



# STAR GRACE MINING CO., LIMITED

ADD: 29-67, NO.929, XINAN ROAD, SHAHEKOU DISTRICT, DALIAN, LIAONING, CHINA  
E-mail: [maggiewang@magnesium-fertilizer.com](mailto:maggiewang@magnesium-fertilizer.com) Web: [www.magnesium-fertilizer.com](http://www.magnesium-fertilizer.com)  
Tel: +86 0411-62672278 Fax: +86 0411-6263 1121

## MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION

**Product Name :** ZINC SULPHATE HEPTAHYDRATE

**Other Names :** ZINC SULPHATE (ZnSO<sub>4</sub>) HEPTAHYDRATE ; SULPHURIC ACID, ZINC SALT (1:1), HEPTAHYDRATE

**Uses :** Rayon manufacture, dietary supplement, animal feeds, mordant, wood preservative, analytical reagent.

### 2. HAZARD IDENTIFICATION

**Hazardous according to criteria of NOHSC/ASCC**

IRRITANT NO HARM

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA website [www.ermanz.govt.nz](http://www.ermanz.govt.nz) should be consulted for a full list of triggered controls and cited regulations

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportions (%)
ZINC SULPHATE HEPTAHYDRATE	[ 7446-20-0]	>96

### 4. FIRST AID MEASURES

**Description of necessary measures according to routes of exposure**

#### Swallowed

Rinse mouth out with water. Give plenty of water to drink. Do NOT induce vomiting. If symptoms persist, contact a doctor.

#### Eye

Immediately flush eyes with plenty of water holding eyelids open. If irritation persists, consult a doctor.

#### Skin

Remove contaminated clothing. Wash affected area with non-abrasive soap and plenty of water. If irritation persists, repeat flushing and contact a doctor.

#### Inhaled

Remove victim from exposure to fresh air. If rapid recovery does not occur, consult a doctor.



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## Advice to Doctor

Treat symptomatically based on judgement of doctor and individual reactions of patient.

## Additional Information

### Aggravated medical conditions caused by exposure

No information available on medical conditions which are aggravated from exposure to this product.

## 5. FIRE FIGHTING MEASURES

### Extinguishing Media

In case of fire, use appropriate extinguishing media most suitable for surrounding fire conditions.

### Hazards from Combustion Products

Non-combustible Solid. There is no risk of an explosion from this product under normal circumstances if it is involved in a fire. Decomposes (loses water of crystallization) about 100°C before melting. Decomposition products include water and anhydrous zinc sulphate.

### Special protective precautions and equipment for fire fighters

Fire fighters should wear a self contained breathing apparatus and full protective clothing along with protective equipment.

### Flammability Conditions

Product is a non-flammable solid.

## Additional Information

Hazchem Code : N/A

## 6. ACCIDENTAL RELEASE MEASURES

### Emergency procedures

Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Increase ventilation. Stop leak if safe to do so. Avoid generating dust. Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management. Use spark-proof tools and equipment.

### Methods and materials for containment and clean up

Contain and sweep/shovel up spills with dust binding material or use an industrial vacuum cleaner. Transfer to a dry, suitable, labelled container and hold for safe disposal. Once pick up is complete, flush spill site with plenty of water to eliminate any residue. Hold contaminated water for treatment.



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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment.

### Conditions for safe storage, including any incompatibles

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from sources of ignition. Protect from direct sunlight and moisture. This product is not classified dangerous for transport according to The Australian Code for the Transport of Dangerous Goods by Road and Rail.

### Container Type

Store in original packaging as approved by manufacturer.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### National Exposure Standards

No exposure standard has been established for this product by the Australian National Occupational Health and Safety Commission (NOHSC). However, the exposure standard for dust not otherwise specified is 10mg/m<sup>3</sup> (for inspirable dust) and 3mg/m<sup>3</sup> (for respirable dust).

### Biological Limit Values

No information available on biological limits for this product.

### Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

### Personal Protection

RESPIRATOR: Wear an effective dust mask if there is a significant chance that dusts are likely to build up. EYES: Safety glasses with side shields approved to EN166. HANDS: Wear impervious gloves. CLOTHING: Wear chemical resistant coveralls and safety footwear.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

white to slightly yellow crystalline solid

### Formula

H<sub>2</sub>O<sub>4</sub>S<sub>7</sub>H<sub>2</sub>O<sub>2</sub>Zn

### Odour

odourless

### Vapour Pressure

Not Applicable



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Vapour Density	Not Applicable
Boiling Point	N/A deg C
Melting Point	Decomposes 100'C deg C
Solubility in water	58g/100mL (25'C) g/l (25 deg C)
Specific Gravity	1.97 (Water = 1)
Flash Point	N/A
pH	Not Applicable
Flammability Limits (as percentage volume in air)	
Lower Explosion Limit	Not Applicable
Upper Explosion Limit	Not Applicable
Ignition Temperature	Not Applicable
Specific Heat Value	Not Applicable
Particle Size	Not Applicable
Volatile Organic Compounds (VOC) content	Not Applicable
Evaporation Rate	Not Applicable
Viscosity	Not Applicable
Percent Volatile	No Data
Octanol/Water partition coefficient	Not Applicable
Saturated Vapour Concentration	Not Applicable
Additional Characteristics	Not Applicable
Flame Propagation/Burning Rate of Solid Materials	Not Applicable
Properties of materials that may initiate or contribute to fire intensity	Not Applicable
Potential for Dust Explosion	Not Applicable
Reactions that Release Flammable Gases	Not Applicable
Fast or Intensely Burning Characteristics	Not Applicable
Non-flammables that could contribute unusual hazards to a fire	Not Applicable
Release of invisible flammable vapours and gases	No Data
Decomposition Temperature	No Data

## Additional Information

### 10. STABILITY AND REACTIVITY

**Chemical Stability** : Product is stable under normal conditions of use and storage.

**Conditions to avoid** : Avoid excessive heat, dusty conditions, static discharges, moisture and high temperatures.

**Incompatible Materials** : Incompatible with sources of ignition.

**Hazardous Decomposition Products** : Product may emit water and anhydrous zinc sulphate.

**Hazardous Reactions** : This product will not undergo polymerization reactions.



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## 11. TOXICOLOGICAL INFORMATION

### Toxicity Data

In general, zinc is considered to be a low toxicity metal. Zinc is a very important trace element for humans. It is an important component of many enzymes and other proteins and has an essential role in many processes of normal growth and development. For zinc compounds, including zinc sulphate, a number of reversible harmful effects (red and white blood cell deficiencies (anaemia and leukopenia), headache, stomach symptoms and copper deficiency) can result from long-term ingestion, based on non-occupational human reports and animal information. Zinc can accumulate in the body. Intestinal absorption of zinc can vary widely following oral administration (in animals ranges of <10 to >90% are reported) and is influenced by age and a number of dietary factors. Zinc is stored mainly in the muscle and bone, and also in the prostate, liver, gastro-intestinal tract, kidneys, skin, lung, brain, heart and pancreas. In humans ingesting normal amounts of zinc, the reported half-lives were from 100-500 days. The body regulates the amount of zinc stored by decreasing absorption and increasing excretion (mainly via faeces) when intake increases.

### Health Effects - Acute

#### Swallowed

Ingestion of this product may cause headache and gastric disturbance such as nausea and vomiting. Zinc sulphate is an emetic (cause vomiting). Ingestion of large doses may cause anaemia and stomach symptoms with abdominal pain, diarrhoea and in severe cases, vomiting of blood.

#### Eye

Product is an eye irritant. Causes stinging and reddening of eyes and watering may become copious. Lengthy exposure or delayed treatment may cause permanent damage.

#### Skin

Product is a skin irritant. Causes itchiness and reddening of contacted skin.

#### Inhaled

Long term inhalation of high amounts of any nuisance dust may overload lung clearance mechanism.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** : No Data

**Persistence and degradability** : No information available on persistence/degradability for this product.

**Mobility** : No information available on mobility for this product.

### Additional information

**Environmental fate (exposure)** : Avoid contaminating waterways, drains and sewers.



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**Bioaccumulative potential** : No information available on bioaccumulation for this product.

## 13. DISPOSAL CONSIDERATIONS

### Disposal

Dispose of in accordance with all local, state and federal regulations.

### Special Precautions for land fill or incineration

The waste code classification is to be carried out according to the European Waste Catalogue (EWC) specifically for each branch of industry and each type of process.

## 14. TRANSPORT INFORMATION

UN No.	Not Allocated
Shipping Name	ZINC SULPHATE HEPTAHYDRATE
Dangerous Goods Class	None Allocated
Subsidiary Risk	None Allocated
Pack Group	None Allocated
Precaution for User	IRRITANT
Hazchem Code	N/A

## 15. REGULATORY INFORMATION

Poisons Schedule	6
EPG	N/A
AICS Name	SULPHURIC ACID, ZINC SALT (1:1), HEPTAHYDRATE
NZ Toxic Substance	N
Additional information	No Data

## 16. OTHER INFORMATION

### Additional information

### Legend to abbreviations and acronyms:

<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
CO <sub>2</sub>	Carbon Dioxide
COD	Chemical Oxygen Demand
ERMA	Environmental Risk Management Authority



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HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for "Lethal Dose". LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
Misc	miscible
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
UN	United Nations (number)
cm <sup>2</sup>	square centimetres
deg C ( °C )	degrees Celsius
g	gram
g/cm <sup>3</sup>	grams per cubic centimetre
g/l	grams per litre
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m <sup>3</sup>	kilograms per cubic metre
ltr	Litre
m <sup>3</sup>	cubic metre
mPa.s	milli Pascal per second
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m <sup>3</sup>	milligrams per cubic metre
miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
tne	tonne
ug/24H	micrograms per 24 hours
wt	weight