



Trace Element Blend

ZMC 100:40:10

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier	Trace Element Blend ZMC 100:40:10
Other means of identification	ZMC100:40:10
Recommended use of the chemical	Liquid trace-element fertiliser for crop production.
Restrictions on Use	Use only for the intended application.
Details of Australian manufacturer or importer	Australian manufacturer / importer: Wilchem Pty Ltd ABN: 44 614 126 573 Address: 39 Jonal Drive, Cavan, SA 5094 AUSTRALIA Telephone: 08 8359 6855 Email: admin@wilchem.com.au Website: www.wilchem.com.au
Emergency phone number	Poisons Information Centre: 13 11 26 , (Australia, 24 hours)

2. HAZARDS IDENTIFICATION

Classification of the hazardous chemical

Classified as a hazardous chemical in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals, 7th Revised Edition (GHS 7), as adopted under Australian WHS legislation.

Hazard class	Acute toxicity (oral), Category 4 Serious eye damage, Category 1 Specific target organ toxicity – repeated exposure, Category 2 Acute hazards to the aquatic environment, Category 1 Long-term hazard to the aquatic environment, Category 2
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Signal word DANGER

Hazard pictograms



Hazard statements

Harmful if swallowed.

Causes serious eye damage.

May cause damage to organs through prolonged or repeated exposure if swallowed or inhaled.

Very toxic to aquatic life.

	Toxic to aquatic life with long lasting effects.
Prevention statements	Do not breathe mist or spray. Wash exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response statements	IF SWALLOWED: Call a POISONS INFORMATION CENTER or doctor if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISONS INFORMATION CENTRE or doctor. Get medical attention if you feel unwell. Collect spillage.
Disposal statements	Dispose of contents/container in accordance with local/regional/national regulations.
Other hazards which do not result in classification	Acidic metal-salt solutions may irritate skin and the respiratory tract if mist is generated.

DANGEROUS GOODS STATEMENT

Meets the underlying classification criteria for UN 3082 — ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC SULPHATE, COPPER SULPHATE), Class 9, Packing Group III.

For Australian road and rail transport, Special Provision AU01 of the Australian Dangerous Goods Code (ADG Code), Edition 7.9, applies. When transported in packagings that do not incorporate a receptacle exceeding 500 kg(L), or in IBCs, the product is **not** subject to the requirements of the ADG Code.

Where the conditions of Special Provision AU01 are not met, the product is transported as UN 3082, Class 9, Packing Group III.

Refer to Section 14 for further information.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Identity	CAS No.	Concentration or concentration range (% w/w)
Zinc sulphate	7733-02-0	10 - 20
Manganese sulphate	7785-87-7	5 - 10
Copper sulphate	7758-98-7	1 - 5
Ingredients determined not to be hazardous or present below disclosure thresholds, including water.	-	to 100

Note: Metal sulphate concentrations are expressed as anhydrous equivalents. Raw materials used in manufacture may comprise different hydrated forms or pre-prepared aqueous solutions. The stated concentrations represent the equivalent quantity of anhydrous ZnSO₄, MnSO₄ and CuSO₄ present in the finished product.

4. FIRST AID MEASURES

Description of necessary first aid measures

Inhalation	Remove to fresh air. Keep at rest. Obtain medical advice if ill-effects occur or persist.
Skin contact	Remove contaminated clothing. Wash skin thoroughly with soap and water. Obtain medical advice if irritation develops. Wash clothing before reuse.
Eye contact	Immediately rinse cautiously with clean water for at least 15 minutes, holding eyelids open. Remove contact lenses if easy to do. Continue rinsing. Immediately call a POISONS INFORMATION CENTRE or doctor.
Ingestion	Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a POISONS INFORMATION CENTRE or doctor. If vomiting occurs naturally, lay patient on side, in recovery position.

First aid facilities

Provide eyewash and access to running water.

Symptoms and effects caused by exposure, including acute and delayed effects

Serious eye damage may occur following direct contact. Ingestion may cause nausea, vomiting and gastrointestinal irritation. Prolonged or repeated exposure may cause systemic effects associated with manganese exposure.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media

Product is water-based and not combustible. Use media appropriate to surrounding fire.

Specific hazards arising from the chemical, including hazardous combustion products

Heating to dryness or fire may produce sulphur oxides and metal oxides. Containers may rupture when heated.

Special protective equipment and precautions for fire fighters

Evacuate area and contact emergency services. Toxic gases may be present in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combatting fire. Use water fog or spray to cool intact containers and nearby storage areas. Prevent contaminated fire water entering drains and waterways.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Isolate area. Avoid eye/skin contact and mist inhalation. Wear gloves, protective clothing and chemical splash goggles/face shield. Ensure ventilation.

Environmental precautions

Prevent entry to drains, soil and waterways. Notify the appropriate authority if significant contamination occurs.

Methods and materials for containment and clean up

Small spills: Contain and absorb with sand, earth or other inert absorbent material. Recover where practicable and place residues in a suitable labelled container. If washing is required, use the minimum quantity of water necessary and collect or contain washings where practicable. Do not allow product or wash water to enter stormwater drains or waterways.

Large spills: Stop leak if safe to do so. Bund with sand, earth or other inert absorbent material. Recover and recycle liquid where practicable. Absorb residue and place in labelled containers for disposal. Do not wash concentrated product to drain. Wash the area with minimal water and collect washings.

7. HANDLING AND STORAGE**Precautions for safe handling**

Read all Safety Information, including Directions for Use on the label. Avoid contact and generation of aerosols. Do not eat, drink or smoke while handling. Wash thoroughly after use. Do not mix with other agricultural chemicals unless compatibility has been established.

Conditions for safe storage, including any incompatibilities

Store in the closed original container in a cool, dry, well-ventilated, bunded area. Protect from heat, freezing and direct sunlight. Segregate from alkalis, strong oxidising agents, food and animal feed.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION**Workplace exposure standards (applicable until 30 November 2026)**

No product-specific Australian workplace exposure standard has been assigned to this product. The following Australian workplace exposure standards apply to copper and manganese contained in the product.

Copper, dusts and mists (as Cu):

TWA: 1 mg/m³

Copper fume (as Cu):

TWA: 0.2 mg/m³

Manganese, dust and compounds (as Mn):

TWA: 1 mg/m³

Manganese, fume (as Mn):

TWA: 1 mg/m³

STEL: 3 mg/m³

Workplace exposure limits (applicable from 1 December 2026)

Copper, dusts and mists (as Cu):

TWA: 1 mg/m³

Copper fume (as Cu):

TWA: 0.2 mg/m³

Manganese fume, dust and compounds (as Mn), inhalable fraction:

TWA: 0.1 mg/m³

Advisory notation: OTO (ototoxic)

Manganese fume, dust and compounds (as Mn), respirable fraction:

TWA: 0.02 mg/m³

Advisory notation: OTO (ototoxic)

Exposure limits are expressed as elemental manganese (Mn) or elemental copper (Cu), as applicable.

This product is an aqueous solution and does not generate dust under normal conditions of use. Airborne exposure may occur where spray mist or aerosol is generated. Copper and manganese fume are not expected during normal handling of the liquid product.

TWA = Time weighted average

STEL = Short-term exposure limit

Biological monitoring

No specific biological exposure limit has been established for this product. Where workplace risk assessment indicates significant or repeated exposure to manganese- or copper-containing mist or aerosol, appropriate occupational health or health monitoring advice should be considered in accordance with applicable work health and safety requirements.

Engineering controls

Use in well-ventilated areas. Avoid generation of spray mist or aerosols.

Where airborne metal-containing mist or aerosol may be generated, use suitable process enclosure, local exhaust ventilation or other engineering controls to maintain airborne concentrations below the applicable workplace exposure standard or workplace exposure limit.

Air monitoring should be considered where significant aerosol or mist exposure may occur or where adequate control of airborne exposure cannot otherwise be demonstrated.

Personal Protective Equipment (PPE)

Eye and face protection	Splash-proof chemical goggles (AS 1336 / 1337). Where significant splashing is possible, wear a face shield in addition to chemical splash goggles.
Skin protection	Wear chemically resistant protective gloves. Suitable materials may include nitrile, PVC or rubber. Glove selection should take account of the task, duration of contact and the glove manufacturer's chemical-resistance information. Elbow-length gloves are recommended where significant contact or splashing may occur. Protective gloves should be selected and used in accordance with AS/NZS 2161.
Body protection	Wear suitable protective clothing including long sleeves, long trousers and safety footwear. Where significant splashing is possible, wear chemically resistant protective clothing or apron as appropriate.
Respiratory protection	Respiratory protection is not normally required where the product is handled as a liquid without generation of mist or aerosol and adequate ventilation is provided. Where spray mist or aerosol may be generated and engineering controls are insufficient to maintain airborne metal concentrations below the applicable workplace exposure standard or workplace exposure limit, wear a correctly fitted respirator incorporating a suitable particulate filter, for example a P2 filter. Respiratory protective equipment must be selected, fitted, used and maintained in accordance with AS/NZS 1715 and AS/NZS 1716.
Thermal hazards	None identified.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Colour	Deep green
Odour	None
Melting point / freezing point	< 0°C
Boiling point	>100°C
Flammability	Nonflammable aqueous mixture
pH (neat)	3 to 4
Solubility	Soluble in water
Vapour pressure	Not determined
Density and /or relative density	1.31 – 1.37 @ 20°C

10. STABILITY AND REACTIVITY**Reactivity**

No specific hazardous reactions are known under normal conditions of use.

Chemical stability

Stable under normal conditions of storage and handling.

Possibility of hazardous reactions

No hazardous reactions under normal conditions of storage and handling.

Conditions to avoid

Avoid prolonged storage below 0°C. Keep away from heat (>40°C) and out of direct sunlight.

Incompatible materials

Incompatible with strong alkalis, strong reducing agents, strong oxidising agents and reactive metals. Contact with alkalis may result in precipitation of metal hydroxides.

Hazardous decomposition products

Sulphur oxides and metal oxides on strong heating.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation:	Spray mist or aerosol may cause irritation of the nose, throat and upper respiratory tract. Repeated or prolonged inhalation of manganese-containing aerosol may cause systemic effects.
Skin contact:	Brief incidental contact is not expected to cause significant irritation. Repeated or prolonged contact may cause irritation.

Ingestion:	Harmful if swallowed. May cause nausea, vomiting and gastrointestinal irritation.
Eye contact:	Causes serious eye damage. Contact may cause severe pain, redness, watering and tissue injury.
Chronic effects:	May cause damage to organs through prolonged or repeated exposure if swallowed or inhaled. This classification is principally associated with the manganese sulphate content of the finished product.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact may cause severe pain, redness, watering and serious tissue damage.

Ingestion may cause nausea, vomiting, abdominal discomfort and gastrointestinal irritation.

Inhalation of spray mist or aerosol may cause coughing and irritation of the nose, throat and upper respiratory tract.

Excessive or prolonged exposure to manganese compounds may affect the nervous system. Such effects are associated primarily with repeated occupational exposure to airborne manganese.

Immediate and delayed effects

Serious eye damage may occur immediately following direct contact.

Gastrointestinal symptoms may occur following ingestion.

Respiratory irritation may occur following inhalation of spray mist or aerosol. Systemic effects associated with manganese exposure may develop following prolonged or repeated exposure.

Numerical measures of toxicity

The finished product has not been tested for acute toxicity.

For classification purposes, zinc sulphate, manganese sulphate and copper sulphate concentrations are expressed as anhydrous equivalents. Using the GHS acute-toxicity Category 4 conversion values for the classified metal sulphates, the estimated oral acute toxicity of the finished mixture is approximately 1,700 mg/kg.

The finished product therefore meets the criteria for Acute Toxicity (oral), Category 4.

Toxicological endpoint information

Acute toxicity	Acute toxicity (oral), Category 4. Harmful if swallowed.
Skin corrosion / irritation	Not classified. Incidental contact is not likely to cause irritation. Repeated or prolonged contact may cause irritation.
Serious eye damage / irritation	Serious eye damage category 1. Causes serious eye damage.
Respiratory sensitisation	Not classified.
Skin sensitisation	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.
Reproductive toxicity	Not classified.
Specific Target Organ Toxicity (STOT)– single exposure	Not classified
Specific Target Organ Toxicity (STOT) – repeated exposure	Category 2. May cause damage to organs through prolonged or repeated exposure if swallowed or inhaled.
Aspiration hazard	Not an aspiration hazard.
Medical conditions aggravated by exposure	No information available.

Additional information

Toxicological test data are not available for the finished product unless otherwise stated. The health hazard assessment has been derived from available information on the ingredients, their concentrations and the applicable GHS 7 mixture-classification criteria.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

Finished-product ecotoxicity test data are not available. The environmental classification has been derived from the zinc sulphate, copper sulphate and manganese sulphate content using the applicable GHS 7 mixture-classification criteria.

Avoid release to the environment.

Persistence and Degradability

Conventional biodegradability criteria are not applicable to the inorganic metal salts contained in this product. Dissolved metal ions do not biodegrade and may undergo precipitation, complexation, adsorption and other transformations in the environment.

Bioaccumulative Potential

Dissolved metals may bind to sediments and organic matter; bioavailability depends strongly on pH, hardness and water chemistry.

Mobility in Soil

The product is water soluble. Dissolved metal ions may initially be mobile but can subsequently bind to soils and sediments or precipitate depending on environmental conditions.

Other Adverse Effects

Release of zinc, copper and manganese may adversely affect aquatic organisms and aquatic ecosystems. Avoid uncontrolled release.

13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Recover or recycle the product where practicable. Dispose of residues, contaminated absorbents and packaging through a licensed waste contractor in accordance with applicable Commonwealth, state, territory and local requirements. Do not discharge concentrated product to stormwater, surface waters or soil. Empty containers may retain product residues and should be handled accordingly.

14. TRANSPORT INFORMATION**ROAD AND RAIL TRANSPORT**

The product meets the classification criteria for an environmentally hazardous substance, liquid, N.O.S., Class 9.

Under Special Provision AU01 of the Australian Code for the Transport of Dangerous Goods by Road & Rail, Edition 7.9 (ADG Code), environmentally hazardous substances meeting the description of UN 3082 are not subject to the ADG Code when transported by road or rail in:

(a) packagings that do not incorporate a receptacle exceeding 500 kg(L); or

(b) IBCs.

Where the conditions of Special Provision AU01 are **not** met, the following transport classification applies.

UN number	UN 3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ZINC SULPHATE, COPPER SULPHATE)
Transport hazard class	Class 9
Packing group	III
Subsidiary risk(s)	None.
Environmental hazards for transport purposes	Environmentally hazardous substance.
Special precautions for user	Avoid release to the environment. Prevent product entering drains and waterways. Refer to Sections 6, 7 and 8 of this Safety Data Sheet.
Additional information	ADG Special Provision AU01 applies to Australian road and rail transport only. It does not apply to international transport or to air or sea transport within Australia. For road and rail transport in packagings satisfying Special Provision AU01, or in IBCs, the product is not subject to the requirements of the ADG Code.
Hazchem code	•3Z

15. REGULATORY INFORMATION

International conventions and agreements:

No specific international convention applicable to the product has been identified.

Safety, health and environmental regulations

Poisons scheduling: Schedule 6 – POISON under the current Australian Poisons Standard due to the zinc sulphate content.

16. OTHER INFORMATION

This Safety Data Sheet has been prepared in accordance with the Safe Work Australia Model Code of Practice: Preparation of Safety Data Sheets for Hazardous Chemicals and the Globally Harmonized System of Classification and Labelling of Chemicals, Seventh Revised Edition (GHS 7), as adopted under Australian work health and safety legislation.

Date of preparation 20 September 2026

Supersedes SDS dated April 2025

Revision number

1

Disclaimer

The information in this SDS is based on information reasonably available to the Australian manufacturer or importer at the date of preparation or review. It describes the product in relation to workplace health and safety requirements and is not a product specification or warranty of performance. The product should be used only for the applications identified in Section 1 and in accordance with the information in this SDS. Users remain responsible for assessing workplace risks arising from their particular use conditions and for complying with applicable legislation.

End of Report