Safety Data Sheet (SDS) ZIN SL/01

According to UN GHS 9th Ed
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Version: 1.3

SECTION 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING

Product identifier:

Identification as on the label/Trade name: ZINCMAX®

Additional information: Product code ZIN SL/01

Relevant identification uses of the substance and uses advised against:

Identified uses: Plant fertilizer for foliar application.

Uses advised against: Use only as directed.

Details of the supplier of the Safety Data Sheet:

AECI Limited
14 Field Road, LILIANTON

Emergency telephone numbers:

Griffon Poison information centre: 082 446 8946
Poisons Information Helpline: 0861 555 777
AECI Limited: (011) 823 8000 (o/h) Spill Tech: 086 100 0366 (a/h)

SECTION 2. HAZARD IDENTIFICATION

Classification of the substances or mixture

The mixture is classified according to

SANS 10234:2019 and the South African Regulations for Hazardous Chemical Agents – 2021	
Hazard classes/Hazard categories	**Hazard statement**
Skin corrosion/irritation (Category 2)	H315
Eye damage/irritation (Category 2)	H319

For full text of H statements see section 16

The most important adverse effects

The most important adverse physiochemical effects: None.

The most important adverse human health effects: The product has a low acute dermal and inhalation toxicity. The product is a skin and eye irritant.

Label elements

Hazard pictograms:

Signal Word: Warning.

Hazard Statements: H315 Causes skin irritation. H319 Causes serious eye irritation.

Precautionary Statements:

Prevention – P280 Wear protective gloves, protective clothing, eye protection and face protection. P264 + P265 Wash hands and face thoroughly after handling. Do not touch eyes.

Response – P302 + P352 IF ON SKIN: Wash with plenty of water. P332 + P317 If skin irritation occurs, get medical help. P337 + P 317 If eye irritation persists, get medical help. P362 + P364 Take off contaminated clothing and wash it before re-use. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Special labelling of certain mixtures: None.

Other hazards: None

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

Ingredients: Hazardous**.**

Substance name (IUPAC)	CAS –No. EC-No.	Concentration % By weight	Classification
Saccharic Acid (SA)/Glucaric Acid	87-73-0 201-768-1	<10%	Flammable Solid (Category 1) H228. Serious Eye Damage/Irritation (Category 1) H318. Skin Corrosion/Irritation (Category 1) H314.
Boric Acid	10043-35-3 233-139-2	1-3%	None as <5.5 % cut-off for Reproductive Toxicity (Category 1B) H360 FD.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4. FIRST AID MEASURES

Description of first aid measures:

In case of inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Do NOT give mouth-to-mouth resuscitation if victim ingested or inhaled the substance. Keep person at rest and warm. Treat symptomatically and supportively as and when required. Obtain medical advice if necessary.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation persist.
In case of eye contact: Check for and remove any contact lenses. In case of contact, hold eyelids apart and immediately flush eyes with plenty of water for at least 15 minutes. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Cold water may be used. Obtain medical attention.
In case of ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If conscious, rinse mouth thoroughly with water. Loosen tight clothing such as a collar, tie, belt or waistband. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Refer for medical attention without delay.

Most important symptoms and effects, both acute and delayed:

Inhalation: Prolonged exposure may cause respiratory irritation.
Ingestion: May be harmful if swallowed.
Skin contact: Cause skin irritations.
Eye contact: Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed:

There is no specific antidote. Treat symptomatically and supportively.

SECTION 5. FIRE -FIGHTING MEASURE

Extinguisher media:

Suitable extinguisher media: Use foam, dry chemical powder or carbon dioxide.
SMALL FIRE: Extinguish small fires with carbon dioxide, dry powder, or alcohol-resistant foam.
LARGE FIRE: Water spray can be used for larger fires or cooling of unaffected stock but avoid the accumulation of polluted run-off from the site
Unsuitable extinguishing media: Do not use high volume water jet due to contamination risk.

Special hazards arising from the mixture:

Nature of decomposition products not known for the product.

Advice for fire-fighters:

Stay at a maximum distance and avoid inhaling hazardous vapours. Keep container cool by spraying with water.
Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Be sure to use an approved/certified respirator or equivalent.
Act in accordance with the site's Internal Emergency Plan and the Workplace Specific Procedures for actions to be taken after an accident or other emergencies.

SECTION 6. ACCIDENTAL RELEASE

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Avoid contact with skin, eyes, and clothing.
For emergency responders: Do not breathe in fumes/vapour and avoid contact of the spilt material with eyes, skin or clothes. Wear appropriate protective clothing recommended in Section 8 of the SDS. Evacuate personnel to a safe area

when necessary. Ventilate the area of the spill or leak, especially when in confined areas. Isolate the spill area and limit the access to emergency responders only. Do not touch or walk through spilled material as it could be slippery when spilt. Contain spills if it can be done without risk and clean-up immediately.

Environmental precautions:

Prevent spillage or further leakage if safe to do so. Do not allow the spilt product to enter water courses and drains and avoid contact with soil. Do not allow the spilt product to spread to other areas - keep the spilt material contained and isolated. Report spills and releases as required to appropriate authorities if the spilt product has caused environmental pollution (sewers, water ways, soil or air).

Methods for containment and cleaning up:

For small spills Sweep up with inert absorbent material. Place into a labelled waste container with a shovel and cover for subsequent disposal. Dispose of collected spilt material as hazardous waste. Clean the contaminated surface with water to remove any residues of the spilt product. Keep the wash water out of drains, sewers and waterways.
For large spills. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with suitable absorbent material e.g. spill pillows, commercial absorbent, vermiculite, or absorbent pads/rolls/scatter, and place in labelled container for disposal according to local regulations.

Reference to other sections:

See section 1 for emergency contact information.
See section 7 for information on safe handling.
See section 8 for information on personal protection equipment.
See section 13 for information on disposal.

Additional information:

None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

Always provide good ventilation in the work area. Do not breathe vapours or mist. Wear protective clothing and equipment during handling as described in Section 8 of the SDS. Wash the hands and face thoroughly with soap after handling. Keep containers closed when not in use. Do not permit smoking in use or storage areas. Locate emergency showers and eye-rinsing facility near the work/handling area. Remove contaminated clothing immediately if the product gets inside. Contaminated work clothing should not be allowed out of the workplace. Work clothes should be separately laundered. Launder contaminated clothing before re-use. Keep unprotected persons away from the area where the product is being applied.
Protective measures: Observe directions on label and instructions for use.
Advice on general occupational hygiene: Do not eat drink or smoke when handling this product.
Regular cleaning of work area and work clothing is recommended. Maintain good normal industrial hygiene and housekeeping practices in areas where the product is used/handled.

Conditions for safe storage, including incompatibilities:

Store product in a segregated and secured area below 35°C. The entrance to storage facilities should be granted only to appropriately trained personnel. Keep containers tightly closed when not in use. Store only in properly labelled containers. The product is stable if stored well ventilated, out of direct sunlight, cool and free of moisture and high

humidity. Keep out of reach of children, uninformed persons and animals. Protect containers from physical damage and check the condition of storage containers periodically (e.g. for leaks). Avoid cross contamination with other agricultural products. It is recommended to have appropriate spill control kits equipped with absorbent material in close proximity to storage areas (see Section 6). Store in accordance with national and local regulations.

Specific end uses:

Use as directed. Use original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Occupational exposure limits (OEL):

Although the ingredient with an OEL-STEL/C does not cause the GHS classification of the product, it could be hazardous to health.

Component	Type	Control Parameter	Update	Basis
Zinc Oxide	OEL- 8h TWA	4mg/m^3 (Respirable fraction)	2021	South African RELs*
	OEL-STEL/C	20mg/m^3 (Respirable fraction)		

*REL:	Recommended Exposure Limit.
OEL-eight hour TWA:	Occupational Exposure Limit- Time Weighted Average. Calculated over an eight-hour working day, for a five-day working week.
OEL-STEL/C:	Occupational Exposure Limit – short Term Exposure Limit /Ceiling Limit. Peak airborne concentration determined over the shortest analytically practicable period of time, which does not exceed 15 minutes.

Biological exposure indices (BEI): None.

Additional exposure limits under the conditions of use: None.

Exposure control:

Appropriate engineering controls: Provide general or adequate local exhaust ventilation to maintain airborne concentrations as low as possible. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location and are easily accessible. Handle the product in accordance with good industrial hygiene and safety practice. Keep the product away from food, drink and animal feeding stuffs.

Eye/face protection: Safety eyewear compliant with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes and mists. Due to the product being irritating to eyes and skin, chemical protective goggles with full seal and a face shield are recommended.

Hand protection: Use chemical resistant gloves. Select skin and hand protection based on the task being performed and the risks involved with the task. Elbow length impervious chemical resistant gloves recommended for hand protection (e.g. Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride etc.). Consider the glove penetration time - information on glove penetration time is available from the manufacturer of the glove. The gloves should be replaced immediately in case of damage or signs of wear. It is recommended to use preventative skin protection (skin cream). Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.

Body protection: Appropriate impervious clothing e.g. coveralls, aprons, shoes and socks are recommended to prevent skin contact and contamination of personal clothing. Overalls must be buttoned to the neck and sleeves worn over the gloves.

Respiratory protection: Respiratory protection is required when ventilation is inadequate, or discomfort is experienced; use an approved air-purifying respirator. Respiratory protection should be worn where risk assessments indicate there is a potential to exceed the exposure limit requirements or guidelines.

Environmental exposure controls: Prevent product from entry into sewers and water courses.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (form): Liquid.

Colour: Brown.

Odour: No information available.

Odour threshold: No information available.

pH (at concentration): 5-8 (100%)

Melting point/range (°C): No information available.

Boiling point/range (°C): No information available.

Flash point (°C): No information.

Evaporation rate: No information available.

Flammability (solid, gas): No information available

Ignition temperature (°C): No information available.

Upper/lower flammability/explosive limits: No information available.

Vapour pressure (20°C): No information available.

Vapour density: No information available.

Density: 1.28-1.32 g/cm^3

Water solubility (g/l) at 20°C: Soluble in water.

n-Octanol/Water partition coefficient: Soluble.

Auto-ignition temperature: No information available.

Decomposition temperature: No information available.

Viscosity, dynamic (mPa s): No information available.

Physical hazards:

Explosive properties: Not explosive.

Other information:

Fat solubility (solvent-oil to be specified): No information available.

Bulk density: No information available.

Dissociation constant in water (p Ka): No information available.

Oxidation-reduction potential: No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity:

The product is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Chemical stability:

Stable under normal storage conditions for 2 years.

Possibility of hazardous reactions:

No information available.

Conditions to avoid:

Avoid mist/vapour formation and storage without ventilation. Avoid excessive heat and moisture conditions during storage.

Incompatible materials:
No information available.

Hazardous decomposition products:
No information available.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution:
Non-human toxicological data: No Information available.

Information on likely routes of exposure:
The main routes of exposure to the product will be dermal and inhalation although ocular exposure is also possible.

Information on toxicological effects:
Acute toxicity: The product is of low acute toxicity.

Chronic toxicity: No information available.

Skin corrosion/Irritation: Based on available data, the classification criteria are met for skin irritation.

Serious eye damage/irritation: Based on available data, the classification criteria are met for serious eye irritation.

Respiratory or 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.

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, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity:
This product is of low aquatic toxicity.

Persistence and degradability:
The product is degradable.

Bioaccumulative potential:
Low potential for bioaccumulation.

Mobility in soil

Very soluble in water and mobile in soil.

Other adverse effects:

No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Treat as hazardous waste and do not dispose of the product as general waste. Dispose product related waste and packaging in accordance with all local, provincial and national regulations e.g. the Waste Classification and Management Regulations (GN 634 of 2013), R634 Waste Classification & Management Regulations, R635 National Norms & Standards for the Assessment of Waste for Landfill Disposal and R636 National Norms & Standards for Disposal of Waste to Landfill. Prevent the contamination of water, food, or feed by storage or disposal of the waste. Do not use empty containers for any other purpose. Special help is available for the disposal of Agricultural Chemicals. The product label will supply general advice regarding disposal of small quantities, and how to cleanse containers. Avoid and minimize the generation of waste.

Product/ packaging disposal:

Treat contaminated packaging as hazardous waste as dispose of as required by the legislation. Do not reuse or refill containers. Triple rinse container (or equivalent) promptly after emptying and offer for recycling - if an available option. Recondition if appropriate, or puncture and dispose of in a hazardous waste landfill, or by other procedures approved by the local authorities.

SECTION 14. TRANSPORT INFORMATION

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN-Number	Not required	Not required	Not required
UN Proper shipping name:	Not required	Not required	Not required
Transport hazard class:	Not required	Not required	Not required
Transport hazard class pictogram:	Not required	Not required	Not required
Transport subsidiary hazard class pictogram:	Not required	Not required	Not required
Packaging group:	Not required	Not required	Not required
Marine pollutant:	Not required	Not required	Not required
Special precautions for user:	Not required	Not required	Not required
Transport in bulk according to MARPOL 73/78 Annex II and the IBC code	Not required	Not required	Not required

Dangerous goods outer packaging GHS pictogram requirements:

Inland waterways: Not required.
Emergency response information: Not required.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:

Relevant information regarding authorization: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021.UN Recommendations on the Transport of Dangerous Goods Model Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 8, 2019.

ACGIH: American Conference of Governmental Industrial Hygienists (ACGIH)

Relevant information regarding restrictions: None.

EU regulations: Regulation EC 1272/2008 [EU-GHS/CLP]

Other National regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996).

SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes. National Environmental Management: Waste Act 59 of 2008.

Chemical Safety Assessment carried out? No

SECTION 16. OTHER INFORMATION

Indication of changes:

All sections.

Relevant classification and H statements (number and full text):

Serious Eye Damage/Irritation (Category 1).
Serious Eye Damage/Irritation (Category 2).
Skin Corrosion/Irritation (Category 1).
Skin Corrosion/Irritation (Category 2).
Flammable Solid (Category 1).
Reproductive Toxicity (Category 1B).

H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H318: Causes serious eye damage. H319 Causes serious eye irritation. H228 Flammable solid. H361: Suspected of damaging to fertility or the unborn child.

Training instructions:

Use as indicated on the label, special training may be required for application.

Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Key Abbreviations:

AND	European Provisions concerning the International Carraige od Dangerous Goods by inland Waterways
ADR	The European Agreement concerning the International Carraige of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS Number	Chemical Abstracts Service Number

COD	Chemical Oxygen Demand
EC50	Half Maximal Effective Concentration
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IMDG	International Maritime Dangerous Goods
LD50	Lethal Dose 50
LC50	Lethal Concentration 50
RID	The Regulations concerning the International Carraige of Dangerous Goods by Rail
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
TWA	Time Weighted Average
UN	United Nations

Notice to readers:

Employers should use this information only as a supplement to other information gathered by them and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.

This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.