SAFETY DATA SHEET

ZINC SULPHATE MONOHYDRATE | REVISION 3, DATE JUNE 2026

1. IDENTIFICATION

Product Name	Zinc Sulphate Monohydrate
Other Names	Zinc Sulfate Monohydrate; $ZnSO_4 \cdot H_2O$; Sulfuric Acid, Zinc Salt (1:1), Monohydrate; Zinc Sulphate 1-Hydrate; Dried Zinc Sulphate
Uses	Water-soluble zinc fertiliser and micronutrient source. Used for correction and prevention of zinc deficiency in crops, via soil application, fertigation or foliar spray. Also used industrially in animal feed supplements, wood preservation and other applications.
Product Type	Water-Soluble Micronutrient Fertiliser
Chemical Family	Inorganic zinc salt (sulfate)
Chemical Formula	$ZnSO_4 \cdot H_2O$
Chemical Name	Zinc Sulfate Monohydrate
Product Description	Zinc Sulphate Monohydrate – high-purity, water-soluble zinc and sulfur fertiliser

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Green Pick Australia	6 Fernhill Lane Bayswater North VIC 3153 Australia	+61-426-571-061
Green Pick Iran	50 Khavaran Hwy, Industrial City Ivanaki, Taavoni 7 Tehran, Iran	+98-912-476-3248

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Australia – Westmead NSW	1800-251525 / 131126
Chemcall	Australia	1800-127406 / +64-4-9179888
Chemcall	New Zealand	0800-243622 / +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 / +1-703-527-3887

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust)	Schedule 6 (SUSMP)

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Globally Harmonised System

Hazard Classification	Acute Toxicity (Oral), Category 4; Serious Eye Damage, Category 1; Hazardous to the Aquatic Environment – Acute, Category 1; Hazardous to the Aquatic Environment – Chronic, Category 1
Signal Word	Danger
Hazard Statements	H302 – Harmful if swallowed H318 – Causes serious eye damage H400 – Very toxic to aquatic life H410 – Very toxic to aquatic life with long lasting effects
Precautionary Statements	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 gloves/protective clothing/eye protection/face protection P301+P312 – IF SWALLOWED: Call a POISON CENTRE 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 P310 – Immediately call a POISON CENTRE or doctor/physician P330 – Rinse mouth P391 – Collect spillage P501 – Dispose of contents/container in accordance with local/regional/national regulations
Hazard Pictograms	Corrosion (serious eye damage) and Environment (aquatic hazard)

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	Dangerous Goods, Class 9 (Miscellaneous/Environmentally Hazardous Substance) – see SECTION 14 for full details and applicable packaging exemptions.

Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	Classified as hazardous according to the criteria of Safe Work Australia under Model WHS Regulations (see classification above).

Zinc sulfate monohydrate is harmful if swallowed, causes serious eye damage, and is very toxic to aquatic life with long lasting effects. Avoid ingestion, eye contact and release to the environment. Refer to Sections 4, 8 and 12 for further detail.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Zinc Sulfate Monohydrate	$ZnSO_4 \cdot H_2O$	7446-19-7	>= 98 %
Lead, Cadmium, Arsenic, Mercury (combined, as impurities)	Pb, Cd, As, Hg	Mixture	≤ 31 ppm (combined)
Moisture / insoluble residues	—	—	Balance

Note: Zinc sulfate monohydrate is a single, well-defined inorganic compound (CAS 7446-19-7). Trace heavy metal impurities (Pb, Cd, As, Hg) are controlled to the combined limit shown in Section 9, consistent with typical fertiliser-grade and feed-grade purity requirements.

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

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Swallowed	IF SWALLOWED: Rinse mouth thoroughly with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a Poison Centre or doctor/physician immediately if you feel unwell.
Inhaled	IF INHALED: Remove victim to fresh air immediately and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. Get medical advice/attention if symptoms occur or persist.
Eye	IF IN EYES: Immediately and continuously flush eyes with running water, holding eyelids open, for at least 15 minutes. Remove contact lenses if present and easy to do. Immediately call a Poison Centre or doctor/physician, as this product causes serious eye damage.
Skin	IF ON SKIN: Wash immediately with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs or persists, get medical advice/attention.
Most Important Symptoms and Effects	Causes serious eye damage. Harmful if swallowed – may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause irritation to skin and respiratory tract due to dust.
Advice to Doctor	Treat symptomatically. Show this Safety Data Sheet to the treating doctor.
Medical Conditions Aggravated by Exposure	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after the fire is out. Contain fire-control water for later disposal – do not allow runoff into waterways.
Flammability Conditions	Non-combustible; material may char but will not ignite readily.
Extinguishing Media	Small fire: dry chemical, CO2, water spray or foam. Large fire: water spray, fog or foam, appropriate to the surrounding fire.
Fire and Explosion Hazard	Not classified as explosive or oxidising. Containers may rupture/explode when heated due to internal pressure build-up.
Hazardous Products of Combustion	Fire or strong heating may produce irritating, poisonous and/or corrosive fumes, including oxides of sulfur (SOx) and zinc oxide fume.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water – runoff is very toxic to aquatic life and may cause serious environmental pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA) and full structural firefighters' protective clothing.
Flash Point	Not applicable (solid, non-combustible)
Lower Explosion Limit	Not applicable
Upper Explosion Limit	Not applicable
Auto Ignition Temperature	Not applicable
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation, especially in confined areas. Avoid generating dust; do not inhale dust. Avoid contact with eyes, skin and clothing. Do NOT touch or walk through spilled material.
Personal Precautionary Measures	Do not attempt to take action without suitable protective equipment (see SECTION 8). Use clean, non-sparking tools to collect material.
Environmental Precautionary Measures	Very toxic to aquatic life with long lasting effects – prevent any release to drains, waterways or soil. Prevent contamination of soil and water. Notify authorities if the product enters waterways or sewers.
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Prevent entry into waterways, drains, sewers, basements or confined areas.
Clean Up Procedures	Sweep up (avoiding dust generation) and place into a suitable, clearly labelled, loosely-covered container for disposal (see SECTION 13).
Decontamination	Flush contaminated area with water only after material has been recovered; avoid uncontrolled discharge to the environment.
Evacuation Criteria	Isolate spill or leak area. Keep unauthorised and unprotected personnel away.

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7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Avoid generating dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Always wash hands before eating, drinking or smoking.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Containers which are opened should be properly resealed and kept upright to prevent leakage. Protect from moisture. Store away from incompatible materials (see SECTION 10) and away from foodstuffs.
Container	Keep in the original container.
Incompatible Materials	Water reactive metals, lead, calcium and strontium salts, borax, alkali carbonates and hydroxides, silver salts, strong oxidising agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific occupational exposure standard is established for zinc sulfate itself in most jurisdictions; general standards for zinc compounds/particulates not otherwise classified may be applied as a guide where relevant.
Engineering Measures	A system of local and/or general exhaust ventilation is recommended to keep employee exposure to dust as low as possible.
Respiratory Protection	In case of inadequate ventilation, wear respiratory protection. Recommended: dust mask/particulate respirator (refer to AS/NZS 1715 & 1716).
Eye/Face Protection	Wear chemical goggles or a full face shield to avoid eye contact, given this product causes serious eye damage.
Hand Protection	Wear chemically resistant protective gloves.
Skin/Body Protection	Wear appropriate personal protective clothing to avoid skin contact. Recommended: overalls or apron, safety shoes.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling and before eating, drinking or using the toilet. Take off contaminated clothing and wash it before reuse.
Biological Limits	No information available.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Fine powder
Colour	White
Odour	Odourless
pH (1% solution in water)	4.5 – 6.5 (mildly acidic, consistent with published reference data for this substance)
Water Solubility	Highly soluble in water: approximately 965 g/L at 20 °C. Insoluble in alcohol.
Zinc (Zn)	≥ 35%
Sulphur (S)	≥ 17%
Purity	≥ 98%
Heavy Metals (Pb, Cd, As, Hg combined)	≤ 31 ppm
Melting Point	Loses water of crystallisation on heating from approximately 100 °C; anhydrous salt decomposes at higher temperature rather than exhibiting a true melting point
Boiling Point	Not applicable (solid; decomposes before boiling)
Flash Point	Not applicable
Decomposition Temperature	> 600 °C (releases sulfur oxides and zinc oxide fume)
Vapour Pressure	Not applicable
Relative Vapour Density	Not applicable
Density	3.8 g/cm³
Bulk Density	1,000 – 1,200 kg/m³ (typical, powder form)
Molecular Weight	179.47 g/mol
Particle Size	Fine powder
Partition Coefficient (n-octanol/water)	Not applicable (inorganic salt, fully dissociates in water)
Evaporation Rate	Not applicable
Viscosity	Not applicable (solid)
Oxidising Properties	Not classified as oxidising
Explosive Properties	Product is not explosive.

10. STABILITY AND REACTIVITY

General Information	No dangerous reactions known under normal conditions of use.
Chemical Stability	Stable under normal conditions of storage and handling when kept dry.
Conditions to Avoid	Avoid generating dust. Avoid exposure to moisture (may cause caking). Avoid strong heating.
Materials to Avoid	Water-reactive metals, lead, calcium and strontium salts, borax, alkali carbonates and hydroxides, silver salts, strong oxidising agents.
Hazardous Decomposition Products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. At high temperature, decomposition may release sulfur oxides (SOx) and zinc oxide fume.
Hazardous Polymerisation	Will not occur.

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11. TOXICOLOGICAL INFORMATION

General Information	Acute toxicity (oral): Category 4 (Harmful if swallowed). Acute toxicity (dermal): Not classified. Acute toxicity (inhalation): Not classified. Skin corrosion/irritation: Not classified – may cause mild irritation. Eye damage/irritation: Category 1 (Causes serious eye damage). Respiratory/skin sensitisation: Not classified; animal studies on zinc sulfate have not demonstrated significant sensitisation potential. Germ cell mutagenicity: Not classified. Carcinogenicity: Not classified – not listed by IARC, NTP or OSHA as a carcinogen. Reproductive toxicity: Not classified. STOT (single exposure): Not classified. STOT (repeated exposure): Not classified. Aspiration toxicity: Not classified.
Likely Routes of Exposure	Ingestion, inhalation of dust, and eye/skin contact.
Ingestion (Oral)	Acute toxicity: LD50, Rat: 1,000 – 2,000 mg/kg bw (zinc sulfate heptahydrate, OECD TG 423; comparable on an elemental zinc basis for the monohydrate). May cause severe irritation and burns of the mouth, throat and digestive system; symptoms may include vomiting, diarrhoea, abdominal pain and nausea.
Dermal	Not expected to be significantly absorbed through intact skin; not classified for acute dermal toxicity.
Inhalation	Inhalation of dust may cause irritation to the mucous membranes of the respiratory tract.
Chronic Effects	Zinc is an essential trace element, but excessive chronic intake of soluble zinc salts can interfere with copper metabolism and cause other systemic effects. Not expected under normal occupational handling of this product.
Carcinogen Category	None

Note: Zinc sulfate (both the monohydrate and heptahydrate forms) is a well-characterised, widely studied industrial, agricultural and pharmaceutical raw material. Toxicological figures shown are based on published literature and regulatory assessments for this substance.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Classified as very toxic to aquatic life with long lasting effects (H400/H410). Zinc ions are toxic to fish, invertebrates and algae at relatively low concentrations. Indicative published data for zinc sulfate/zinc ion: Acute LC50, Fish: in the range of 1 – 10 mg/L (as Zn); Acute EC50, Daphnia: in the range of 1 – 10 mg/L (as Zn); Chronic NOEC values are substantially lower. Refer to current ecotoxicological literature/ECHA data for precise values.
Persistence/Degradability	Not applicable in the conventional biodegradation sense – product is an inorganic salt that fully dissociates in water. Zinc does not degrade and persists in the environment.
Bioaccumulation Potential	Zinc can bioaccumulate in some aquatic organisms, though it is also an essential micronutrient regulated by many organisms' homeostatic mechanisms.
Mobility	Highly soluble and mobile in water; uncontrolled release should be strictly avoided given the aquatic hazard classification.
Environmental Fate	When used as directed as an agricultural micronutrient fertiliser at recommended application rates, the product is not expected to cause long-term adverse effects. Uncontrolled or excessive release, spillage or disposal to waterways must be avoided due to high aquatic toxicity.
Environmental Impact	Very toxic to aquatic life with long lasting effects – avoid release to the environment (see SECTION 6).

13. DISPOSAL CONSIDERATIONS

General Information	This material and its container must be disposed of as hazardous/controlled waste due to its aquatic toxicity classification. Collect and reclaim waste from residues/unused product(s) or dispose of in sealed containers at a licensed waste disposal site in accordance with local/regional/national regulations. Do NOT allow product to enter drains, waterways or soil.
Contaminated Packaging	Empty containers may retain product residue and hazard classification – do not reuse for other purposes. Dispose of contents/container in accordance with local/regional/national regulations at an approved waste handling site.

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14. TRANSPORT INFORMATION

Proper Shipping Name	Environmentally Hazardous Substance, Solid, N.O.S. (contains Zinc Sulfate)
UN Number	UN 3077
Class	9 (Miscellaneous Dangerous Goods / Environmentally Hazardous Substance)
Subsidiary Risk(s)	None
Pack Group	III
Hazchem Code	No Data Available
Marine Pollutant	Yes
Special Precautions	Applicable under ADG Code, ADR, IMDG Code and IATA DGR when packaged/transported in bulk quantities meeting the relevant environmentally hazardous substance thresholds. Small package exemptions (e.g. Special Provision 335/375, limited quantity provisions) may apply – confirm current packaging thresholds and exemptions with a qualified dangerous goods consultant prior to shipment. Ensure product is kept dry during transport and storage.
Comments	Classified as Dangerous Goods (Class 9, Environmentally Hazardous Substance) due to aquatic toxicity (H410). Confirm current packaging exemption thresholds for each transport mode and destination prior to shipment.

15. REGULATORY INFORMATION

Poisons Schedule (Aust)	Schedule 6 (SUSMP)
General Information	Product is manufactured for use as an agricultural micronutrient fertiliser. Users should confirm local fertiliser registration and dangerous goods/poisons scheduling requirements in the country of sale prior to distribution.

National/Regional Inventories

Inventory	Status
Australia (AICS)	Listed
New Zealand (NZIoC)	Listed
Europe (EINECS)	Listed – EC 231-793-3 (anhydrous); 616-096-8 (monohydrate)
USA (TSCA)	Listed
Canada (DSL)	Listed
China (IECSC)	Listed
Japan (ENCS)	Listed
Korea (KECI)	Listed
Iran (National Chemical Inventory)	Not Determined

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16. OTHER INFORMATION

≥	Greater Than or Equal To	≤	Less Than or Equal To
AICS	Australian Inventory of Chemical Substances	As	Arsenic
CAS	Chemical Abstracts Service (Registry Number)	Cd	Cadmium
EC	European Community (Number)	GHS	Globally Harmonised System of Classification and Labelling of Chemicals
Hg	Mercury	LD50	Lethal Dose, 50% – the amount of a material, given all at once, which causes the death of 50% of a group of test animals
LC50	Lethal Concentration, 50% – the concentration of a material in air/water which causes the death of 50% of a group of test animals	N/A	Not Applicable
NOEC	No Observed Effect Concentration	OECD	Organisation for Economic Co-operation and Development
Pb	Lead	ppm	Parts per Million
STOT	Specific Target Organ Toxicity	SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
UN	United Nations	$ZnSO_4 \cdot H_2O$	Zinc Sulfate Monohydrate

Revision	3
Revision Date	June 2026
Supersedes	Version 2, April 2026

This Safety Data Sheet has been prepared using published literature and regulatory reference data for zinc sulfate/zinc sulfate monohydrate (CAS 7446-19-7), a well-characterised, widely used industrial, agricultural and pharmaceutical chemical, together with the specifications provided by Green Pick Australia for this product. To the best of our knowledge the information contained herein is accurate as of the date of issue; it is provided without warranty, expressed or implied. It is the responsibility of the user to determine the suitability of this information for their particular use and to comply with all applicable local, national and international regulations, including transport and poisons scheduling requirements.

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