



Infosafe No™	1CH39	Issue Date : May 2019	RE-ISSUED by CHEMSUPP
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Product Name : **FERROUS SULFATE**

Classified as hazardous

1. Identification

GHS Product Identifier	FERROUS SULFATE	
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
Address	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001	
Emergency phone number	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)	
Recommended use of the chemical and restrictions on use	Iron oxide pigment; other iron salts; ferrites; water and sewage treatment; catalyst, especially for synthetic ammonia; fertiliser; feed additive; flour enrichment; reducing agent; herbicide; wood preservative; process engraving and electroplating; analytical reagent; laboratory reagent,	
Other Names	<u>Name</u>	<u>Product Code</u>
	IRON (II) SULFATE Heptahydrate AR	FA001
	IRON (II) SULFATE Heptahydrate LR	FL001
	IRON (II) SULFATE Dried LR	FL036
	Copperas, Sulferrous, Green vitriol, Iron (II) sulfate.	
Additional Information	When used for laboratory chemical analysis, it has no poison schedule. If this compound is used in human or animal application then it may acquire a poison schedule of S6, S5, S4 or S2. {refer to 'Standard for the Uniform Scheduling of Drugs and Poisons, No. 16'}	
Other Information	Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.	

2. Hazard Identification

GHS classification of the substance/mixture	Eye Damage/Irritation: Category 2A Acute Toxicity - Oral: Category 4 Skin Corrosion/Irritation: Category 2
Signal Word (s)	WARNING
Hazard Statement (s)	H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation.
Pictogram (s)	Exclamation mark 
Precautionary statement – Prevention	P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P362 Take off contaminated clothing and wash before reuse. P332+P313 If skin irritation occurs: Get medical advice/attention. 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 CENTER or doctor/physician.



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Precautionary statement – Disposal P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

Chemical Characterization Solid

Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	Iron (II) Sulfate monohydrate	17375-41-6	91-100 %		
	Iron (II) sulfate Heptahydrate	7782-63-0	98-100 %		
	Iron (II) Sulfate Dried	13463-43-9	88-100 %		

4. First-aid measures

Inhalation Remove victim to fresh air. Keep warm and at rest. Employ artificial respiration if indicated. Seek medical advice if effects persist.

Ingestion Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Skin Remove contaminated clothing and wash affected skin with soap and water. If persistent irritation occurs, obtain medical attention.

Eye contact Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.

First Aid Facilities Maintain eyewash fountain and safety shower in work area.

Advice to Doctor Treat symptomatically based on judgement of doctor and individual reactions of the patient.

Other Information For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products May liberate toxic fumes in fire such as sulfur and iron oxides.

Specific Methods Use extinguishing media most appropriate for the surrounding fire.
Small fire: Use dry chemical, CO₂, water spray or foam.
Large fire: Use water spray, fog or foam.
If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out.

Specific hazards arising from the chemical Material does not burn. Fire or heat may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Runoff may pollute waterways.

Precautions in connection with Fire Wear SCBA and structural firefighter's uniform.

6. Accidental release measures

Personal Precautions Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing.

Personal Protection Wear protective clothing specified for normal operations (see Section 8)

Clean-up Methods - Small Spillages Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

7. Handling and storage

Handling and Storage Air and moisture sensitive.

Precautions for Safe Handling Avoid prolonged or repeated contact with skin, eyes and clothing. Only use in well-ventilated areas. Keep container tightly closed when not in use. Avoid generating and inhaling dust.

Conditions for safe storage, including any incompatibilities Keep container tightly closed and in a cool, well-ventilated place, away from direct sunlight and other sources of heat or ignition. Ferrous salts are subject to oxidation. Sensitive to air.



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Storage Temperatures Store at room temperature (15 to 25 °C recommended).

8. Exposure controls/personal protection

Occupational exposure limit values	<u>Name</u>	<u>STEL</u>		<u>TWA</u>		<u>Footnote</u>
		<u>mg/m3</u>	<u>ppm</u>	<u>mg/m3</u>	<u>ppm</u>	
	Iron (II) sulfate Heptahydrate			1		Iron salts, soluble (as Fe)
Other Exposure Information	<p>These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.</p> <p>A time weighted average (TWA) has been established for Iron salts, soluble (as Fe) (Safe Work Aust) of 1 mg/m³. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.</p>					
Appropriate engineering controls	<p>In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. These methods should be used in preference to personal protective equipment.</p>					
Respiratory Protection	<p>Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.</p>					
Eye Protection	<p>The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.</p>					
Hand Protection	<p>Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments.</p> <p>Recommendation: Rubber or plastic gloves.</p>					
Personal Protective Equipment	<p>Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.</p>					
Footwear	<p>Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.</p>					
Body Protection	<p>Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.</p>					
Hygiene Measures	<p>Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.</p>					

9. Physical and chemical properties

Form	Solid
Appearance	Light blue-green or yellow-brown crystals or granules.
Odour	Odourless.
Melting Point	Heptahydrate: 64 °C. Dried: 300 °C (release of crystalline water).
Boiling Point	Heptahydrate: Loses 7H ₂ O by 300 °C
Solubility in Water	Heptahydrate: soluble (400 g/l @ 20 °C). Dried: soluble (256 g/l @ 20 °C).
Solubility in Organic Solvents	Insoluble in alcohol.
Specific Gravity	Heptahydrate: 1.89. Dried: 2.97.



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pH	Heptahydrate: pH 3 - 4 (50 g/l, H ₂ O, 20 °C). Dried: pH 2.5 - 3.8 (50 g/l, H ₂ O, 20 °C).
Flammability	Non combustible material.
Molecular Weight	Heptahydrate: 278.02. Dried: 151.91 + aq.
Other Information	Taste: astringent.

10. Stability and reactivity

Chemical Stability	Loses water in dry air and oxidises upon exposure to moisture, forming a brown coating of extremely corrosive basic ferric sulfate. Hygroscopic.
Conditions to Avoid	Dust generation. Moisture. Incompatibles.
Incompatible Materials	Alkalis, soluble carbonates, acids and oxidising materials.
Hazardous Decomposition Products	Sulfur and iron oxides.
Possibility of hazardous reactions	Hazardous catalytic reactions involving iron compounds have been reported, for example ethylene oxide polymerises explosively in the presence of ferric chloride. Care should also be taken when ferrous salts are mixed or reacted with oxidizing agents. Ferrous sulfate heptahydrate reacts in moist air to form ferric sulfate.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	Oral LD ₅₀ (rat): 319 mg/kg (anhydrous) LD ₅₀ (mouse): 1520 mg/kg
Ingestion	Harmful if swallowed. Low toxicity in small quantities. Symptoms of the ingestion of larger dosages may be delayed for several hours and can include of nausea, vomiting, diarrhea, intestinal disorders, black stool, epigastric pain, hematemesis and possible circulatory failure. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, depression of the CNS, respiration and cardiovascular system, coma and death from iron poisoning has been recorded. Hours or days after apparent recovery metabolic acidosis, convulsions and coma may occur. If the patient survives, symptoms of acute liver necrosis may develop and could lead to death due to hepatic coma. Smaller doses are much more toxic to children.
Inhalation	Inhalation of dust may cause irritation to the upper respiratory system. Symptoms may include of coughing and shortness of breath.
Skin	Skin contact may cause irritation, redness, itching and pain to the skin.
Eye	May be harmful if in contact with the eyes. Symptoms include of irritation, redness, tearing, stinging, pain and blurred vision.
Carcinogenicity	No evidence of carcinogenic properties.
Chronic Effects	Continued ingestion of medicinal amounts of iron salts may cause constipation. Repeated or prolonged inhalation may aggravate existing respiratory disorders. Severe or chronic ferrous sulfate poisonings may damage blood vessels, and increase iron levels in the liver and spleen effects. Large chronic doses cause rickets in infants. Chronic exposure may cause liver effects. Prolonged exposure of the eyes may cause discoloration.
Mutagenicity	No evidence of mutagenic properties.

12. Ecological information

Ecotoxicity	Quantitative data on the ecological effect of this product are not available.
Acute Toxicity - Fish	The following applies to dissolved iron compounds in general: Fish: toxic as from 0.9 mg/l @ pH 6.5 - 7.5 lethal as from 1 mg/l @ pH 5.5-6.7 50mg/l iron upper limit for fish life.

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.
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14. Transport information



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Transport Information	Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
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15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
Poisons Schedule	Not Scheduled

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.
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Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
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Empirical Formula & Structural Formula	Heptahydrate: FeSO ₄ .7H ₂ O
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Dried: FeSO₄.xH₂O

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