

SAFETY DATA SHEET



Zinc Sulphate Monohydrate

Section 1 IDENTIFICATION

CAS Number: 7446-19-7
Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S
 (zinc sulphate monohydrate)
UN Number: 3077
GHS chemical identifier: Zinc Sulphate Monohydrate

Product use : Animal health treatments and trace element source in fertilisers.

Supplier: Interchem Agencies Limited
 99 Diana Drive
 Wairau Valley
 Auckland 0627
 New Zealand
 Phone: +64 9 418 0097
 Email: compliance@interchem.co.nz

24 hour emergency contact phone: 0800 243 622 (0800 CHEMCALL)

International emergency phone: +64 4 917 9888

Section 2 HAZARD IDENTIFICATION

Hazardous Substance according to the criteria of GHS 7th Edition and the New Zealand Hazardous Substances and New Organisms (HSNO) legislation. Dangerous Good.

Hazard labelling (see Section 14 for UN labelling)

Signal word: **DANGER**



Hazard classification and statements

GHS

Serious eye damage – Category 1

Causes serious eye damage.

Acute toxicity: Oral - Category 4

Harmful if swallowed.

Specific target organ toxicity (repeated exposure) - Category 2

May cause damage to organs through prolonged or repeated oral exposure.

Aquatic toxicity (Acute & Chronic) – Category 1

Very toxic to aquatic life with long lasting effects.

Hazardous to soil environment

Harmful to the soil environment.

Hazardous to terrestrial vertebrates

Harmful to terrestrial vertebrates.

HSNO

8.3A

6.1D (oral)

6.9B

9.1A

9.2C

9.3C

Precautionary Statements

Prevention

Keep out of reach of children.

Read label before use.

Wear protective gloves, protective clothing, eye protection and face protection.

Wash hands and exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Do not breathe dust.

Response

If medical advice is needed, have product container or label at hand.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Collect spillage.

Disposal

Dispose of contents and container in accordance with relevant legislation.

See Section 13 of this SDS Document for more information.

Section 3 COMPOSITION / INFORMATION ON INGREDIENTS

Name	CAS number	%	Hazardous
Zinc Sulphate Monohydrate	7446-19-7	>90	Yes

Synonyms: ZnSO₄.H₂O; Zinc Sulfate; Global Zinc Sulphate Mono; Sulfuric acid, zinc salt, monohydrate.

Section 4 FIRST-AID MEASURES

In an emergency call an ambulance (111). If in doubt, call the NATIONAL POISONS CENTRE 0800 764766 or a doctor.

Causes burning pain and serious irritation to eyes. Inhalation of dusts can cause cough and difficulty breathing. Ingestion can lead to nausea and vomiting.

Ingestion

For advice, contact the National Poisons Centre (0800 764 766) or a doctor at once.

If swallowed do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

Observe the patient carefully.

Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.

Seek medical advice.

Eye

Wash out immediately with fresh running 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.

Seek medical attention immediately for assessment of the eye.

Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin

Remove contaminated clothing including footwear.

Flush skin and hair thoroughly with running water (and soap if available).

Seek medical attention in the event of prolonged irritation.

Inhalation

If dust is inhaled, remove from contaminated area.

Encourage patient to blow nose to ensure clear passage of breathing.

If breathing becomes difficult, call for medical attention and if available, administer oxygen.

If irritation or discomfort persists, seek medical attention.

Emergency shower and eyewash station required.

PPE required for first aiders: see Section 8.

Notes to physician

Treat symptomatically based on individual reactions of patient and judgement of doctor.

NOTE: For advice in an emergency, contact the National Poisons Centre (0800 764 766).

Section 5 FIRE-FIGHTING MEASURES

Extinguishing media

In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions: water, water spray, dry powder, foam, carbon dioxide (CO₂).

DO NOT use water jet, as it may spread the fire.

Fire fighting

Alert Fire Brigade and tell them location and nature of hazard.

Clear fire area of all non-emergency personnel.

Stay upwind. Eliminate ignition sources.

Wear breathing apparatus plus protective gloves.

Prevent spillage from entering drains or water courses.

Use firefighting procedures suitable for surrounding area.

DO NOT approach containers suspected to be hot.

Cool fire exposed containers with water spray from a protected location.

If safe to do so, remove containers from path of fire.

Equipment should be thoroughly decontaminated after use.

Fire/explosion hazard

Non-combustible solid.

Hazards from combustion products

Irritating and toxic gases of Sulphur oxides and zinc oxide fumes will be emitted in the event of a fire.

Personal protective equipment

Firefighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves).

Limit exposure duration to 1 BA set 30 mins.

Hazchem code

2Z

Section 6 ACCIDENTAL RELEASE MEASURES

Only fully trained personnel should be involved in handling chemicals.
Personal Protective Equipment advice is contained in Section 8 of the SDS.

Spill response

Environmental hazard - contain spillage. Moderate hazard.

For a large uncontained spill, alert Emergency Services and tell them location and nature of hazard.

Avoid generating dust. Increase ventilation. Move upwind.

Clean up all spills immediately. Stop leak if safe to do so.

Personnel involved in the clean-up should wear full protective clothing.

Prevent, by any means available, spillage from entering drains or water courses.

Sweep up and shovel or vacuum up. Transfer to plastic bags or other suitable chemical waste containers and label clearly. Seal tightly and arrange for appropriate disposal. See section 13 of the SDS.

Do NOT let product reach drains or waterways. If a significant amount does enter a waterway advise your local council authority and emergency services.

Wash spill area with plenty of water after removal of contaminant.

Emergency Response Planning Guidelines (AIHA)

No ERPGs have been set for this substance by the American Industrial Hygiene Association.

Protective Action Criteria (SCAPA)

Chemical (CAS Number)	PAC-1	PAC-2	PAC-3	Units
Zinc sulphate, anhydrous (7733-02-0)	9.9	30	180	mg/m ³

PAC-1: Mild, transient health effects.

PAC-2: Irreversible or other serious health effects that could impair the ability to take protective action.

PAC-3: Life-threatening health effects.

Section 7 HANDLING AND STORAGE

Only fully trained personnel should be involved in handling chemicals.
Personal Protective Equipment advice is contained in Section 8 of the SDS.

Procedure for handling

Avoid all personal contact, including inhalation.

Wear protective clothing, including chemical safety goggles to control exposure.

Use in a well-ventilated area.

Avoid contact with incompatible materials.

When handling, DO NOT eat, drink or smoke.

Keep packaging securely sealed when not in use.

Avoid physical damage to bags.

Always wash hands with soap and water after handling.

Work clothes should be laundered separately. Launder contaminated clothing before re-use.

Use good occupational work practice.

Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Suitable packaging

Original packaging. UN approved polyethylene or polypropylene bags.

Check all containers are clearly labelled and free from leaks.

Storage incompatibility

Store away from food product and animal feedstuffs.

Storage requirements

Store in original packaging.

Keep containers tightly sealed to prevent contamination.

Store in a cool, dry, well-ventilated area, out of direct sunlight.

Store away from incompatible materials and foodstuffs.

Section 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

Source	Material	Measurement	Limit
New Zealand WES 2025	total dust	time weighted average (TWA)	10 mg/m ³
New Zealand WES 2025	respirable dust	time weighted average (TWA)	3 mg/m ³

No exposure limits set by WorkSafe New Zealand or Safe Work Australia.

No exposure standard has been established for this product by WorkSafe New Zealand or Safe Work Australia. Exposure limit set by the German MAK for zinc and its organic compounds: 0.1 mg zinc /m³ (respirable fraction)/2mg zinc/m³ (inhalable fraction).

Engineering controls**Ventilation system**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Refer to the 'Local exhaust ventilation' guide found on the WorkSafe New Zealand website.

Personal Protection Equipment (PPE)**Respiratory protection**

An approved P2 or P3 particulate respirator should be worn when using this product in dusty conditions. See Australian/New Zealand Standard, AS/NZS 1715 and AS/NZS 16900.2.

If in doubt, seek expert occupational hygiene advice.

Eye/face protection

Use approved chemical safety goggles and a full-face shield where splashing is possible. Refer to Personal eye protection Part 1: Eye and face protectors for occupational applications, Australian/New Zealand Standard: AS/NZS 1337. Maintain eye wash fountain in work area.

Skin protection

Wear impervious protective clothing, including chemical resistant boots, rubber gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Refer to AS/NZS 2161 Occupational Protective Gloves; AS/NZS 2210 Safety footwear; AS/NZS 4501 Occupational protective clothing. Ensure there is ready access to an emergency shower.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance

White to off white powder or granules.

Physical properties

Zinc Sulphate monohydrate loses its water of hydration at ~238°C to Become Zinc Sulphate. Decomposition of Zinc Sulphate occurs above 680-740°C.

Property	Value
State:	Solid
Odour:	Odourless
Molecular Weight:	179.44
Melting Range (°C):	Not applicable (decomposes)
Boiling Range (°C):	Not available
Solubility in water (g/L, 20°C):	350
pH (5% solution, 20°C):	4.0-5.6
Relative density (g/cm ³ , 20°C):	3.28
Bulk Density (kg/m ³):	Not available
Volatile Component (%vol):	Not applicable
Relative Vapor Density(air=1):	Not applicable
Vapour Pressure (kPa):	Not available
Autoignition Temp (°C):	Not available
Flash Point (°C):	Not applicable
Lower Explosive Limit (%):	Not applicable
Upper Explosive Limit (%):	Not applicable
Decomposition Temp (°C):	>238 (loses water of hydration)
Viscosity:	Not applicable
Evaporation Rate:	Not applicable

Section 10 STABILITY AND REACTIVITY

Reactivity

No hazardous reactions expected under normal conditions of usage and storage.

Chemical stability

Product is stable under directed conditions of use, storage and temperature. The product is hygroscopic so can absorb moisture from the air over time.

Conditions to avoid

Avoid excessive heat, direct sunlight, moisture and temperature extremes. Keep containers dry and tightly closed to avoid moisture absorption and contamination.

Incompatible materials

Incompatible with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products

Thermal decomposition can lead to release of Sulphur oxides and zinc oxide fumes.

Hazardous reactions

Hazardous polymerization will not occur.

Section 11 TOXICOLOGICAL INFORMATION

Primary routes of exposure are by contact with skin, eyes and inhalation.

Acute health effects

Ingestion

The material is highly discomforting to the gastro-intestinal tract and may be harmful if swallowed.

Eye

This material is corrosive to eyes and may cause permanent damage.

Corneal injury may develop, with possible permanent impairment of vision if not promptly and adequately treated. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Skin

May cause transient irritation. A solution of the material in moisture on the skin, or perspiration, may increase irritant effects. Open cuts, abraded or irritated skin should not be exposed to this material. The material may aggravate a pre-existing skin condition.

Inhalation

The dust may be irritating to the upper respiratory tract. Symptoms include coughing, pain, and shortness of breath. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

Chronic

Repeated inhalation exposure can lead to metal fume fever, including impairment of the respiratory tract.

Chronic exposure to zinc by ingestion can lead to damage of the kidneys and liver.

Long term exposure can affect the stomach and intestine, the respiratory system, and the pancreas. It can cause issues with the uptake of the trace element Copper in the diet.

Toxicity and irritation data

Data for zinc sulphate, anhydrous:

Acute Oral Toxicity, Rat, LD₅₀: 1710 mg/kg

Acute Dermal Toxicity, Rabbit, LD₅₀: >2000 mg/kg

Acute Inhalation Toxicity, LC₅₀: No data available.

Eyes: Corrosive to eyes

Skin: Not classified as an irritant

Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.

Mutagenic effects: No data available.

Reproductive or developmental effects: No data available.

Aspiration hazard: No data available.

Specific target organ toxicity: Harmful to the blood and hematopoietic system.

Sensitisation (respiratory/contact): No data available.

Section 12 ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic in the aquatic environment with long lasting effects. Harmful to the soil environment and terrestrial vertebrates.

Ecotoxicity data

Classification based on similar substance: Zinc Sulphate anhydrous, CAS 7733-02-0

Fish (*Pimephales promelas*), 96h LC₅₀: 780µg/L

Fish (*Salmo trutta*), 116 day NOEC: 57 µg/L

Crustacean, (*Daphnia magna*), 43h EC₅₀: 259 µg/L

Crustacean, (*Haliotis rufescens*), 9 day NOEC: 19 µg/L

Algae, (*Chlorella sp.*) 48day EC₁₀: 350 µg/L

Acute Oral Toxicity, Rat, LD₅₀: 1710 mg/kg

Soil microorganisms, 21 day NOEC = 350mg/kg/21d soil dw

Persistence and degradability: No additional information available.

Mobility: No data available.

Bioaccumulation: No data available.

BOD5 and COD: Not available.

Products of Biodegradation: Not available.

DO NOT discharge into sewer or waterways.

Section 13 DISPOSAL CONSIDERATIONS

Disposal of Hazardous Substances is subject to the Resource Management Act and Council By-Laws in addition to HSNO requirements. Do not dispose with household rubbish.

Product

Recycle wherever possible. Special hazard may exist - specialist advice may be required. The product may be treated so that it is no longer hazardous by a means other than dilution. This includes incineration at an approved site, burial in a landfill or treatment at a sewage facility. Consult a specialist Waste Management Company or authorized landfill for disposal options. The substance must be disposed of in accordance with the EPA Hazardous Substances (Disposal) Notice 2017, available on the New Zealand EPA website.

Packaging

Recycle wherever possible. Special hazard may exist - specialist advice may be required. Packaging should not be incinerated in an uncontrolled manner. Packaging should be rendered incapable of containing any material. Puncture containers to prevent re-use and bury at an authorised landfill. Consult an approved Waste Management company for disposal options or dispose of at an approved waste disposal facility. Observe all label safeguards until containers are cleaned and destroyed. Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Section 14 TRANSPORT INFORMATION

DG Labelling:



UN Number:	3077
Proper Shipping Name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S.
Technical name:	zinc sulphate monohydrate
DG Class:	9
Subrisk:	n/a
Packing Group:	III
Label required:	MISCELLANEOUS, ENVIRONMENTALLY HAZARDOUS
Hazchem code:	2Z
Marine Pollutant:	Yes
EMS Number:	F-A, S-F

Section 15 REGULATORY INFORMATION

Regulations

Classified as hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms Act.

This product has been assigned to the following Group Standard by Interchem Agencies Limited: Additives, Process Chemicals and Raw Materials (Subsidiary Hazard) Group Standard 2020. EPA Approval number: HSR002503.

When used as an animal health treatment product, the product has been assigned to:
Active Ingredients for Use in the Manufacture of Agricultural Compounds Group Standard 2020
EPA Approval number: HSR100756
Location compliance certification regulations apply. Refer to clause 12.17 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Certified handler, tracking and location compliance certification regulations do not apply.

For full HSNO controls and Health and Safety at Work regulations for this substance refer to the New Zealand EPA's Approved Hazardous Substances with Controls website.

Zinc Sulphate Monohydrate (CAS 7446-19-7) is found in the following inventories:
NZIoC, AIIC, TSCA, DSL, EINECS

Section 16 OTHER INFORMATION

NEW ZEALAND POISON CENTRE 0800 POISON (0800 764 766)
NZ EMERGENCY SERVICES: 111

Abbreviations

ACGIH – American Conference of Governmental Industrial Hygienists.
ACVM – Agricultural Chemicals and Veterinary Medicines.
AIIC – Australian Inventory of Industrial Chemicals.
AOX – Absorbable organic halogens.
APF – Assigned Protection Factor.
BOD – Biochemical Oxygen Demand.
Ceiling – A concentration that should not be exceeded at any time during the working day.
China IECSC – Inventory of Existing Chemical Substances Produced or Imported in China.
COD – Chemical Oxygen Demand.
DSL – Canadian Domestic Substances List.
EINECS – European Inventory of Existing Commercial Chemical Substances.
ENCS – Japanese Existing and New Chemical substances.
ERPG – Emergency Response Planning Guidelines.
GHS – Globally Harmonized System of Classification and Labelling of Chemicals.
IARC – International Agency for Research on Cancer.
Kow - octanol/water partition coefficient
LOEL – Lowest Observed Effect Level.
LD_{Lo} – Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).
NOEC – No Observed Effect Concentration.
NTP – National Toxicology Program.
NZ CCID – New Zealand Chemical Classification and Information Database.
NZIoC – New Zealand Inventory of Chemicals.
OECD HPV – The Organisation for Economic Co-operation and Development High Production Volume Chemicals.
PEL – Permissible exposure limit.
PPE – Personal Protective Equipment.
Prop 65 – California Proposition 65 List of Chemicals.
SCAPA – Subcommittee on Consequence Assessment and Protective Actions.
STEL – Short term exposure limit.
TOC – Total Organic Carbon.
TSCA – US Toxic Substances Control Act Existing Chemicals.
TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.
WES – Workplace Exposure Standards

Sources of key data used to compile the datasheet:

Manufacturers SDS

NZ EPA CCID

GESTIS Substance database

NICNAS review of Zinc Sulphate

Date of first issue: Prior to 2008.01**Date of Preparation/Review:** 2026.08.03**Amendments:** 5 yearly review.

DISCLAIMER: *The information contained in this safety data sheet was obtained from current and reliable sources. This data is supplied without warranty, expressed or implied, regarding its correctness and accuracy. It is the user's responsibility to determine safe conditions for use of this product and to assume liability for loss, injury, damage or expense resulting from improper use of this product.*

For the avoidance of doubt, this safety data sheet has been prepared for the purpose of providing safety information, not to give specific usage or regulatory advice. Nothing contained herein can or should be construed as advice on the suitability of the product for a particular purpose. It is the user's sole responsibility to determine whether the product meets the user's specific requirements and is fit for those purposes.

End of SDS