

# SAFETY DATA SHEET

Date Printed: 09/22/2024

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Copper(II) Sulfate

**Product Code:** CU2-SAT-05

**CAS Number:** 7758-98-7

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral(Category 4), H302

Skin irritation(Category 2), H315

Eye irritation(Category 2A), H319

Acute aquatic toxicity(Category 1), H400

Chronic aquatic toxicity(Category 1), H410

GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

H315

Causes skin irritation.

H319

Causes serious eye irritation.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P264

Wash skin 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.

P280

Wear protective gloves.

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

Rinse mouth.

P302 + P352

IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332 + P313

If skin irritation occurs: Get medical advice/ attention.

P337 + P313

If eye irritation persists: Get medical advice/ attention.

P362

Take off contaminated clothing and wash before reuse.

P391

Collect spillage.

P501

Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

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none

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances

Synonyms: Cupric sulfate

Formula:  $\text{CuO}_4\text{S}$

Molecular weight: 159.61 g/mol

CAS-No.: 7758-98-7

EC-No.: 231-847-6

Index-No.: 029-004-00-0

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

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## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Air sensitive.

hygroscopic

Store under inert gas.

Keep in a dry place.

Storage class (TRGS 510): Non Combustible Solids

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Information on basic physical and chemical properties

Appearance

Form: powder

Color: light grey

Odor

No data available

Odor Threshold

No data available

pH

No data available

Melting point/freezing point

Melting point/range: 200 °C (392 °F)-dec.  
Initial boiling point and boiling range  
No data available  
Flash point  
N/A  
Evaporation rate  
No data available  
Flammability (solid, gas)  
No data available  
Upper/lower flammability or explosive limits  
No data available  
Vapor pressure  
9.7 hPa (7.3 mmHg) at 25 °C (77 °F)  
Vapor density  
No data available  
Relative density  
3.603 g/mL at 25 °C (77 °F)  
Water solubility  
No data available  
Partition coefficient: n-octanol/water  
No data available  
Auto-ignition temperature  
No data available  
Decomposition temperature  
No data available  
Viscosity  
No data available  
Explosive properties  
No data available  
Oxidizing properties  
No data available  
Other safety information  
Bulk density  
1 kg/m<sup>3</sup>

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
No data available  
Chemical stability  
Stable under recommended storage conditions.  
Possibility of hazardous reactions  
No data available  
Conditions to avoid  
No data available  
Incompatible materials  
Powdered metals, hydroxylamine, Magnesium, Strong reducing agents  
Hazardous decomposition products  
Hazardous decomposition products formed under fire conditions.-Sulphur oxides, Borane/boron oxides, Copper oxides  
Other decomposition products-No data available  
In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

LD50 Oral-Rat-482 mg/kg

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal-Rat-20 mg/kg

LD50 Subcutaneous-Rat-43 mg/kg

LD50 Intravenous-Rat-48.9 mg/kg

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Rat

Liver

DNA damage

Mouse

DNA damage

Carcinogenicity

Carcinogenicity-Chicken-Parenteral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Endocrine: Tumors.

IARC:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP:

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Reproductive toxicity-Mouse-Intravenous

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

No data available

Developmental Toxicity-Mouse-Intravenous

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities:

Central nervous system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Specific target organ toxicity -single exposure

No data available

Specific target organ toxicity -repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: GL8800000

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak

pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach-Irregularities-Based on Human Evidence

Stomach-Irregularities-Based on Human Evidence

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Toxicity to fish

mortality LC50-other fish-1 -2.5 mg/l-96.0 h

Toxicity to daphnia and other aquatic invertebrates

Immobilization EC50-Daphnia magna (Water flea)-0.024 mg/l-48 h

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contact a licensed professional waste disposal service to dispose of this material.

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

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## **SECTION 14. TRANSPORT INFORMATION**

DOT (US)

UN number: 3077

Class: 9

Packing group: III

Proper shipping name: Environmentally hazardous substances, solid, n.o.s.(Copper sulphate)

Reportable Quantity(RQ): 10lbs

Marine pollutant: yes

Poison Inhalation Hazard: No

IMDG

UN number: 3077

Class: 9

Packing group: III

EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Copper sulphate)

Marine pollutant: yes

IATA

UN number: 3077

Class: 9

Packing group: III

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.(Copper sulphate)

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## **SECTION 15. REGULATORY INFORMATION**

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper sulphate

CAS-No.

7758-98-7

Revision Date

1993-04-24

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Copper sulphate

CAS-No.

7758-98-7

Revision Date

1993-04-24

Pennsylvania Right To Know Components

Copper sulphate

CAS-No.

7758-98-7

Revision Date

1993-04-24

New Jersey Right To Know Components

Copper sulphate

CAS-No.

7758-98-7

Revision Date

1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.