefficient, 22 °C) Not bioaccumulative. **Zinc sulphate monohydrate (7446-19-7)** BCF other aquatic organisms 1: 38 - 28960 (28 day(s), Palaemon elegans, Semi-static system, Salt water, Read-across, Fresh weight). Bioaccumable.
Mobility in Soil	No data available.
Other adverse effects	No data available.

Boric Acid (Cas no 10043-35-3)	
LC50 fish 1	50 - 100 mg/l
EC50 Daphnia 1	133 mg/l
ErC50 (algae)	52.5 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, GLP)
Zinc Sulphate (Cas no 7446-19-7)	
LC50 fish 1	1.7 mg/l
EC50 Daphnia 1	0.56 mg/l
LC50 fish 2	2.4 mg/l
EC50 Daphnia 2	1 mg/l

Do not allow to enter waterways.

Section 13. Disposal Considerations

Disposal Method:
Empty containers should be taken for recycle, recovery or waste in accordance with local regulation. Triple rinse and dispose according to Local Regulations.

Precautions or methods to avoid: Do not discharge into drains or rivers.

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	3077
Class - Primary	9
Packing Group	III
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S (Zinc

	Sulphate)
Marine Pollutant	Yes
Special Provisions	If the product's individual container is below 5L/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

EPA Approval Code: Fertiliser (subsidiary) – HSR002571

HSNO Classification: 6.1D(oral), 6.3B, 6.8B, 6.9B, 9.1B

HSWA & EPA Controls	Trigger Quantity
Certified Handler	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	1000kg (9.1B)
Emergency Response Plan	1000kg (9.1B)
Secondary Containment	1000kg (9.1B)
Restriction of Use	None

Section 16 Other Information

Glossary

EC_{50}	Median effective concentration.
EEL	Environmental Exposure Limit.
EPA	Environmental Protection Authority
HSNO	Hazardous Substances and New Organisms.
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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