

### 1. IDENTIFICATION

<b>Product Name</b>	<b>Ferrous sulphate, heptahydrate</b>
<b>Other Names</b>	Ferrous sulfate, heptahydrate; Iron sulfate, heptahydrate
<b>Uses</b>	Water and sewage treatment; reducing agent; wood preservative; fertiliser; chemical manufacture.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	FeO4S.7H2O
<b>Chemical Name</b>	Sulfuric acid, iron(2+) salt (1:1), heptahydrate
<b>Product Description</b>	No Data Available

### Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty 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



<b>Hazard Classification</b>	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)		
<b>Hazard Categories</b>	Acute Toxicity (Oral) - Category 4 Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 2A		
<b>Pictograms</b>			
<b>Signal Word</b>	Warning		
<b>Hazard Statements</b>	<b>H302</b>	Harmful if swallowed.	
	<b>H315</b>	Causes skin irritation.	
	<b>H319</b>	Causes serious eye irritation.	
<b>Precautionary Statements</b>	Prevention	<b>P280</b>	Wear protective gloves/eye protection/face protection.
		<b>P270</b>	Do not eat, drink or smoke when using this product.
	Response	<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of soap and water.
		<b>P337 + P313</b>	If eye irritation persists: Get medical advice/attention.
		<b>P301 + P312</b>	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
		<b>P330</b>	Rinse mouth.
		<b>P332 + P313</b>	If skin irritation occurs: Get medical advice/attention.
		<b>P362</b>	Take off contaminated clothing and wash before reuse.
		<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	Disposal	<b>P501</b>	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

<b>HSNO Classifications</b>	Health Hazards	<b>6.1D</b>	Substances that are acutely toxic - Harmful
		<b>6.3A</b>	Substances that are irritating to the skin
		<b>6.4A</b>	Substances that are irritating to the eye
	Environmental Hazards	<b>9.1D</b>	Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action
		<b>9.3C</b>	Substances that are harmful to terrestrial vertebrates

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Ingredients**



Chemical Entity	Formula	CAS Number	Proportion
Ferrous sulfate, heptahydrate	FeSO <sub>4</sub> .7H <sub>2</sub> O	7782-63-0	<=100 %

#### 4. FIRST AID MEASURES

##### *Description of necessary measures according to routes of exposure*

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth thoroughly with water. Do not induce vomiting. Call a Poison Centre or doctor/physician for advice. Never give anything by mouth to an unconscious person.
<b>Eye</b>	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.
<b>Skin</b>	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.
<b>Inhaled</b>	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.
<b>Advice to Doctor</b>	Treat symptomatically. Symptoms may be delayed for several hours.
<b>Medical Conditions Aggravated by Exposure</b>	No information available.

#### 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
<b>Flammability Conditions</b>	Non-combustible; Material does not burn.
<b>Extinguishing Media</b>	If material is involved in a fire, use dry chemical, Carbon dioxide (CO <sub>2</sub> ), foam or water spray for extinction. Use extinguishing media appropriate to surrounding fire conditions.
<b>Fire and Explosion Hazard</b>	Decomposes on heating, emitting toxic fumes.
<b>Hazardous Products of Combustion</b>	Fire or heat may produce irritating, toxic and/or corrosive fumes, including Sulfur oxides.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
<b>Personal Protective Equipment</b>	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

#### 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Collect material (sweep or vacuum up) and place into suitable, properly labelled containers for disposal (see SECTION 13).
<b>Containment</b>	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.
<b>Decontamination</b>	Wash area down with excess water. Prevent entry into drains and waterways.



**Environmental Precautionary Measures**

**Evacuation Criteria**

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

**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/aerosols. Avoid breathing dust/aerosols and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).

**Storage**

Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed when not in use - check regularly for spills. Avoid exposure to air and moisture (hygroscopic). Keep away from food/feedstuffs 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 Iron salts, soluble (as Fe):

- Safe Work Australia Exposure Standard: TWA = 1 mg/m<sup>3</sup>
- New Zealand Workplace Exposure Standards: TWA = 1 mg/m<sup>3</sup>
- NIOSH REL: TWA = 1 mg/m<sup>3</sup>

**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 avoid eye contact. Recommended: Safety glasses with side-shields or chemical goggles.
- Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. Nitrile rubber.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes; Complete suit protecting against chemicals.

**Special Hazards Precautions**

No information available.

**Work Hygienic Practices**

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**

Crystals or powder

**Odour**

Odourless

**Colour**

Grey to green (glaucous)

**pH**

3 - 5 (10% soln.)

**Vapour Pressure**

No Data Available

**Relative Vapour Density**

No Data Available

**Boiling Point**

No Data Available

**Melting Point**

64 °C

**Freezing Point**

No Data Available



<b>Solubility</b>	Soluble in water
<b>Specific Gravity</b>	1.898 (Water = 1)
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	No information available.
<b>Fast or Intensely Burning Characteristics</b>	No information available.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	Non-combustible; Material does not burn.
<b>Reactions That Release Gases or Vapours</b>	Decomposes on heating, emitting toxic fumes, including Sulfur oxides.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	No information available.
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Conditions to Avoid</b>	Avoid generating dust. Avoid exposure to air and moisture (hygroscopic).
<b>Materials to Avoid</b>	Incompatible/reactive with oxidising agents, alkalis.
<b>Hazardous Decomposition Products</b>	Decomposes on heating, emitting toxic fumes, including Sulfur oxides.
<b>Hazardous Polymerisation</b>	Hazardous polymerisation will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	- Acute toxicity: Harmful if swallowed; may cause nausea, vomiting, diarrhoea and gastrointestinal irritation. Ingestion of large amounts may cause epigastric pain, vomiting blood, circulatory failure (symptoms may be delayed).
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- Skin corrosion/irritation: Causes skin irritation.
- Eye damage/irritation: Causes serious eye irritation.
- Respiratory/skin sensitisation: Not sensitising.
- Germ cell mutagenicity: No evidence of mutagenic or teratogenic effects.
- Carcinogenicity: No evidence of carcinogenic properties.
- Reproductive toxicity: No information available.
- STOT (single exposure): Breathing dust may cause respiratory tract irritation.
- STOT (repeated exposure): No information available.
- Aspiration toxicity: No information available.

**Acute**

**Ingestion** Acute toxicity (Oral):  
- LD50, Rat: 300 - 2,000 mg/kg bw. [ECHA].

**Carcinogen Category** None

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity** No information available.  
**Persistence/Degradability** No information available.  
**Mobility** No information available.  
**Environmental Fate** Prevent entry into drains and waterways.  
**Bioaccumulation Potential** No information available.  
**Environmental Impact** No Data Available

**13. DISPOSAL CONSIDERATIONS**

**General Information** Dispose of contents/container to a licensed disposal company and 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** Ferrous sulphate, heptahydrate  
**Class** 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, heptahydrate



<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (New Caledonia)**

<b>Proper Shipping Name</b>	Ferrous sulphate, heptahydrate
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (New Zealand)**

NZS5433

<b>Proper Shipping Name</b>	Ferrous sulphate, heptahydrate
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (United States of America)**

US DOT

<b>Proper Shipping Name</b>	Ferrous sulphate, heptahydrate
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Sea Transport**

IMDG Code

<b>Proper Shipping Name</b>	Ferrous sulphate, heptahydrate
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available



<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>EMS</b>	No Data Available
<b>Marine Pollutant</b>	No
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for SEA transport.

**Air Transport**  
IATA DGR

<b>Proper Shipping Name</b>	Ferrous sulphate, heptahydrate
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	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)

<b>Dangerous Goods Classification</b>	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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**15. REGULATORY INFORMATION**

<b>General Information</b>	No Data Available
<b>Poisons Schedule (Aust)</b>	Not Scheduled

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

<b>Approval Code</b>	HSR003427
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**National/Regional Inventories**

<b>Australia (AICS)</b>	Listed
<b>Canada (DSL)</b>	Not Determined
<b>Canada (NDSL)</b>	Not Determined
<b>China (IECSC)</b>	Not Determined
<b>Europe (EINECS)</b>	231-753-5
<b>Europe (REACH)</b>	Not Determined
<b>Japan (ENCS/METI)</b>	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

<b>Related Product Codes</b>	FESULP0600, FESULP0601, FESULP0700, FESULP0800, FESULP0801, FESULP1300, FESULP1400, FESULP1500, FESULP1501, FESULP1502, FESULP1600, FESULP1601, FESULP1700, FESULP1701, FESULP1800, FESULP1801, FESULP1802, FESULP1803, FESULP1804, FESULP1805, FESULP1806, FESULP1807, FESULP1808, FESULP1809, FESULP1810, FESULP1811, FESULP1812, FESULP1813, FESULP1814, FESULP1815, FESULP1816, FESULP1817, FESULP1818, FESULP1819, FESULP1820, FESULP1821, FESULP1822, FESULP1823, FESULP1824, FESULP1825, FESULP1826, FESULP1827, FESULP1900, FESULP2000, FESULP2100, FESULP2400, FESULP2500, FESULP2900, FESULP3500, FESULP3501, FESULP3502, FESULP3510, FESULP3900, FESULP3901, FESULP3902, FESULP3903, FESULP4100, FESULP4500, FESULP4501, FESULP4502, FESULP4600, FESULP4800, FESULP4900, FESULP5000, FESULP5001, FESULP5100, FESULP5200, FESULP5300, FESULP5400, FESULP5500, FESULP5501, FESULP5502, FESULP5503, FESULP5504, FESULP6000, FESULP6001, FESULP6100, FESULP6200, FESULP6500, FESULP6600, FESULP6605, FESULP6606, FESULP6607, FESULP6608, FESULP6609, FESULP6610, FESULP6611, FESULP6612, FESULP6613, FESULP6614, FESULP6630, FESULP6640, FESULP6641, FESULP6644, FESULP6645, FESULP6650, FESULP7000, FESULP7001, FESULP7400, FESULP7500, FESULP8000, FESULP8001, FESULP8200, FESULP8300, FESULP8600, FESULP9000, FESULP9500, FESULP9600, FESULP9800, FESULP9900, FESULP9901, FESUPH1000, FESUPH1500, FESUPH2000, FESUPH2500
<b>Revision</b>	3
<b>Revision Date</b>	16 Sep 2019
<b>Key/Legend</b>	<p>&lt; Less Than &gt; Greater Than  <b>AICS</b> Australian Inventory of Chemical Substances  <b>atm</b> Atmosphere  <b>CAS</b> Chemical Abstracts Service (Registry Number)  <b>cm<sup>2</sup></b> Square Centimetres  <b>CO<sub>2</sub></b> Carbon Dioxide  <b>COD</b> Chemical Oxygen Demand  <b>deg C (°C)</b> Degrees Celcius  <b>EPA (New Zealand)</b> Environmental Protection Authority of New Zealand  <b>deg F (°F)</b> Degrees Farenheit  <b>g</b> Grams  <b>g/cm<sup>3</sup></b> Grams per Cubic Centimetre  <b>g/l</b> Grams per Litre  <b>HSNO</b> Hazardous Substance and New Organism  <b>IDLH</b> Immediately Dangerous to Life and Health  <b>immiscible</b> Liquids are insoluable in each other.  <b>inHg</b> Inch of Mercury  <b>inH<sub>2</sub>O</b> Inch of Water  <b>K</b> Kelvin  <b>kg</b> Kilogram  <b>kg/m<sup>3</sup></b> Kilograms per Cubic Metre  <b>lb</b> Pound  <b>LC50</b> 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.  <b>LD50</b> 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.  <b>ltr</b> or <b>L</b> Litre  <b>m<sup>3</sup></b> Cubic Metre</p>



**mbar** Millibar  
**mg** Milligram  
**mg/24H** Milligrams per 24 Hours  
**mg/kg** Milligrams per Kilogram  
**mg/m<sup>3</sup>** Milligrams per Cubic Metre  
**Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.  
**mm** Millimetre  
**mmH<sub>2</sub>O** Millimetres of Water  
**mPa.s** Millipascals per Second  
**N/A** Not Applicable  
**NIOSH** National Institute for Occupational Safety and Health  
**NOHSC** National Occupational Health 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

