

1. IDENTIFICATION

Product Name Zinc sulphate, heptahydrate

Other Names No Data Available

Uses Fertiliser additive and animal health product.

Chemical Family No Data Available **Chemical Formula** ZnSO4.7H2O

Chemical Name Sulfuric acid, zinc salt (1:1), heptahydrate

Product Description No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

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

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+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

Globally Harmonised System

Corporate Office Sydney
Locked Bag 15 Minto NSW 2566 Australia
2 Swettenham Road Minto NSW 2566 Australia All Deliveries: 4 Holmes Road Minto NSW 2566 Australia

E-mail

Phone +61 2 9733 3000 +61 2 9733 3111 svdnev@redox.com www.redox.com 92 000 762 345

Adelaide Brisbane Melbourne Perth Sydney

Auckland Los Angeles Hawke's Bay Oakland Mexico London

Kuala Lumpur



Safety Data Sheet Zinc sulphate, heptahydrate Revision 4, Date 20 Apr 20

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of

Chemicals (GHS)

Hazard Categories Acute Toxicity (Oral) - Category 4

Serious Eye Damage/Irritation - Category 1

Acute Hazard To The Aquatic Environment - Category 1
Long-term Hazard To The Aquatic Environment - Category 1

Pictograms







Signal Word Danger

Hazard Statements H302 Harmful if swallowed.

H318 Causes serious eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements Prevention **P280** Wear eye protection/face protection.

P273 Avoid release to the environment.

P270 Do not eat, drink or smoke when using this product.

P264 Wash hands thoroughly after handling.

Response **P305 + P351 + P338**

P391

+ P310

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

CENTRE/doctor.
Collect spillage.

P330 Rinse mouth.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

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

Dangerous Goods Classification NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous

Goods by Road & Rail (ADG Code)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Disposal

HSNO Classifications Health **6.1D** Substances that are acutely toxic - Harmful

6.9B Substances that are harmful to human target organs or systems

8.3A Substances that are corrosive to ocular tissue

Environmental **9.1A** Substances that are very ecotoxic in the aquatic environment

Hazards

Hazards

3. COMPOSITION/INFORMATION ON INGREDIENTS

Inaredients

Chemical Entity	Formula	CAS Number	Proportion
Zinc sulphate, heptahydrate	ZnSO4.7H2O	7446-20-0	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth, then drink plenty of water. Do NOT induce vomiting, Call a Poison Centre or

doctor/physician for advice. Never give anything by mouth to an unconscious person.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally

lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15

minutes. Immediately call a Poison Centre or doctor/physician for advice.

Skin IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Flush skin and hair with running water

for at least 15 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes

before reuse

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory

symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing - Administer oxygen if

breathing is difficult.

Advice to Doctor Treat symptomatically. Keep victim calm and warm - Obtain immediate medical care. Ensure that attending medical

personnel are aware of the identity and nature of the product(s) involved, and take precautions to protect themselves.

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 water spray until well after fire is

Flammability Conditions Non-combustible; Material does not burn.

Extinguishing Media If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), water spray or foam for extinction.

Fire and Explosion Hazard Decomposes on heating, emitting toxic fumes,

Hazardous Products of

Combustion

Fire or heat may produce irritating, toxic and/or corrosive fumes, including Sulfur oxides, Zinc oxides.

Special Fire Fighting

Instructions

Contain runoff from fire control or dilution water - Runoff may pollute waterways.

Personal Protective Equipment Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform

may provide limited protection.

Flash Point No Data Available **Lower Explosion Limit** No Data Available No Data Available **Upper Explosion Limit Auto Ignition Temperature** No Data Available **Hazchem Code** No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure Ensure adequate ventilation. Do not touch or walk through spilled material - Slippery when spilt. Avoid generating

dust. Avoid breathing dust and contact with eyes, skin and clothing.

Clean Up Procedures Collect material (sweep up and shovel) and keep in suitable, properly labelled containers for disposal (see SECTION

13).

Containment Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Prevent dust cloud.

Decontamination No information available.

Spillages and decontamination runoff should be prevented from entering drains and watercourses. If contamination of

Environmental Precautionary

Measures

sewers or waterways has occurred advise local emergency services.

Evacuation Criteria

Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher

ground.

Personal Precautionary

Measures

Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure

adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as

required (see SECTION 8). Avoid release to the environment - Collect spillage (see SECTION 6).

Storage Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use - check

regularly for spills. Protect from moisture (hygroscopic). Store away from foodstuffs and incompatible materials (see

SECTION 10).

Container Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General No specific exposure standards are available for this product. For dusts from solid substances without specific

occupational exposure standards:

- Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust).

- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable dust).

Exposure Limits No Data Available

Biological Limits No information available.

Engineering Measures 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.

Personal Protection Equipment - Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust

mask/particulate filter respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles or

face shield and safety glasses.

- Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Nitrile rubber.

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended:

Overalls, safety shoes.

Special Hazards Precaustions

Work Hygienic Practices

No information available.

Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using

the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

Appearance Crystalline powder or granules

OdourOdourlessColourWhite

pH 4 - 6 (50 g/L @ 20 °C)

Vapour Pressure No Data Available

Relative Vapour Density No Data Available

Boiling Point >500 °C (Decomposes)

Melting Point 100 °C

Freezing Point No Data Available

Solubility Soluble in water

Specific Gravity 1.96 - 1.97

Flock Point

Flash Point

Auto Ignition Temp

No Data Available

Evaporation Rate

No Data Available

Bulk Density

No Data Available

Corrosion Rate

No Data Available

Decomposition Temperature

No Data Available

Density

No Data Available

No Data Available

No Data Available

Specific HeatNo Data AvailableMolecular WeightNo Data AvailableNet Propellant WeightNo Data AvailableOctanol Water CoefficientNo Data AvailableParticle SizeNo Data Available

Partition CoefficientNo Data AvailableSaturated Vapour ConcentrationNo Data AvailableVapour TemperatureNo Data AvailableViscosityNo Data AvailableVolatile PercentNo Data Available

Additional Characteristics

No information available.

Potential for Dust Explosion

No information available.

Fast or Intensely Burning
Characteristics

Flame Propagation or Burning Rate of Solid Materials

VOC Volume

No information available.

No Data Available

Non-Flammables That Could Contribute Unusual Hazards to a

No information available.

Properties That May Initiate or Contribute to Fire Intensity

Non-combustible; Material does not burn.

Reactions That Release Gases

Fire or heat may produce irritating, toxic and/or corrosive fumes, including Sulfur oxides, Zinc oxides.

or Vapours

Release of Invisible Flammable Vapours and Gases

No information available.

10. STABILITY AND REACTIVITY

General Information No information available.

Chemical Stability Stable under recommended storage conditions.

Conditions to Avoid Avoid generating dust. Protect from moisture (hygroscopic).

Materials to Avoid Incompatible/reactive with acids, strong oxidising agents.

Hazardous Decomposition

Products

Fire or heat may produce irritating, toxic and/or corrosive fumes, including Sulfur oxides, Zinc oxides.

Hazardous Polymerisation Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information - Acute toxicity: Harmful if swallowed; Ingestion can result in nausea, vomiting, diarrhoea and gastrointestinal irritation.

- Skin corrosion/irritation: Contact with skin may result in irritation. Prolonged skin contact can produce dermatitis.

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- Eye damage/irritation: Causes serious eye damage.
- Respiratory/skin sensitisation: Not a skin sensitiser.
- Germ cell mutagenicity: Not anticipated to be genotoxic; Weight of evidence indicates the chemical is not mutagenic to germ cells.
- Carcinogenicity: No information available.
- Reproductive toxicity: While fertility toxicity has been observed at very high doses, the levels at which this occurs are unlikely to result from industrial use.
- STOT (single exposure): Breathing in dust or fume may result in respiratory irritation. Severe overexposure may result in bronchitis or pneumonia, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, airway resistance, cardiovascular effects, pulmonary edema.
- STOT (repeated exposure): Not considered to cause serious damage to health from repeated exposure.

- Aspiration toxicity: No information available.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat: 1,260 mg/kg

Carcinogen Category None

12. ECOLOGICAL INFORMATION

EcotoxicityNo information available.Persistence/DegradabilityNo information available.MobilityNo information available.

Environmental FateVery toxic to aquatic life with long lasting effects - Avoid release to the environment.

Bioaccumulation Potential No information available.

Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations.

Special Precautions for Land Fill No information available.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name Zinc sulphate, heptahydrate

Class No Data Available
Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

UN Number No Data Available
Hazchem No Data Available
Pack Group No Data Available

Special Provision AU01

Comments Not regulated as DG when transported by road or rail in packagings that do not incorporate a receptacle

exceeding 500 kg(L) or IBCs.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate, heptahydrate)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3077

 Hazchem
 2Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate, heptahydrate)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3077

 Hazchem
 2Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (Timor-Leste)

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate, heptahydrate)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

EPG 47 Low To Moderate Hazard Substances

 UN Number
 3077

 Hazchem
 2Z

 Pack Group
 III

Special Provision No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate, heptahydrate)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

ERG 171 Substances (Low to Moderate Hazard)

 UN Number
 3077

 Hazchem
 2Z

 Pack Group
 III

Special Provision No Data Available

Sea Transport

IMDG Code

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate, heptahydrate)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

 UN Number
 3077

 Hazchem
 2Z

 Pack Group
 III

Special Provision No Data Available

EMS F-A, S-F **Marine Pollutant** Yes

Air Transport IATA DGR

Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc sulphate, heptahydrate)

Class 9 Miscellaneous Dangerous Goods and Articles

Subsidiary Risk(s) No Data Available

 UN Number
 3077

 Hazchem
 2Z

 Pack Group
 III

Special Provision No Data Available

National Transport Commission (Australia)

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

Dangerous Goods ClassificationNOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous

Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General InformationNo Data AvailablePoisons Schedule (Aust)Schedule 6

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR002503

National/Regional Inventories

Australia (AICS) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

Europe (EINECS) Not Determined

Europe (REACh) Not Determined

Japan (ENCS/METI) Not Determined

Korea (KECI) Not Determined

Malaysia (EHS Register) Not Determined

New Zealand (NZIoC) Listed

Philippines (PICCS) Not Determined

Switzerland (Giftliste 1) Not Determined

Switzerland (Inventory of Notified

Substances)

Not Determined

Taiwan (NCSR) Not Determined

USA (TSCA) Not Determined

16. OTHER INFORMATION

Related Product Codes ZISULF1001, ZISULF1005, ZISULP0300, ZISULP0301, ZISULP0600, ZISULP0601, ZISULP0602, ZISULP0603,

ZISULP0604, ZISULP0605, ZISULP0701, ZISULP0702, ZISULP0703, ZISULP0704, ZISULP0800, ZISULP1051, ZISULP1052, ZISULP1500, ZISULP1501, ZISULP1502, ZISULP1503, ZISULP1504, ZISULP1505, ZISULP1506, ZISULP1507, ZISULP1508, ZISULP1509, ZISULP1510, ZISULP1511, ZISULP1700, ZISULP1701, ZISULP1702, ZISULP1705, ZISULP1802, ZISULP1802, ZISULP1820, ZISULP1821, ZISULP1822, ZISULP1823, ZISULP1825, ZISULP1800, ZISULP2001, ZISULP2002, ZISULP2003, ZISULP2004, ZISULP2005, ZISULP2006, ZISULP2007, ZISULP2008, ZISULP2009, ZISULP2010, ZISULP2011, ZISULP2012, ZISULP2013, ZISULP2014, ZISULP2003, ZISULP2016, ZISULP2017, ZISULP2017, ZISULP2018, ZISULP2019, ZISULP2023, ZISULP

ZISULP2024, ZISULP2025, ZISULP2026, ZISULP2027, ZISULP2028, ZISULP2029, ZISULP2030, ZISULP2031, ZISULP2032, ZISULP2033, ZISULP2034, ZISULP2034, ZISULP2035, ZISULP2100, ZISULP2101, ZISULP2102, ZISULP2103, ZISULP2101, ZISULP2101, ZISULP2101, ZISULP2201, ZISULP2201, ZISULP2202, ZISULP2203, ZISULP2204, ZISULP2205,

ZISULP2306, ZISULP2300, ZISULP2301, ZISULP2302, ZISULP2303, ZISULP2304, ZISULP2305, ZISULP2306, ZISULP2400, ZISULP2601, ZISULP2900, ZISULP3100, ZISULP3101, ZISULP3300, ZISULP3301, ZISULP3302, ZISULP3303, ZISULP3400, ZISULP3700, ZISULP3701, ZISULP4400, ZISULP4401, ZISULP4402,

ZISULP4500, ZISULP4501, ZISULP4502, ZISULP4503, ZISULP4600, ZISULP4601, ZISULP4602, ZISULP4800, ZISULP5501, ZISULP5500, ZISULP5501, ZISULP5500, ZISULP5500, ZISULP6000, ZISULP6000, ZISULP6001, ZISULP6002,

ZISULP6003, ZISULP6004, ZISULP6005, ZISULP6006, ZISULP6017, ZISULP6010, ZISULP6011, ZISULP6012, ZISULP6015, ZISULP6020, ZISULP6400, ZISULP6600, ZISULP6601, ZISULP6602, ZISULP6620, ZISULP6800, ZISULP6810, ZISULP7000, ZISULP7001, ZISULP7002, ZISULP7003, ZISULP7004, ZISULP7005, ZISULP7010,

ZISULP7015, ZISULP7050, ZISULP7060, ZISULP7080, ZISULP7085, ZISULP7090, ZISULP7095, ZISULP7200, ZISULP7201, ZISULP7202, ZISULP8800, ZISULP8801, ZISULP8802, ZISULP8810, ZISULP8820, ZISULP8821,

ZISULP8830, ZISULP9000, ZISULP9001, ZISULP9002, ZISULP9100, ZISULP9200, ZISULP9201, ZISULP9300, ZISULP9301, ZISULP9400, ZISULP9401, ZISULP9600, ZISULP9601, ZISULP9602, ZISULP9603, ZISULP9604,

ZISULP9700, ZISULP9800, ZISULP9801, ZISULP9802, ZISULP9803, ZISULP9960

Revision

Revision Date20 Apr 2020Reason for IssueUpdated SDSKey/Legend< Less Than</th>

> Greater Than

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square Centimetres CO2 Carbon Dioxide

COD Chemical Oxygen Demand **deg C (°C)** Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

g Grams

g/cm³ Grams per Cubic Centimetre

g/I Grams per Litre

HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other.

inHg Inch of Mercury
inH2O Inch of Water

K Kelvin **kg** Kilogram

kg/m³ Kilograms per Cubic Metre

Ib Pound

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of

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50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

Itr or L Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH2O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Heath and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight