

Safety Data Sheet

According to the International Organization for Standardization, ISO 11014:2009

www.kimleigh.com

TEL: | +27 18 293 1028: | +27 18 285 1014



Reg. No. 1974/000531/07

PO Box 1097 | Potchefstroom | 2520 | South Africa

11 Jasper vd Westhuizen Str | Potchindustria | Potchefstroom | 2531

Trade name: Ferrous Sulphate Monohydrate

Product range:



SECTION 1: Chemical Product and Company Identification

1.1 Product identifier:

Product name : Ferrous Sulphate Monohydrate
Chemical formula : FeSO₄.H₂O
Synonyms : Iron (II) Sulphate Monohydrate
Chemical Family : Transition metal sulphates

1.2 Relevant identified uses of the substance or mixture and uses advised against:

Animal feeds, fertilizers, wood preservation, cement, water and sewerage treatment, catalyst and food additive.

1.3 Details of the supplier of the safety data sheet:

Kimleigh Chemicals SA (Pty) Ltd

11 Jasper van der Westhuizen Street, Potchindustria, Potchefstroom, North West Province, 2531, South Africa

Tel no.: +27 (18) 293-1028

Fax no.: +27 (18) 294-4079

Web: www.kimleigh.com



E-mail: sheq@kimleigh.co.za

1.4 Emergency telephone number:

Kimleigh Chemicals SA (Pty) Ltd: Tel: +27 (18) 293-1028

SECTION 2: Hazards Identification

2.1. Classification of the substance:

Classification according to the Global Harmonized System (GHS):	Code:	Pictogram:	Signal word:
Health hazards: Harmful if swallowed. Causes serious eye irritation. May cause respiratory irritation. Causes skin irritation.	H302 H319 H335 H315	 GHS07	Warning
Environmental hazards: Toxic to aquatic life with long lasting effect.	H411	 GHS09	

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Precautionary statements:

P261	Avoid breathing dust/mist/spray/gas/vapour.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: call a poison center or doctor/physician IF you feel unwell.
P302+P352	IF ON SKIN: Gently wash with plenty of soap and water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P312	Call a POISON CENTER or doctor/physician.
P330	Rinse mouth.
P332+P313	IF SKIN irritation occurs: Get medical advice/attention.
P337+P313	IF EYE irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.2 Potential health effects:

Routes of entry: Eye contact, inhalation, ingestion, absorbed through skin.

Eyes: May cause eye irritation and local inflammation. Possible corneal burn symptoms include stinging, tearing and redness.

Skin: May cause skin irritation. Symptoms include redness, itching, and redness.

Inhalation: Inhalation of dust may cause respiratory tract irritation. Other symptoms can include irritation of nasal passages, sore throat, shortness of breath, and coughing.

Ingestion: May cause irritation and/or burning sensation in the mouth, pharynx, oesophagus, and gastrointestinal tract. Symptoms may include abdominal pain, nausea, vomiting, diarrhoea, and black stool. Pink urine discoloration is a strong indicator of iron poisoning. Liver damage, coma, and death from iron poisoning has been recorded. Smaller doses are much more toxic to children.

SECTION 3: Composition/Information on Ingredients

3.1 Substance:

Substance name: Ferrous Sulphate Monohydrate

QAF0344-03	Original date:	19.01.2011	Version:	3.000	Revision date:	10.09.2020	Page 2 of 9
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Product range:



Appearance:	Grey to off-white crystals
Active ingredients:	FeSO ₄ .H ₂ O: 35 %
Molar mass:	169.92 g/mol
CAS number:	17375-41-6
EC number:	231-753-5

SECTION 4: First Aid Measures

4.1 Description of first aid measures

General information

Consult a physician. Show this material safety data sheet to doctor in attendance.

Following inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Following skin contact

In case of contact, immediately flush skin with soap and plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation persists.

Following eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Following ingestion

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth with water. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

SECTION 5: Firefighting Measures

5.1 Products of combustion:

Oxides of sulphur and iron.

Explosion hazards in presence of various substances:

Risk of explosion of the product in the presence of static discharge: **NO**.

Risk of explosion of the product in presence of mechanical impact: **NO**.

5.2 Firefighting media and instructions:

QAF0344-03	Original date:	19.01.2011	Version:	3.000	Revision date:	10.09.2020	Page 3 of 9
------------	----------------	------------	----------	-------	----------------	------------	-------------

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Trade name: Ferrous Sulphate Monohydrate

Product range:



Use alcohol-resistant foam, water spray, dry chemical or carbon dioxide.

Protective clothing (Fire): Wear NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.

Special remarks on fire hazards: Prevent fire-fighting water from entering surface water or groundwater.

Special remarks on explosion hazards: This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

SECTION 6: Accidental Release Measures

- 6.1 Personal Protection:** Hands: Nitrile rubber gloves.
Eyes: Splash goggles.
Body: Protective work clothing.
Feet: Safety boots.

Wear appropriate respiratory and personal protection equipment. Isolate spill area and provide ventilation. Avoid dust formation. Avoid breathing vapours, mist or gas. Scoop or vacuum up spill using a vacuum system equipped with a high efficiency particulate air (HEPA) filtration system and place in a properly labeled closed container for further handling and disposal.

- 6.2 Small spill:**
Use appropriate tools and personal protective equipment. Pick up spillage. Dispose of in a waste disposal container. Do not allow to enter sewerage system.

- 6.3 Large spill:**
Use appropriate tools and personal protective equipment. Contain material. Take up spillage limiting generation of dust. Dispose of in a waste disposal container. Do not allow to enter sewerage system.

Environmental Precautions: Do not allow to enter drains or to be released to the environment.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Protective measures

Advice on safe handling

Handle in a well-ventilated area in an enclosed, controlled process. Avoid creating dust. Ensure adequate ventilation if dusts are created. Do not breathe dust or fumes. Wash thoroughly before eating or smoking. See section 8 for information on personal protection equipment.

QAF0344-03	Original date:	19.01.2011	Version:	3.000	Revision date:	10.09.2020	Page 4 of 9
------------	----------------	------------	----------	-------	----------------	------------	-------------

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Product range:



Advice on safe storage

Store in a cool, dry area. Store material tightly sealed in properly labeled containers. Protect from moisture. Store away from oxidizers. Do not use this product if coated with brownish-yellow basic ferric sulphate.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

Engineering controls:

Whenever possible the use of local exhaust ventilation or other engineering controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

8.2 Personal Protection:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of substance handled.

Respiratory: Use suitable respirator when dust or fumes are present.

Eye: Safety glasses

Skin: Impermeable gloves, protective work clothing as necessary.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practices. Remove and wash contaminated clothing. Wash hands after use and before eating or smoking. Wash promptly if skin becomes contaminated or wet.

Protection in case of large spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance:

Physical state: Powder

Colour: Grey to off-white

Odour: Odourless

9.2 Other information:

Boiling point: > 300°C (decomposes)

QAF0344-03	Original date:	19.01.2011	Version:	3.000	Revision date:	10.09.2020	Page 5 of 9
------------	----------------	------------	----------	-------	----------------	------------	-------------

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Product range:



Vapour density:	Not available
Flammability/explosive limits:	Not available
Bulk density:	1,500 kg/m ³
Relative density (20°C):	1.97 g/m ³
Solubility:	48.6 g/100 g water
pH (50 g/ℓ):	3.0 – 5.0

SECTION 10: Stability and Reactivity

10.1 Reactivity and stability

The product is stable under recommended conditions of storage and use. Loses water in dry air and oxidises upon exposure to moisture, forming a brown coating of extremely corrosive basic ferric sulphate.

10.2 Conditions of Instability

Avoid contact with moisture.

10.3 Hazardous decomposition products

Toxic sulphur dioxide fumes. Iron oxides.

10.4 Incompatibility with various substances

Alkalis, soluble carbonates and oxidising agents. Reacts in moist air to form ferric sulphate.

10.5 Hazardous Polymerization

Will not occur.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects:

	Effect dose / concentration	Value(s)	Species
Acute oral toxicity	LD50	319 mg/kg	Rat

11.2 Other information:

Acute and chronic effects on humans: May be harmful if swallowed or inhaled. May cause irritation to skin, eyes, and respiratory tract. Affects liver.

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Product range:



Following inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Following skin contact

In case of contact, immediately flush skin with soap and plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if irritation persists.

Following eye contact

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Following ingestion

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth with water. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Carcinogenicity:

No component of this product presented at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Toxicity to reproductive system: Not available.

SECTION 12: Ecological Information

12.1 Ecotoxicity:

This product is highly soluble in water and is directly acidic which can result in toxic impacts. In aquatic and terrestrial environments, its ferrous iron content will oxidize, consuming oxygen and the resultant hydrolysis reaction will generate additional acidity. These will also produce ferric hydroxide precipitates that can detrimentally affect aquatic organisms.

Daphnia: *Daphnia magna* EC50: Not available.

Algae: *Scenedesmus quadricauda*: IC50: Not available.

12.2 Mobility:

Do not allow to enter water or soil.

QAF0344-03	Original date:	19.01.2011	Version:	3.000	Revision date:	10.09.2020	Page 7 of 9
------------	----------------	------------	----------	-------	----------------	------------	-------------

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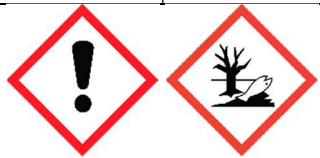
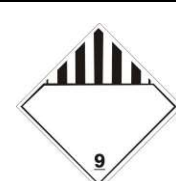


SECTION 13: Disposal Considerations

13.1 Treatment:

Consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal site (TDS) to assure compliance with all current, local, national, and governmental regulations.

SECTION 14: Transport Information

	Land transport (ADR/RID)	Inland waterway transport (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN No.	3077	3077	3077	3077
14.2 UN Proper shipping name	Environmental hazardous substance, Solid, n.o.s. (Ferrous Sulphate Monohydrate)	Environmental hazardous substance, Solid, n.o.s. (Ferrous Sulphate Monohydrate)	Environmental hazardous substance, Solid, n.o.s. (Ferrous Sulphate Monohydrate)	Environmental hazardous substance, Solid, n.o.s. (Ferrous Sulphate Monohydrate)
14.3 Transport hazard class(es)	Class 9	Class 9	Class 9	Class 9
Hazard label(s)	 GHS07 GHS09			
14.4 Packing group	III	III	III	III
14.5 Transport label				

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Section 15: Regulatory Information

15.1 Republic of South Africa Regulations:




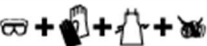



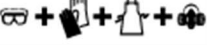

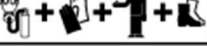

National Water Act 36 of 1998. Occupational Health and Safety Act, 1993. Environmental Conservation Act 73 of 1989. Hazardous Substances Act, 1973. Provincial Ordinances and Local By-laws.













SECTION 16: Other Information

16.1 Hazardous Material Identification System

HAZARD INDEX		
4	Severe Hazard	
3	Serious Hazard	
2	Moderate Hazard	
1	Slight Hazard	
0	Minimal Hazard	
* An asterisk or other designation corresponds to additional information on a data sheet or separate chronic effects notification		

HEALTH		0	3
FLAMMABILITY		0	
PHYSICAL HAZARD		0	
Personal Protection		K	

PERSONAL PROTECTION INDEX					
A		G			
B		H			
C		I			
D		J			
E		K			
F		X	Consult your supervisor or S.O.P. for "Special" handling directions		

A	n	o	p	q	r
					
S	t	u	w	y	z
					

16.2 Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with the International Organization for Standardization.

16.3 Disclaimer:

KIMLEIGH CHEMICALS SA (Pty) Ltd provides the information contained herein in good faith but does not assume any liability whatsoever for its accuracy or completeness. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.