

Safety Data Sheet

According to GHS (Third revised edition-2009), ISO11014-2009 and China GB/T 16483-2008

Number: MSDS-0004-EN	Version number: V.04	Date of issue: August 01, 2011
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Ferrous Sulfate Heptahydrate

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: Ferrous Sulfate Heptahydrate
Other names or synonyms: Ferrous sulphate heptahydrate; Sulfuric acid, iron salt, heptahydrate; Iron vitriol, heptahydrate; Iron hepta sulfate.
Recommended uses: Feed additives, fertilizers, as raw material for iron compounds, as reducing agent in cement, as a flocculant in water treatment, etc.
Restrictions on use: Please consult your regulatory authorities for any restrictions on use of this product.

Supplier name: KIRNS CHEMICAL LTD.
Address: 1802, 208 East Laodong Road, Changsha, Hunan-410007, China
Telephone number: +86 (731) 8867-8000
Fax number: +86 (731) 8867-7000
Email: kirns@kirns.com
Emergency phone number: +86 (731) 8867-8000 (ext. 802 or 803) (working hour, Monday to Friday)
The number stated here is only for domestic emergency in China. For emergencies outside China, please contact the national emergency phone numbers in your own country or ask your local supplier for support.

SECTION 2: HAZARD IDENTIFICATION

Hazard classification: Acute toxicity, Category 4, Oral, H302
Causes skin Irritation, Category 2, H315
Causes serious eye Irritation, Category 2A, H319

GHS Pictograms:



Signal word: Warning
Hazard statements: H302 Harmful if swallowed.
H315 Causes serious eye irritation.
H319 Causes skin irritation.

Precautionary statements: **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.

RESPONSE:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical attention/advice.

P302 +352 IF ON SKIN: Wash with plenty of soap and water.
P332+ P313 If skin irritation occurs: Get medical attention/advice.
P362 Take off contaminated clothing and wash before reuse.

STORAGE:
Not applicable.

DISPOSAL:

P501 Dispose of contents/container in accordance with all local, regional, national and



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Other Hazards: international regulations.
Not classified as other hazards.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: Substance
Ingredient: Ferrous Sulfate Heptahydrate
Formula: $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$
CAS number: 7782-63-0 (heptahydrate); 7720-78-7 (anhydrous)
EC number: 231-753-5

SECTION 4: FIRST-AID MEASURES

Skin: Take off contaminated clothing, flush skin with plenty of water. Seek medical attention if symptoms persist.
Eyes: Flush eyes with plenty of water for at least 15 minutes. Seek medical attention.
Ingestion: Induce vomiting as directed by physician. Never give anything by mouth to an unconscious person. Seek medical attention.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if discomfort continues.
Symptoms and effects: SKIN: Redness.
EYE: Redness, pain, weeping.
INHALATION: Coughing, pain, shortness of breath.
INGESTION: Vomiting, nausea, diarrhea.
Advice to doctor: No special antidote. Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media: This product does not burn or support combustion. Use extinguishing media appropriate for surrounding fire.
Hazards: This product is non-flammable but may form oxides of sulfur and iron as well as water vapor if heated to decompose.
Advice for fire-fighters: Wear a self-contained breathing apparatus with a full protective clothing in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear protective equipment to prevent skin and eye contamination and inhalation of dust.
Environmental precautions: Prevent entry into sewers or streams and other water bodies.
Disposal methods: Use appropriate tools to put the spilled material into a sealed container and hold for reuse or later disposal.

SECTION 7: HANDLING AND STORAGE

Handling: Avoid breathing dust. Avoid contacting skin, eyes and clothing. Use with adequate ventilation. No smoking, eating and drinking water at workplace. Avoid prolonged or repeated exposure.
Storage: Store in a dry place, keep away from conditions of high temperature and moisture. Avoid physical damages. Do not use this product if coated with brownish-yellow basic ferric sulfate.
Precautions: Please pay attention to **SECTION 10 CONDITIONS TO AVOID** and **INCOMPATIBLE MATERIALS**

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION



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Control parameters:	- CHINA GBZ 2.1-2007: No data for Ferrous Sulfate - OSHA PEL: not available. - ACGIH TLV: 1 mg/m ³ (TWA) soluble iron salt as Fe
Engineering controls:	Use adequate exhaust ventilation to keep airborne concentrations below the allowable exposure limits.
Respiratory protection:	Dustproof respirators when dusts are generated.
Hand protection:	Protective gloves, leather, rubber or plastic.
Eye protection:	Chemical goggles or safety glasses.
Skin and body protection:	Resistant protective clothing.
Hygiene precautions:	No smoking, eating and drinking water at workplace. Washing hands before eating. Taking bath after work.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid green or glaucous crystal or crystalline powder.
Odor:	Odorless
Odor Threshold:	Not applicable
pH value:	3.0-5.0
Melting/freezing point:	Not available.
Boiling point:	Not relevant; the sample decomposes before boiling.
Flash point:	Not applicable
Evaporation rate:	Not applicable to solids.
Flammability:	No flammability, explosiveness or auto-inflammability properties.
Upper/lower flammability or explosive limits:	Not applicable
Vapor pressure:	Endpoint is not relevant.
Vapor density:	Not applicable
Relative density:	1.898 g/cm ³
Solubility:	Readily soluble in water.
Partition coefficient : (n-octanol/water)	Not applicable to metal compounds.
Auto-ignition temperature:	No flammability, explosiveness or auto-inflammability properties.
Decomposition temperature:	Not applicable
Viscosity:	Not relevant

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Dangerous reactions are not expected under ambient and anticipated temperature and handling conditions of temperature and pressure.
Chemical stability:	Stable under ambient and anticipated temperature and handling conditions of temperature and pressure.
Possibility of hazardous reactions:	No polymerization will occur. Reacts in moist air to form ferric sulfate.
Conditions to avoid:	High temperatures, moisture.
Incompatible materials:	Strong alkalis, soluble carbonates, and oxidizing materials.
Hazardous decomposition products:	Sulfur oxides, oxides of iron.



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SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:	LD50 (oral-rat): 132 to 881 mg Fe/kg (OECD 432) LD50 (dermal-rat): >400 mg Fe/kg (OECD 402)
Skin irritation/corrosion:	Causes skin irritation.
Eye damage/irritation:	Causes serious eye irritation.
Respiratory or skin sensitization:	No sensitizing effects known.
Germ cell mutagenicity:	No biologically relevant genotoxic activity.
Carcinogenicity:	Not listed as a suspected / confirmed carcinogen by IARC, NTP.
Production toxicity:	No experimental or epidemiological evidence exists to justify classification of iron compounds for reproductive or developmental toxicity.
STOT-single exposure:	No experimental or epidemiological sufficient evidence for specific target organ toxicity (single exposure).
STOT-repeated exposure:	No experimental or epidemiological sufficient evidence for specific target organ toxicity (repeated exposure).
Aspiration hazard:	Not available.
Routes of entry:	Ingestion, eye and skin contact.
Chronic exposure:	Chronic ferrous sulfate poisonings may damage blood vessels. Large chronic doses cause rickets in infants. Chronic exposure may cause liver effects. Prolonged exposure of the eyes may cause discoloration.
Other information:	No more information available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:	No information found. Don't allow undiluted product or large quantities to penetrate into ground water, water bodies or sewage system.
Persistence and biodegradability:	Not Applicable.
Bio-accumulative potential:	Do not bio-accumulate or bio-magnify.
Mobility in soils:	No information found.
Results of PBT and vPvB assessment:	Not relevant to inorganic substances.
Other adverse effects:	No more information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of disposal:	Dispose of in accordance with all government regulations.
Contaminated packaging:	Dispose of the packaging in accordance with all government regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG:	Not regulated. UN No.: Hazard Class: Packing Group: Marine Pollutant: Proper Shipping name: Pictograms:
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ADR/RID: **Not regulated.**
UN No.:
Hazard Class:
Packing Group:
Proper Shipping name:

ITAT: **Not regulated.**
UN No.:
Hazard Class:
Packing Group:
Proper Shipping name:

SECTION 15: REGULATORY INFORMATION

China: **GB 12268-2005 List of Dangerous goods:** Not regulated.
List of Acute Toxic Chemicals (2002): Not regulated.
List of Severely Restricted Toxic Chemicals for Export and Import: Not regulated.

Other countries: Please refer to any applicable national regulations on the hazard and safety of this product.

SECTION 16: ADDITIONAL INFORMATION

Training advice: Provide adequate information, instructions and training for operators.

End of SDS

