SAFETY DATA SHEET

Section 1. Identification of the material and the supplier

Product:	**Carbo*Mang***
Other means of Identification	Fertiliser
Product Use:	The user should seek the advice of the county agricultural representative or a professional agricultural consultant.
Restriction of Use:	Refer to Section 15
New Zealand Supplier:	**Hortigro Ltd**
Address:	164 Manukau Road Pukekohe Auckland, 2120
Telephone:	+64 9 2371777
Emergency No:	**0508673800** **0800 764 766 (National Poison Centre)**
Date of SDS Preparation:	8 March 2018

Section 2. Hazards Identification

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

EPA Approval No: Fertilisers (subsidiary) – HSR002571

Pictograms

Irritant Chronic Corrosive

Signal Word: **DANGER**

HSNO Classification	Hazard Code	Hazard Statement	GHS Category
6.3A	H315	Causes skin irritation.	Skin Irrit. 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
9.1C	H412	Harmful to aquatic life with long lasting effects.	Aquatic Chronic 3

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P260	Do not breathe fumes, vapours or spray.
P264	Wash hands thoroughly after handling.

P273	Avoid release to the environment.
P280	Wear protective clothing.

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.
P362	Take off contaminated clothing and wash before re-use.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.

Storage Code	Storage Statement
None allocated	

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

Section 3. Composition / Information on Hazardous Ingredients

Ingredients	Wt%	CAS NUMBER.
Non-Hazardous Ingredients	94-96	N/A
Manganese sulphate monohydrate	14-16	10034-96-5

Section 4. First Aid Measures

Routes of Exposure:

If in Eyes — Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention.

If on Skin — Wash with plenty of soap and water. Take off contaminated clothing and wash before re-use. If skin irritation occurs: get medical advice/attention.

If Swallowed — Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water again. Immediately call a Poison Centre or doctor.

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:
Ingestion: Not applicable.
Skin: Causes skin irritation.
Eye: Causes serious eye damage.
Chronic: May cause damage to organs through prolonged or repeated exposure.

Section 5. Fire Fighting Measures

Hazard Type	Non Flammable
Hazards from combustion products	By heating and fire, irritating vapours/gases may be formed. Carbon monoxide and carbon dioxide.

Suitable Extinguishing media	Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog. Do not use water jet as an extinguisher, as this will spread the fire.
Precautions for firefighters and special protective clothing	Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.
HAZCHEM CODE	**None Allocated**

Section 6. Accidental Release Measures

Restrict access to area until completion of cleanup. Ensure cleanup is conducted by trained personnel only. Wear adequate personal protective equipment.

Do not allow into any sewer, on the ground or into any waterway.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Dispose of waste according to the applicable local and national regulations.

Section 7. Handling and Storage

Precautions for Handling:

- Keep out of reach of children.
- Read label before use.
- Do not breathe fumes, vapours or spray.
- Avoid repeated or prolonged skin contact. Do not get in eyes.
- Wash hands thoroughly after handling.
- Avoid release to the environment.
- Wear protective clothing.

Precautions for Storage:

- Store away from incompatible materials listed in Section 10.
- Store in an area that is: well-ventilated.

Section 8 Exposure Controls / Personal Protection

WORKPLACE EXPOSURE STANDARDS (provided for guidance only)

	TWA		STEL	
Substance	**ppm**	**mg/m³**	**ppm**	**mg/m³**

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 2017 9TH EDITION.

Engineering Controls

Use local exhaust ventilation, if general ventilation is not adequate to control amount in the air. Provide eyewash and safety shower if contact or splash hazard exists.

Personal Protection Equipment

Eyes	Wear chemical safety goggles and face shield when contact is possible.
Skin	Wear chemical protective clothing e.g. gloves, aprons, boots.
Respiratory	In case of inadequate ventilation or risk of inhalation of vapours, use suitable respiratory equipment.

Section 9 Physical and Chemical Properties

Appearance	Liquid
Colour	Dark brown
Odour	Fruity
Odour Threshold	Not available
pH	1-2 (1% solution)
Boiling Point	Not available
Melting Point	Not available
Freezing Point	Not available
Flash Point	Not available
Flammability	Not available
Upper and Lower Explosive Limits	Not available
Vapour Pressure	Not available
Vapour Density	Not available
Relative Density	1.20 - 1.23 at 20 ºC (water = 1)
Water Solubility	Soluble in water
Partition Coefficient:	Not available
Auto-ignition Temperature	Not available
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	Not reactive under normal conditions of use.
Conditions to Avoid	Incompatible materials.
Incompatible Materials	Strong acids (e.g. hydrochloric acid), strong bases (e.g. sodium hydroxide), strong oxidizing agents (e.g. perchloric acid).
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.

Section 11 Toxicological Information

Acute Effects:

Swallowed	Not applicable.
Dermal	Not applicable.
Inhalation	Not applicable.
Eye	Causes serious eye damage.
Skin	Causes skin irritation.

Acute Toxicity - Substances

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Manganese sulphate monohydrate		782 mg/kg (rat)	

Chronic Effects:

Carcinogenicity	Not applicable.
Reproductive Toxicity	Not applicable.
Germ Cell Mutagenicity	Not applicable.
Aspiration	Not applicable.
STOT/SE	May cause nose and throat irritation.
STOT/RE	May cause damage to organs through prolonged or repeated exposure.

Section 12. Ecotoxicological Information

HSNO Classes: 9.1C = Harmful to aquatic life with long lasting effects.

Acute Aquatic Toxicity

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Manganese sulphate monohydrate	30.6 mg/L (Pimephales promelas (fathead minnow); 96-hour)			

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

Section 13. Disposal Considerations

Disposal Method:
Empty containers retain product residue. Follow label warnings even if container appears to be empty. Triple rinse and dispose according to Local Regulations.

Precautions or methods to avoid: Do not allow to enter waterways.

Section 14 Transport Information

This product is NOT classified as a Dangerous Good for transport in NZ ; NZS 5433:2012

Section 15 Regulatory Information

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

EPA Approval Code: Fertilisers (subsidiary) – HSR002571

HSNO Classification: 6.3A, 6.9B, 8.3A, 9.1C

HSW (HS) Regulations 2017 and EPA Notices	Trigger Quantity
Certified Handler	Not required
Location Certificate	Not required
Tracking Trigger Quantities	Not required

Signage Trigger Quantities	1000L (9.1C)
Emergency Response Plan	1000L (9.1C)
Secondary Containment	1000L (9.1C)
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. HSNO Approved Code of Practice: 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

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, Hortigro, if further information is required.

Issue Date: 8 March 2018 Review Date: 8 March 2023