

1. IDENTIFICATION

Product Name Ferrous sulphate, monohydrate

Other Names Iron sulfate, monohydrate

Uses Colcothar; Deodorizer; Soil conditioner; Forage; Fertilizer.

Chemical Family No Data Available **Chemical Formula** FeSO4.H2O

Chemical Name Sulfuric acid, iron(2+) salt (1:1), monohydrate

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) Not Scheduled

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 Kuala Lumpur Los Angeles Hawke's Bay Oakland Mexico London



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

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Irritation - Category 2A

Acute Hazard To The Aquatic Environment - Category 2

Pictograms



Signal Word Warning

Hazard Statements H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H401 Toxic to aquatic life.

Precautionary Statements Prevention P280 Wear protective gloves/eye protection/face protection.

P273 Avoid release to the environment.

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

Response P302 + P352 IF ON SKIN: Wash with plenty of water/...

P337 + P313 If eye irritation persists: Get medical advice/attention.

P391 Collect spillage.

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

P330 Rinse mouth.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

Disposal 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

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

Hazards

6.3A Substances that are irritating to the skin6.4A Substances that are irritating to the eye

Environmental **9.1D** Substances that are slightly harmful to the aquatic environment or are otherwise

Hazards designed for biocidal action

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Ferrous sulphate, monohydrate	FeSO4.H2O	17375-41-6	90 - 100 %
Contains: Manganese sulfate (as Mn)	H2O4S.Mn	7785-87-7	<1 %
Contains: Sulfuric acid	H2O4S	7664-93-9	<1 %
Other impurities and stabilising additives	Unspecified	Unspecified	Balance %

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 if you feel unwell. 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. If eye irritation persists, get medical advice/attention.

Skin IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin

irritation occurs, get medical advice/attention.

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 and supportively. Symptoms may be delayed.

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

out.

Flammability ConditionsNon-combustible. This product does not burn or support combustion.

Extinguishing Media If material is involved in a fire, use extinguishing media appropriate to surrounding conditions.

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

Hazardous Products of

Combustion

Fire or heat will produce irritating and/or toxic gases, including Sulphur oxides, oxides of Iron.

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
Upper Explosion Limit
No Data Available
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. Avoid dust formation. Avoid breathing

dust and contact with eyes, skin and clothing.

Clean Up Procedures Carefully shovel or sweep up spilled material and place in suitable container (see SECTION 13). Avoid dispersal of

dust in the air.

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

Decontamination After cleaning, flush away traces with water. **Environmental Precautionary** Prevent entry into drains and waterways.

Measures

Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

Personal Precautionary

Evacuation Criteria

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. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Take precautionary measures against static discharge.

Avoid release to the environment.

Store in a cool, dry and well-ventilated place, out of direct sunlight. Avoid storing in hot and humid conditions. Keep Storage

container tightly closed when not in use. Protect from moisture. Keep away from incompatible materials (see

SECTION 10).

Materials for containers/packaging: Acid-resistant materials are appropriate. Non-acid resistant metals are unsuitable Container

(Iron, aluminium, etc).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

No value assigned for this specific material by Safe Work Australia. For Iron salts, soluble (as Fe): General

- Safe Work Australia Exposure Standard: TWA = 1 mg/m3

- New Zealand Workplace Exposure Standard: TWA = 1 mg/m3

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.

- Respiratory protection: Wear respiratory protection when dust is generated. Recommended: Dust mask/particulate **Personal Protection Equipment**

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

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

- Hand protection: Wear protective gloves. Recommended: Impervious gloves.

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

Protective apron; Boots; Overalls.

Special Hazards Precaustions

Do not use this product if coated with brownish-yellow basic ferric sulphate!

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Take off contaminated

clothing and wash before storage or reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

Appearance Powder or granules

Odour Odourless Colour Greyish white

3.0 - 5.0 (10% solution) **Vapour Pressure** No Data Available **Relative Vapour Density** No Data Available **Boiling Point** Decomposes

Melting Point No Data Available **Freezing Point** No Data Available

Solubility Soluble in water (29.7 g/100 mL) 20°C

Specific Gravity 2.97

Flash Point No Data Available **Auto Ignition Temp** No Data Available **Evaporation Rate** No Data Available **Bulk Density** No Data Available **Corrosion Rate** No Data Available

Decomposition Temperature >=300 °C

Density No Data Available **Specific Heat** No Data Available **Molecular Weight** No Data Available **Net Propellant Weight** No Data Available **Octanol Water Coefficient** No Data Available Particle Size No Data Available **Partition Coefficient** No Data Available Saturated Vapour Concentration No Data Available Vapour Temperature No Data Available Viscosity No Data Available **Volatile Percent** No Data Available **VOC Volume** No Data Available

Potential for Dust Explosion No information available. **Fast or Intensely Burning** No information available. Characteristics

Flame Propagation or Burning

Rate of Solid Materials

Additional Characteristics

No information available.

No information available.

Hygroscopic.

Non-Flammables That Could

Contribute Unusual Hazards to a

Non-combustible. This product does not burn or support combustion.

Properties That May Initiate or Contribute to Fire Intensity **Reactions That Release Gases**

or Vapours

Decomposes on heating emitting toxic fumes, including Sulphur oxides, oxides of Iron.

Release of Invisible Flammable

Vapours and Gases

No information available.

10. STABILITY AND REACTIVITY

General Information Gradual oxidation occurs in wet air, resulting in production of ferric sulfate, Fe(OH)SO4.

Chemical Stability Material is stable under normal conditions.

Conditions to Avoid Avoid dust formation. Avoid exposure to air. Protect from moisture/humidity.

Materials to Avoid Incompatible/reactive with alkalis, oxidising agents, fine metal powder, soluble carbonates. **Hazardous Decomposition**

Products

Decomposes on heating emitting toxic fumes, including Sulphur oxides, oxides of Iron.

Hazardous Polymerisation Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information

- Acute toxicity: Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Symptoms of swallowing large amounts of soluble iron compounds maybe delayed several hours and can include epigastric pain, vomiting blood and circulatory failure.
- Skin corrosion/irritation: Causes skin irritation due to strong acidity. Symptoms include redness.
- Eye damage/irritation: Causes serious eye irritation due to strong acidity. Symptoms include redness, pain, weeping.
- Respiratory/skin sensitisation: No sensitizing effects known.
- Germ cell mutagenicity: No biologically relevant genotoxic activity.
- Carcinogenicity: Not listed as a suspected/confirmed carcinogen by IARC, NTP.
- Reproductive toxicity: No information available.
- STOT (single exposure): Dust may cause respiratory irritation, coughing and shortness of breath.
- STOT (repeated exposure): Gastrointestinal disturbances, including colic, constipation and diarrhoea may occur in humans following the ingestion of iron sulfate. In children, ingestion of large quantities can cause vomiting (the vomit may contain blood), liver damage, rapid heart beat and peripheral vascular collapse.

- Aspiration toxicity: No information available.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat: 319 mg/kg (Ferrous sulfate).

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity Aquatic toxicity:

- LC50, Fish (various species): >0.41 - 28 mg/L (96 h) [Ferrous sulfate]. - EC50, Crustacea (Daphnia magna): 1 - 10 mg/L (48 h) [Ferrous sulfate].

Persistence/Degradability Not applicable for an inorganic compound.

Mobility No information available.

Environmental Fate Toxic to aquatic life - Prevent entry into drains and waterways.

Bioaccumulation Potential Bioconcentration of iron to species is relatively low. Iron is an essential element for most living species and may be

actively regulated in organisms.

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 Recycle containers after cleaning, or dispose properly under relevant regulations and local government standards.

Remove residual content completely before disposing of empty containers.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name Ferrous sulphate, monohydrate

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

No Data Available

UN Number No Data Available Hazchem No Data Available **Pack Group** No Data Available **Special Provision** No Data Available Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code

Proper Shipping Name Ferrous sulphate, monohydrate

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

No Data Available

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

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Mexico)

Proper Shipping Name Ferrous sulphate, monohydrate

ClassNo Data AvailableSubsidiary Risk(s)No Data Available

No Data Available

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433

Proper Shipping Name Ferrous sulphate, monohydrate

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

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

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT

Proper Shipping Name Ferrous sulphate, monohydrate

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

UN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code

Proper Shipping Name Ferrous sulphate, monohydrate

ClassNo Data AvailableSubsidiary Risk(s)No Data AvailableUN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data AvailableEMSNo Data Available

Marine Pollutant No

Comments NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name Ferrous sulphate, monohydrate

ClassNo Data AvailableSubsidiary Risk(s)No Data AvailableUN NumberNo Data AvailableHazchemNo Data AvailablePack GroupNo Data AvailableSpecial ProvisionNo Data Available

Comments NON-DANGEROUS GOODS: Not regulated for AIR transport.

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)Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR002503

National/Regional Inventories

Australia (AIIC) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

Europe (EINECS) 605-688-1

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 FESULP0100, FESULP0200, FESULP0300, FESULP0400, FESULP0401, FESULP0402, FESULP0500,

FESULP0501, FESULP0900, FESULP1000, FESULP1001, FESULP1002, FESULP1003, FESULP1004, FESULP1005, FESULP1006, FESULP1007, FESULP1008, FESULP1009, FESULP1010, FESULP1011, FESULP1012, FESULP1013, FESULP1014, FESULP1015, FESULP1016, FESULP1017, FESULP1018, FESULP1019, FESULP1020, FESULP1021, FESULP1022, FESULP1036, FESULP1037, FESULP1100, FESULP1200, FESULP2200, FESULP2300, FESULP2600, FESULP2700, FESULP2701, FESULP2710, FESULP2800, FESULP2801, FESULP2810, FESULP3000, FESULP3001, FESULP3002, FESULP3003, FESULP3004, FESULP3100, FESULP3101, FESULP3102, FESULP3103, FESULP3104, FESULP3200, FESULP3201, FESULP3300, FESULP3301, FESULP3400, FESULP3600, FESULP3601, FESULP3602, FESULP3603, FESULP3604, FESULP3605, FESULP3700, FESULP3701, FESULP3702, FESULP3703, FESULP3704, FESULP3705, FESULP3706, FESULP3710, FESULP3720, FESULP3800, FESULP3801, FESULP4000, FESULP4001, FESULP4200, FESULP4300, FESULP4301, FESULP4400, FESULP4700, FESULP5600, FESULP5601, FESULP5602, FESULP5700, FESULP5701, FESULP5800, FESULP5801, FESULP5802, FESULP5900, FESULP6300, FESULP6400, FESULP6401, FESULP6410, FESULP6420, FESULP6430, FESULP6601, FESULP6602, FESULP6603, FESULP6604, FESULP6700, FESULP6705, FESULP6710, FESULP6711, FESULP6715, FESULP6800, FESULP6801, FESULP6802, FESULP6803, FESULP6810, FESULP6825, FESULP6850, FESULP6851, FESULP6900, FESULP7100, FESULP7200,

FESULP7300, FESULP7600, FESULP7601, FESULP7602, FESULP7700, FESULP7800, FESULP8500, FESULP8501, FESULP9200

Revision 4

Revision Date 23 Mar 2021
Reason for Issue SDS updated
Key/Legend < Less Than
> Greater Than

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square CentimetresCO2 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 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