



SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Copper (II) Sulfate Hydrate**
 PRODUCT NUMBER: 1591-2
 CAS NUMBER: 23254-43-5
 SYNONYMS: Cupric sulfate hydrate, sulfuric acid, copper(2+)salt
 MANUFACTURER:

ProcChem, Inc.
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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram



Signal Word.

Danger

Hazard Statements

H301	Toxic if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage
H335	May cause respiratory irritation
H410	Very toxic to aquatic life with long lasting effects.

Precautionary Phrases

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink, or smoke when using this product.
P273	Avoid release into the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call POISON CENTER
P362	Take off contaminated clothing and wash before reuse

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

HMIS CLASSIFICATION:

Health: 2 Chronic: * Fire: 0 Reactivity Hazard: 0

NFPA RATING:

Health: 2 Flammability: 0 Reactivity Hazard: 0

EYE CONTACT: Causes serious eye damage

SKIN CONTACT: Causes slight to mild irritation of the skin.

INHALATION: Irritating to the nose, mucous membranes, and respiratory tract.

INGESTION: Harmful if swallowed. Get medical attention. Ingestion of copper compounds may lead to vomiting, exhaustion, anemia, convulsions, and coma.

CHRONIC HEALTH EFFECTS: The dust of copper compounds may cause metal fume fever, hemolysis of the red blood cells, and injury to the liver, lung, kidneys, and pancreas.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: $\text{CuSO}_4 \cdot \text{XH}_2\text{O}$

Molecular Weight: 159.61 (anhy.)

CHEMICAL NAME	CAS#	%
Copper (II) sulfate hydrate	23254-43-5	99.9

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate competent medical attention.

SKIN EXPOSURE: Wash affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.

INHALATION: Remove to fresh air. Closely monitor the victim for signs of respiratory problems. Such as, difficulty in breathing, coughing, wheezing, or pain. In such cases, seek immediate medical assistance.

INGESTION: Seek medical assistance immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: Product is not flammable

AUTO IGNITION TEMPERATURE: Not available

EXPLOSION LIMITS: Not available

EXTINGUISHING MEDIUM: Use fire fighting measures that suit the surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Sulfur oxides and copper oxide

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate personal protective equipment when using this material. Ensure adequate ventilation. Avoid the formation of dust. Avoid breathing vapors, mist, gas, or dust.

ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains or allowing to be released into the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Pick up and arrange disposal without creating dust. Sweep up and keep in suitable, closed containers for disposal.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Avoid contact with skin and eyes. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts and aerosols.

SECTION 7 HANDLING AND STORAGE. (Cont.)

Handle under dry inert gas.

CONDITIONS FOR SAFE STORAGE: Store in cool, dry well ventilated area. Keep away from incompatible materials. Hygroscopic and air sensitive. Store under dry inert gas.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS:

Component	Exposure Limits	Basis	Entity
Copper Sulfate hydrate	1 mg/m ³	REL	NIOSH

REL: Recommended Exposure Limit

EYE PROTECTION: Wear chemical safety glasses or goggles and face shield.

SKIN PROTECTION: Wear nitrile or rubber gloves, and a complete suit protecting against chemicals.

VENTILATION: Provide local exhaust, preferably mechanical.

RESPIRATOR: Use an approved respirator.

ADDITIONAL PROTECTION: Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Blue crystalline solid

ODOR: None

MOLECULAR WEIGHT: 159.61 (anhy.)

BOILING POINT: No data available

MELTING POINT: 110° C (dec.)

SPECIFIC GRAVITY: 2.27

VAPOR DENSITY: No data available

SOLUBILITY: Soluble

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Exposure to moisture

INCOMPATIBILITY: Powdered metals, anhydrous copper (II) sulfate, and oxidizing agents. Reacts violently with: hydroxylamine, magnesium

DECOMPOSITION PRODUCTS: Sulfur oxides and copper oxide

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: LD50 Oral – rat – 481 mg/kg

CARCINOGENIC EFFECTS: No components of this product present at levels greater than or equal to 0.1% is identified a carcinogen.

MUTAGENIC EFFECTS: Possible risk of congenital malformation in the fetus

TETRATOGENIC EFFECTS: Not available

CHRONIC TOXICITY: Not available

RTECS: GL8900000

Additional Information

Symptoms of systemic copper poisoning may includes: 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 led 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

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 ECOLOGICAL DATA

TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES: EC50 – Daphnia magna (water flea) 0.092 mg/l – 48h. LC50 (Oncorhynchus mykiss (rainbow trout)): 0.032 mg/l 96h. Very toxic for aquatic life.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

UN3077

Environmentally hazardous substances, solid, n.o.s.

(Copper (II) sulfate hydrate)

CLASS 9

PG III

Marine Pollutant: No.

SECTION 15 REGULATORY INFORMATION

TSCA: Listed on the TSCA inventory

SARA 302/304: Not Listed

SARA 311/312: Acute Health Hazard, Chronic Health Hazard

SARA (TITLE 313): Copper (II) sulfate hydrate

CALIFORNIA PROP. 65: Not Listed

MASSACHUSETTS RIGHT TO KNOW COMPONENTS: Copper (II) sulfate hydrate

NEW JERSEY RIGHT TO KNOW COMPONENTS: Copper (II) sulfate hydrate

PENNSYLVANIA RIGHT TO KNOW COMPONENTS: Copper (II) sulfate hydrate

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, Prochem, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.

DATE PREVIOUSLY PREPARED: 12/14

DATE REVISED 08/26

REVISED SUMMARY: Removed fax number. Updated section 2, section 11 and section 15. All other details in this document about this product remained unchanged. Revisions made by EHS 8/10/26.

EHS/SDS Dept.