

PRINT DATE :
REVISION DATE : 24.07.12
VERSION : 1.0 / EN (New Zealand)



SAFETY DATA SHEET

according to ST/SG/AC.10/30/REV.10

ZMC Release LPH™

SECTION 1: Identification of the substance and of the company

1.1 Product identifier:

Substance

Substance name : ZMC Release LPH™
Other means of identification : Not applicable.
Hazard components for labelling : Copper sulphate, Manganese sulphate, and Zinc sulphate.

1.2 Relevant Identified use

Relevant identified uses: : Fertilizer
Uses advised against : Not for consumption.

1.3 Details of the supplier of the safety data sheet

Supplier

Name : Agri Technovation (Pty) Ltd
Address : 27A Wicklam Lane,
Greenhithe, Auckland, 0632
Telephone : +649 954 5411
E-Mail : adminau@agritechnovation.com
www.agritechnovation.co.nz

1.4 EMERGENCY TELEPHONE NUMBER

New Zealand Poison Hot-Line number: 0800 764 766

SECTION 2: Hazard identification

2.1 Classification of the substance

| Classification according to ST/SG/AC.10/30/REV.10 | Classification procedure |
|--|----------------------------------|
| Specific Target Organ Toxicity, Category 2 | Based on concentration threshold |
| Acute toxicity, Category 5, Oral | Based on concentration threshold |
| Serious eye damage, Category 1 | Based on concentration threshold |
| Hazardous to the aquatic environment, Acute Category 1 | Based on concentration threshold |
| Hazardous to the aquatic environment, Chronic Category 1 | Based on concentration threshold |

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2.2 Label elements

Labelling according to ST/SG/AC.10/30/REV.10

Hazard pictograms:



Signal word:

Danger

Hazard statements:

May be harmful if swallowed. Causes serious eye damage. May cause damage to organs.

Precautionary statements:

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye, and face protection. IF exposed or concerned: Get medical advice or attention. Store locked up. Dispose of contents or container in accordance with national regulations. If skin irritation occurs: Get medical advice or attention. Wash hands thoroughly after handling. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

Supplemental Hazard information:

No supplementary hazard information.

Special rules for supplemental label elements for certain mixtures:

None known.

Additional labelling:

Keep out of reach of children.

2.3 Other hazard

None known.

SECTION 3: Composition/ Information on ingredients

3.1 Substances

Copper sulphate, Manganese sulphate, and Zinc sulphate.

3.2 Mixture

Description of the mixture:

Aqueous liquid blend of fulvic acid with Zinc, Copper and Manganese compounds for soil application.

Hazardous ingredients

| Substance name | CAS No. | Concentration | Classification according to ST/SG/AC.10/30/REV.10 |
|------------------------------|-----------|---------------|--|
| Copper sulphate pentahydrate | 7758-99-8 | 2-5% | Acute toxicity, Category 5, oral Serious eye damage, Category 1 |

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| | | | |
|--------------------|-----------|-------|--|
| | | | Hazardous to the aquatic environment, Acute Category 2 Hazardous to the aquatic environment, Chronic Category 2 |
| Manganese sulphate | 7785-87-7 | 2-5% | Serious eye damage, Category 1 Specific Target Organ Toxicity, Category 2 Hazardous to the aquatic environment, Chronic Category 2. |
| Zinc sulphate | 7746-19-7 | 5-15% | Acute toxicity, Category 5, oral Serious eye damage, Category 1 Hazardous to the aquatic environment, Acute Category 2 Hazardous to the aquatic environment, Chronic Category 2 |

NOTE: There are no other ingredients present according to the current knowledge of the supplier (considering their concentrations present in the product) that are classified as hazardous to health or the environment and that cause/contribute to the correct GHS classification of this product. These ingredients are therefore, in terms of the South African Hazardous Chemical Regulations 2011; Regulation 14(b), not listed.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Take precautions to ensure your own safety when helping another person. Always wear appropriate personal protective equipment (see Section 8). If medical advice is needed, have Safety Data Sheet or product label at hand and provide treatment already administered.

Following inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice if you feel unwell.

Following skin contact

Rinse with lukewarm, gently flowing water and mild soap for 5 minutes or until product is removed. If skin irritation occurs or you feel unwell: Get medical advice.

Following eye contact

If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes while holding eyelids open. If eye irritation persists: Get medical advice.

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Following ingestion

If you feel unwell or if concerned: Get medical advice.

Self-protection of the first aider:

No additional information.

4.2 Most important symptoms and effects, both acute and delayed.

No information available on this product.

4.3 Indication of any immediate medical attention and special treatment needed.

No information available on this product.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Substance is non-combustible. Select firefighting measures according to the surrounding conditions.

5.2 Special hazards arising from the substance or mixture

In the case of inclusion in an ambient fire hazardous substances, such as Sulphur oxides can be released.

5.3 Advice for fire-fighters

Wear self-contained breathing apparatus and special tightly sealed suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures

Protective equipment

Wear respiratory protection, eye protection, hand protection and body protection.

See section 8.2 of this SDS.

Emergency procedures

Evacuate all individuals. Warn surrounding areas. Isolate the area. Put protective measures in place. Only individuals with suitable personal protective equipment should be allowed into the affected area. Remove the source if safe to do so and provide adequate ventilation in closed spaces. Wash spill area.

6.2 Environmental precautions

Low hazard to water. Inform the responsible authorities when very large quantities get into water, drainage, sewer, or the ground.

6.3 Methods and material for containment and cleaning up

For containment

Use suitable closed, labelled containers for disposal in accordance with national and local regulations. The floor must not have a floor drain.

For cleaning up

Use suitable protective equipment while cleaning if necessary. See section 8.2 of this SDS. Wipe clean with cloth or paper towel. Tested industrial vacuum cleaner or suction device can be used as alternative. Use of blower for cleaning is not recommended.

6.4 Reference to other sections

See section 8.2 for information on personal protective.

See section 13 for disposal methods.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

Heed advice on general occupational hygiene. Fill only into clearly marked containers. Label containers and pipelines clearly. Provide good ventilation in work areas. Used closed apparatus if possible. Washing facility at the workplace is required. Eye bath required. These locations must be sign posted. If release of the product can't be prevented, then it should be suctioned off at the point of exit.

Fire preventions

Substance is incombustible. Select firefighting measures according to the surrounding conditions.

Advice on general occupational hygiene

Take care to keep workplace clean and dry. Wear personal protective equipment. Avoid skin contact with product. Do not leave container open.

Wash skin with soap and water before breaks and at the end of work shifts and apply fatty skin-care products after washing. Foods, beverages, and other articles of consumption must not be consumed at the work areas. Suitable areas are to be designated for these purposes. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Transport in sealed containers above 4°C. Store in dry, ventilated place in tightly sealed container above 4°C.

Requirements for storage rooms and vessels

Do not use any food containers to prevent a mistake. Containers must be labelled clearly and permanently. Store in the original container as much as possible. Container should be locked up, away from children.

Packaging materials

Glass, PE, PP and PVC.

Materials to avoid

Pharmaceuticals, foods, and animal feeds including additives; Infectious, radioactive and explosive substances; Strongly oxidizing substances and most metals

7.3 Specific end uses

See section 1.2. No additional information.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The mixture does not, within the current knowledge of the supplier, contain further substances above their cut-off concentration limit fulfilling the criteria of hazard classes according to the ST/SG/AC.10/30/REV.10 regulation or present a health risk below the cut-off concentration limit, other than the substances listed. Substances that do not fall within classification criteria are not specified in this document to protect confidentiality.

8.2 Exposure controls

Appropriate engineering controls

All ventilation should be designed in accordance with OSHA standard. Use local exhaust at filling zones and where leakage and dust formation are probable. Use mechanical (general) ventilation for storage areas. Use appropriate ventilation as required to keep Exposure Limits in Air below limits.

Components with occupational exposure limits

None

Personal protective equipment

Eye / Face protection

Wear glasses with side protection.

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Skin protection

Hand protection

Suitable gloves type

The use of resistant protective gloves is recommended.

Skin protection cremes do not protect as effectively against the substance as protective gloves.

Wear duration with occasional contact (splash): 8 hours

Be aware that the liquid may penetrate gloves. Frequent change is advisable.

Body protection

Wear an overall or a lab coat

Respiratory protection

In an emergency (e.g.: unintentional release of the substance) respiratory protection must be worn. Wear respiratory protection during operations where spraying or misting occurs.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid **Colour** : Dark brown

Odour : No specific odour **Odour threshold** : No data available.

| | Value | Method | Temperature | Pressure | Remark |
|--|------------------------|----------|-------------|----------|---------------|
| pH | 3.1 – 3.5 | Measured | 20 °C | 1 atm | 100% solution |
| Melting point/freezing point | Not available. | | | | |
| Initial boiling point/boiling range | Not available. | | | | |
| Flash point | Not available. | | | | |
| Evaporation rate | Not available. | | | | |
| Flammability (solid, gas) | Not relevant. | | | | |
| Upper/lower flammability or explosive limits | Not relevant. | | | | |
| Vapor pressure | Not available. | | | | |
| Vapor density | Not available. | | | | |
| Relative density | 1.20-1.24 | Measured | 20°C | 1 atm | 100% solution |
| Solubility(ies) | 100 % soluble in water | | | | |
| Partition coefficient: n-octanol/water | Not available. | | | | |
| Auto-ignition temperature | Not relevant. | | | | |
| Decomposition temperature | Not available. | | | | |
| Viscosity | Not available. | | | | |
| Explosive properties | Not relevant. | | | | |
| Oxidizing properties | Not available. | | | | |

9.2 Other information:

Acute effects:

No information on this product.

Chronic effects:

No information on this product.

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SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

None known.

10.4 Conditions to avoid:

None known.

10.5 Incompatible materials:

No information available on this product.

10.6 Hazardous decomposition products:

No information available on this product.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Main routes of exposure:

No data available for occupational handling.

Acute toxicity: Data for hazardous substances

| Substance | Oral, LD50 | Skin, LD50 | Dermal, LD50 | Inhalation Dust/Mist, LC50 |
|------------------------------|-------------|---------------|---------------|----------------------------|
| Copper sulphate pentahydrate | 300 mg/kg | Not available | Not available | Not available |
| Zinc Sulphate | 1 260 mg/kg | Not available | Not available | Not available |

Other information

No other information.

Assessment Classification

Based on available data, the classification criteria according to ST/SG/AC.10/30/REV.10, both the Acute toxicity, Category 5, oral hazard is applicable to this mixture.

Hazard classification

| Classification | Hazard Description |
|-------------------------------|--|
| Acute toxicity | Based on available data and classification criteria of ST/SG/AC.10/30/REV.10, the mixture can be classified as Acute toxicity, Category 5, Oral. |
| Skin corrosion/irritation | Based on available data, the classification criteria are not met. |
| Serious eye damage/irritation | Based on available data and classification criteria of ST/SG/AC.10/30/REV.10, the mixture can be classified as serious eye damage, Category 1. |
| Respiratory sensitization | Based on available data, the classification criteria are not met. |
| Skin sensitization | Based on available data, the classification criteria are not met. |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met. |

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| | |
|--------------------------|---|
| Carcinogenicity | Based on available data, the classification criteria are not met. |
| Reproductive toxicity | Based on available data, the classification criteria are not met. |
| STOT – single exposure | Based on available data, the classification criteria are not met. |
| STOT – repeated exposure | Based on available data and classification criteria of ST/SG/AC.10/30/REV.10, the mixture can be classified as toxic to specific target organs, Category 2. |
| Aspiration hazard | Based on available data, the classification criteria are not met. |

Other information:

None known.

SECTION 12: Ecological information

12.1 Toxicity:

Aquatic toxicity

Acute (short-term) toxicity to fish

| Raw material | Effect dose/ - concentration | Value | Test duration | Species |
|------------------------------|------------------------------|-----------|---------------|---|
| Copper Sulphate Pentahydrate | LC50 | 0.31 mg/l | 96 hours | Rainbow Trout, <i>Oncorhynchus mykiss</i> |
| Zinc Sulphate | LC50 | 1.36 mg/l | 96 hours | Rainbow Trout, <i>Oncorhynchus mykiss</i> |

Acute (short-term) toxicity to crustacea

| Raw material | Effect dose/ - concentration | Value | Test duration | Species |
|------------------------------|------------------------------|-----------|---------------|---------------|
| Copper Sulphate Pentahydrate | LC50 | 0.07 mg/l | 48 hours | Daphnia magna |
| Zinc Sulphate | LC50 | 0.79 mg/l | 48 hours | Daphnia magna |

Assessment / Classification

Based on the data available and the classification criteria of ST/SG/AC.10/30/REV.10, both the acute and chronic Category 2 hazards are applicable to this mixture.

12.2 Persistence and degradability

Not classifiable due to data lacking.

12.3 Bio accumulative potential

Not classifiable due to data lacking.

12.4 Mobility in soil

Not classifiable due to data lacking.

12.5 Results of Persistent, Bioaccumulating and Toxic and very Persistent and very Bioaccumulating assessment

Not classifiable due to data lacking.

12.6 Other adverse effects:

None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

If there is no way of recycling it must be disposed of in compliance with the respective national and local regulations.

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Collection of small amounts of product:

Do not put waste into sink or dust bin. Collect in container for toxic, inorganic residues and heavy metals salts and their solution. Adjust product to a pH of 6 – 8. Collection vessels must be clearly labelled with a systematic description of their contents. Store the vessels in a well-ventilated location. Entrust them to the appropriate authorities for disposal.

SECTION 14: Transport information

UN Number: Not applicable

UN Proper shipping name: Not applicable

Transport hazard class: Not regulated as a dangerous good.

Transport in bulk according to IMO instrument: Not available.

DOT: Not regulated as a hazardous material by DOT.

IATA: Not regulated as a dangerous good.

IMDG: Not regulated as a dangerous good.

Special precautions for user

None known.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS: ST/SG/AC.10/30/REV.10

15.2 Chemical Safety Assessment

No chemical safety assessment was completed for this product.

SECTION 16: Other information

16.1 Indication of changes

First version.

16.2 Abbreviations and acronyms

| | |
|------|--|
| ATE | Acute Toxicity Estimate |
| CAS | Chemical Abstracts Service (division of the American Chemical Society) |
| DOT | Department of transportation |
| EC50 | Half maximal effective concentration |
| GHS | Globally Harmonised System |
| IATA | International Airport Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Lethal concentration required to kill 50% of the population |
| STOT | Specific target organ toxicity |

16.3 Key literature references and sources for data

GESTIS Substance database [WWW Document], n.d. URL <https://gestis-database.dguv.de/> (accessed 11.7.24).

HAZARD COMMUNICATION: Hazard Classification Guidance for Manufacturers, Importers, and Employers, n.d.

16.4 Classification for mixtures and used evaluation method according to ST/SG/AC.10/30/REV.10

Classification based on calculation or concentration thresholds. See SECTION 2.1 (classification).

16.5 Relevant R-, H- and EUH-phrases (number and full text)

None

16.6 Training advice

Not relevant.

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16.7 Further information

This SDS summarizes to the best of our knowledge at the date of issue, the chemical health and safety hazards of the product and general guidance on how to safely handle the material in the workplace.