

Safety Data Sheet

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

KIRNS

Number: MSDS-0003-EN	Version number: V.07	Date of issue: February 27, 2015
Supersedes version: V.06	Supersedes date: March 2, 2015	Page: 1 of 5

Zinc Sulfate Monohydrate


SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product name: Zinc Sulfate Monohydrate
Other names or synonyms: Zinc sulphate monohydrate; Sulfuric acid, zinc salt, monohydrate; Zinc vitriol, monohydrate; White vitriol, monohydrate.
Recommended uses: Feed additives, fertilizers, intermediates, laboratory chemicals, lubricants and lubricant additives, fillers, surface active agents, mining floatation agents, etc.
Restrictions on use: Please contact 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 serious eye damage, Category 1, H318
Acute aquatic toxicity, Category 1, H400
Chronic aquatic toxicity, Category 1, H410

GHS Pictograms: 

Signal word: Danger

Hazard statements: H302 Harmful if swallowed.
H318 Causes serious eye damage.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements: **PREVENTION:**
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear 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.
P310 Immediately call a POISON CENTER or doctor/physician.
P391 Collect spillage.

STORAGE: Not applicable**DISPOSAL:**

P501 Dispose of contents/container in accordance with all local, regional, national and international regulations.
Other Hazards: Not classified as other hazards.



Safety Data Sheet

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

KIRNS

Number: MSDS-0003-EN	Version number: V.07	Date of issue: February 27, 2015
Supersedes version: V.06	Supersedes date: March 2, 2015	Page: 2 of 5

Zinc Sulfate Monohydrate

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: ☒ Substance
Ingredient: Zinc Sulfate Monohydrate
Formula: $\text{ZnSO}_4 \cdot \text{H}_2\text{O}$
CAS number: 7446-19-7
EC number: 231-793-3

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: DO NOT induce vomiting. Immediately rinse mouth and drink plenty of water. 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, pain
EYE: Redness, pain.
INHALATION: Coughing, shortness of breath.
INGESTION: Abdominal pain, vomiting, nausea, stomach pain.
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 toxic oxides, sulfur and zinc oxide as well as water vapor if heated to decompose.
Advice for fire-fighters: Wear a self-contained breathing apparatus with 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 cool and dry place, keep away from moisture and avoid physical damages. Keep container closed when not in use.
Precautions: Do not contaminate food by storage or disposal. Do not contaminate water.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:
- CHINA GBZ 2.1-2007: No data for Zinc Sulfate
- OSHA PEL: not available.
- ACGIH TLV: not available.



Safety Data Sheet

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

KIRNS

Number: MSDS-0003-EN	Version number: V.07	Date of issue: February 27, 2015
Supersedes version: V.06	Supersedes date: March 2, 2015	Page: 3 of 5

Zinc Sulfate Monohydrate

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 white to off-white powder or granule.
Odor:	Odorless
Odor Threshold:	Not applicable
pH value:	4.0-7.0
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:	3.28 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. Possible violent reactions with strong oxidizing agents.
Conditions to avoid:	High temperatures, moisture.
Incompatible materials:	Strong oxidizing agents, strong acids, hydrogen peroxides.
Hazardous decomposition products:	Sulfur oxides, oxides of zinc.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:	LD50 (oral-rat): 574 to 2,949 mg/kg
Skin irritation/corrosion:	May cause skin irritation.



Safety Data Sheet

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

KIRNS

Number: MSDS-0003-EN	Version number: V.07	Date of issue: February 27, 2015
Supersedes version: V.06	Supersedes date: March 2, 2015	Page: 4 of 5

Zinc Sulfate Monohydrate

Eye damage/irritation:	Causes serious eye damage.
Respiratory or skin sensitization:	No sensitizing effects known.
Germ cell mutagenicity:	No biologically relevant genotoxic activity.
Carcinogenicity:	No experimental or epidemiological evidence exists to justify classification of zinc compounds for carcinogenic activity.
Production toxicity:	No experimental or epidemiological evidence exists to justify classification of zinc 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 contact.
Chronic exposure:	It may cause harmful effects on respiratory system, digestive system and circulatory system. May cause minor, reversible health effects on the lungs. Long-term exposures to high concentrations of dusts may increase mucous flow in the nose and airways, anemia, swelling or other skin eruptions.
Other information:	No more information available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:	Very toxic to aquatic life with long lasting effects. 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:	Zinc and zinc compounds 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. Avoid release to the environment.
Contaminated packaging:	Dispose of the packaging in accordance with all government regulations.

SECTION 14: TRANSPORT INFORMATION

IMDG:	Regulated. UN No.: 3077 Hazard Class: 9 Packing Group: III Marine Pollutant: Yes Proper Shipping name: Environmentally Hazardous Substance, Solid, N.O.S.(Zinc Sulfate) Pictograms:
-------	---



Safety Data Sheet

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

KIRNS

Number: MSDS-0003-EN	Version number: V.07	Date of issue: February 27, 2015
Supersedes version: V.06	Supersedes date: March 2, 2015	Page: 5 of 5

Zinc Sulfate Monohydrate



ADR/RID:

Regulated.

UN No.: 3077

Hazard Class: 9

Packing Group: III

Proper Shipping name: Environmentally Hazardous Substance, Solid, N.O.S.(Zinc Sulfate)

ITAT:

Regulated.

UN No.: 3077

Hazard Class: 9

Packing Group: III

Proper Shipping name: Environmentally Hazardous Substance, Solid, N.O.S.(Zinc Sulfate)

SECTION 15: REGULATORY INFORMATION

China:

1) GB 12268-2005 List of Dangerous goods: Not regulated.

2) List of Acute Toxic Chemicals (2002): Not regulated.

3) List of Severely Restricted Toxic Chemicals for Export and Import: Not regulated.

4) GB 18218-2009 Identification of major hazard installations for dangerous chemicals: Not regulated.

5) China's inventory of existing chemical substances (IECSC) 2013: Listed

Other countries:

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

SECTION 16: ADDITIONAL INFORMATION

Training advice:

Provide adequate information, instructions and training for operators.

Revision information:

Version number: V.07

Supersedes version: V.06

Date of issue: February 27, 2015

Supersedes date: March 2, 2015

Changes/Modifications:

SECTION 15: REGULATORY INFORMATION

a) Add information on GB 18218-2009 Identification of major hazard installations for dangerous chemicals

b) Add information on China's inventory of existing chemical substances (IECSC) 2013

End of SDS

