# Safety Data Sheet

## Cupric Sulfate Anhydrous

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

**Product Identifier**

Product form: Substance

Substance name: Cupric Sulfate Anhydrous

CAS No.: 7758-98-7

Formula: CuSO4

Synonyms: Copper( Ⅱ ) Sulfate (Sulphate)

**Intended Use Of The Product**

Use of the substance/mixture: Mineral nutrient additives for supplement, food and feed industry.

**Name, Address, And Telephone Of The Responsible Party**

Name: Shin-Yo Co., Ltd.

Address: 2027-1 Kitaono, Shiojiri, Nagano 399-0651, JAPAN

Telephone: (81) 266-46-2058

**Emergency telephone number**

Please contact the Distributer in your country

### SECTION 2: Hazards identification

**Classification of the substance or mixture**

**Other hazards**

No additional information available

**Unknown acute toxicity (GHS US)**

No data available

### SECTION 3: Composition/information on ingredients

Substances

| Name | Product Identifier | % | |
|---|---|---|---|
| Cupric Sulfate Anhydrous | (CAS No.) 7758-98-7 | 100 | |

### SECTION 4: First aid measures

**Description of first aid measures**

First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if

possible).

| | |
|---|---|
| First-aid measures after inhalation: | When symptoms occur: go into open air and ventilate suspected area. Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell. |
| First-aid measures after skin contact: | Wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse. |
| First-aid measures after eye contact: | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| First-aid measures after ingestion: | Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do Not induce vomiting unless directed to do so by medical person. |

**Most important symptoms and effects, both acute and delayed**

| | |
|---|---|
| Symptoms/injuries: | Eye irritation. |
| Symptoms/injuries after inhalation: | When inhaling a large quantity of mine dust, it results in zinc heat and may cause symptoms such as nausea, vomiting, fever, fatigue, arthralgia, the leukocyte increase. This material is expelled outside a body in a short term, and there is nothing becoming chronic. |
| Symptoms/injuries after eye contact: | Causes serious eye irritation. |
| Symptoms/injuries after ingestion: | Ingestion may cause nausea, vomiting and diarrhea. |

**Indication of any immediate medical attention and special treatment needed**

If medical advice is needed, have product container or label at hand.

## SECTION 5: Firefighting measures

**Extinguishing media**

Suitable extinguishing media: Water, powder, carbon dioxide, foam.

Unsuitable extinguishing media: None.

**Special hazards arising from the substance or mixture**

Fire hazard: The substance does not burn.

Explosion hazard: The substance is not explosive.

Reactivity: None.

**Advice for firefighters**

Firefighting instructions: Use water spray for cooling containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from being drained to environment.

Protection during firefighting: An anti-dust mask, a protection gloves, and protection clothing are surely worn.

## SECTION 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

General measures: Avoid breathing powder and mist. Handle it outside doors or in well-ventilated area. Handle in accordance with good industrial hygiene and safety practice.

**For non-emergency personnel**

Protective equipment: An anti-dust mask, a protection gloves, eye/face protection and protection clothing are surely worn during handling.

Emergency procedures: Exclude unnecessary personnel from the area.

**For emergency responders**

Protective equipment: An anti-dust mask, a protection gloves, eye/face protection and protection clothing are surely worn during handling.

Emergency procedures: Handle and waste the spills in a ventilated area.

**Environmental precautions**

When it solves in water, collect the solution. After making this product precipitated with neutralizer, perform disposal process. Avoid the product to enter drains, drinking water ways, sewage system, and ground water.

**Methods and material for containment and cleaning up**

For containment: Collect the spills in a suitable container.

Methods for cleaning up: Clear up spills immediately and dispose of waste safely.

**Reference to other sections**

See heading 8, Exposure Controls and Personal Protection.

## SECTION 7: Handling and storage

**Precautions for safe handling**

**Additional hazards when processed**: None.

**Precautions for safe handling**: An anti-dust mask, protection gloves, eye/face protection and protection clothing are surely worn during handling.

**Hygiene measures**: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating,

drinking, or smoking and again when leaving work.

**Conditions for safe storage, including any incompatibilities**

**Technical measures**: None.

**Storage conditions**: Seal a container tightly and store the product in a cool and dry area.

**Incompatible products**: None.

**Incompatible materials**: None.

**Storage area**: The warehouse locked is desirable. Cool and dry place without direct rays is desirable.

**Special rules on packaging**: Use Polyethylene or polypropylene bag to avoid moisture absorption.

## SECTION 8: Exposure controls/personal protection

**Control parameters**

| Cupric Sulfate Anhydrous (CAS #: 7758-98-7) |
|---|
| USA AC GIH: Not set up |

**Exposure controls**

**Appropriate engineering controls:** Ensure adequate ventilation, especially in confined areas. Avoid inhalation of dust. Keep containers closed when not in use. An anti-dust mask, protection gloves, eye/face protection and protection clothing are surely worn during handling. Wash hands and face after handling. Wash clothing and clean shoes before reuse. Equip the partial exhaust or a dust catcher in a handling area.

**Personal protective equipment:**

**Hand protection:** Protection gloves.

**Eye protection:** Safety glasses or goggles.

**Skin and body protection:** Protective clothing.

**Respiratory protection:** Anti-dust mask.

**Thermal hazard protection:** Wear suitable protective clothing.

**Other information:** Do not eat, drink and smoke at handling.

## SECTION 9: Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| Chemical name | Copper Sulfate Anhydrous |
| Chemical formula | CuSO4 |
| Molecular weight | 159.6 |

| | |
|---|---|
| Percent equivalent | CuSO4: 100% |
| Physical state: | Solid Powder |
| Appearance: | Grayish White Powder |
| Color: | Grayish White |
| Odor: | Odor less |
| Odor threshold: | No data available |
| Density: | 3.61 g/ml |
| Solubility: | ～18 wt% in water (25℃ as anhydrous) |
| pH: | not colored pink by M/O TS (～4 at saturated solution) |
| Freezing point: | No data available |
| Melting point: | No data available |
| Boiling point: | No data available |
| Decomposition Temperature: | 250℃(loses water) |
| Flammability : | No data available (non-flammable) |
| Flash Point: | No data available |
| Other information: | No additional information available |

## SECTION 10: Stability and reactivity

### Reactivity

Deliquescent and easily transforms to hydrate salts getting water molecules in humid condition. Reacts on exposure to water/moisture with more reactive metals, iron and zinc. On burning: release of toxic and corrosive gases/vapors (sulfur oxides) and formation of metallic fumes. Reacts exothermically with some compounds resulting in increased risk of fire. Reacts violently with strong reducers.

### Chemical Stability

Stable under normal conditions.

### Hazardous Polymerisation

Hazardous polymerization will not occur.

### Hazardous Decomposition Products

Hazardous decomposition products, sulfur oxide and metallic copper fumes, are formed under high temperature conditions, such as fire condition, electric arc discharge, and so on.

### Conditions To Avoid

Humid air. Excess heat. Static discharge and dust generation. Avoid exposure to high temperature with high humidity and with direct rays. Do not expose to moist air. Do not contact with metal, hydroxylamine, magnesium.

**Incompatible Materials**

Strong basis. Moisture. Finely powdered metal. Will corrode steel. Reacts violently with hydroxylamine and magnesium.

## SECTION 11: Toxicological information

**Information on toxicological effects**

Acute toxicity: (Oral) Harmful if swallowed.

(Skin) No Data

| Cupric Sulfate Anhydrous(7758-98-7) | |
|---|---|
| LD50 oral rat | 300 mg/kg (EHC200, 1998) |

**Skin corrosion/irritation**: Skin irritation.

**Serious eye damage/irritation**: Strong irritation to eyes. By exposure to eyes, the cornea become gray and the spot remain at the lens after the recovery. (CERI Hazard Data 2001-59)

**Respiratory or skin sensitization**: Not classified

**Germ cell mutagenicity**: Dominant lethal test Negative, Mutagenicity test for body cell in vivo and chromosomal aberration test Positive. (ATSDR, 2004)

**Carcinogenicity**: Not classified

**Reproductive toxicity**: Abnormalities are not accepted.

**Specific target organ toxicity (single exposure)**: Toxic to the blood system, liver, nervous system and kidney.
Toxic to the respiratory tract irritation.

**Specific target organ toxicity (repeated exposure)**: Toxic to the blood system and respiratory organ)

**Aspiration hazard**: Not classified

**Symptoms/injuries after inhalation**: When inhaled a large quantity of zinc sulfate dusts, it results in symptoms such as nausea, vomiting, fever, fatigue, joint pain, and white blood cell increasing. They are exhausted outside a body in a short term, and there is no effect becoming chronic.

**Symptoms/injuries after eye contact**: Causes serious eye irritation.

**Symptoms/injuries after ingestion**: Ingestion may cause nausea, vomiting and diarrhea.

## SECTION 12: Ecological information

**Toxicity**

| Cupric Sulfate Anhydrous (7758-98-7) | |
|---|---|
| LC50 | LC50 (Crustacea (Daphnia magna)), 48hours = 0.007mg/l as Cu, (0.018mg/l as CuSO4) (CERI Hazard Data, 2002) |

**Persistence and degradability**

| Cupric Sulfate Anhydrous (7758-98-7) | |
|---|---|
| Persistence and degradability | Readily biodegradable in water. Not established. |

**Bio accumulative potential**

| Cupric Sulfate Anhydrous (7758-98-7) | |
|---|---|
| BCF fish 1 | No data |
| Log Kow | No data |
| Bio accumulative potential | No data |

**Mobility in soil**

No additional information available

**Other adverse effects**

**Hazardous to the aquatic environment (Acute)**: Category 1

**Hazardous to the aquatic environment (Chronic)** : Classified Category 1, since acute toxicity was Category 1, and it is a metallic compound, behavior in water is unknown., though less bio accumulative (BCF=242 (existing chemical safety inspections data)).

**Other information**: Avoid release to the environment.

## SECTION 13: Disposal considerations

**Waste treatment methods**

Do not allow this material to drain into public water supplies.

It is desirable to have a specific contractor treat this material, or to return a shipping agency as for abandonment.

When carrying out abandonment processing, it should be conducted by following methods.

The precipitating method: This material solves in water, and the solution is neutralized and precipitated by adding slaked lime, soda and soda ash. Then the filtrated precipitates can be disposed..

The roasting method: When abundant, it is collected as metal copper by the reductive roasting process.

## SECTION 14: Transport information

**Notes**

Put this material into the container hard to damage, and convey. When the container is damaged, spills should be collected as much as possible. It is good practice to separate this material from food, food related materials, animal feed-stuffs, seed or fertilizers during transport.

## SECTION 15: Regulatory information

**Labelling according to EC Directives**

| | | |
|---|---|---|
| Symbol : | Xn | Harmful |
| | N | Dangerous for the environment |
| R-phrases : | 22-36/38-50/53 | Harmful if swallowed. Irritating to eyes and skin. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |
| S-phrases : | 22-60-61 | Do not breathe dust. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instruction safety data sheets. |
| EC-No. : | 029-004-00-0 | |

## SECTION 16: Other information

**Other information:**

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Since all data or references were not investigated, there may be an intelligence leak. Moreover, change arises by the contents by the announcement of new knowledge, or correction of the conventional opinion.