

Safety Data Sheet

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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.

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.
Not classified as other hazards.

Other Hazards:



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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation: Substance
Ingredient: Zinc Sulfate Monohydrate
Formula: $ZnSO_4 \cdot H_2O$
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.
Engineering controls: Use adequate exhaust ventilation to keep airborne concentrations below the allowable



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Respiratory protection:	exposure limits. 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.
Eye damage/irritation:	Causes serious eye damage.



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



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

DOT (U.S.): DOT Shipping Name: **Environmentally Hazardous Substance, Solid, N.O.S.(Zinc Sulfate)**
DOT Hazardous Class: **9**
DOT UN Number: **UN3077**
DOT Packing Group: **III**
DOT Reportable Quantity (lbs): **1,000 lbs**
Note: **Material is restricted only if packaged size exceeds 50 KG. Marine pollutant when shipped by vessel or when in containers greater than 119 gallons.**
Marine Pollutant: **Yes**

TDG (Canada): TDG Shipping Name: **Environmentally Hazardous Substance, Solid, N.O.S.(Zinc Sulfate)**
Hazard Class: **9**
UN Number: **UN3077**
Packing Group: **III**
Note: **Only regulated for TDG under class 9 if intended for disposal. Marine Pollutant designation is applicable only if shipped over water.**
Marine Pollutant: **Yes.**

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

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End of SDS

