SAFETY DATA SHEET

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SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Copper (II) Sulfate Pentahydrate**

PRODUCT NUMBER: 1591

CAS NUMBER: 7758-99-8

SYNONYMS: Cupric sulfate pentahydrate, sulfuric acid, copper(2+)salt

MANUFACTURER:

Prochem, Inc.
826 Roosevelt Road
Rockford, IL 61109

PHONE: 815-398-1788
FAX: 815-398-1810
TOLL FREE: 800-795-8788

IN CASE OF TRANSPORTATION EMERGENCY CONTACT CHEM-TREC: 1-800-424-9300

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram

Signal Word **Danger**

Hazard Statements

H301	Toxic if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye 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	IF IN EYES: Rinse cautiously with waster for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P362	Take off contaminated clothing and wash before reuse

HMIS CLASSIFICATION:
Health: 2 Chronic: * Fire: 0 Reactivity Hazard: 0
NFPA RATING:
Health: 2 Flammability: 0 Reactivity Hazard: 0

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

EYE CONTACT: Causes slight to mild irritation to the eyes.
SKIN CONTACT: Causes slight to mild irritation of the skin.
INHALATION: Irritating to the nose, mucous membranes, and respiratory tract.
INGESTION: Harmful if swallowed. 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: $CuSO_4 \bullet 5H_2O$

Molecular Weight: 249.69

CHEMICAL NAME	CAS#	%
Copper (II) sulfate pentahydrate	7758-99-8	100

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 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. 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 Pentahydrate	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: 249.69
BOILING POINT: No data available
MELTING POINT: 110° C (dec.)
SPECIFIC GRAVITY: 2.27 gm/ml
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 – 300mg/kg. LD50 Dermal – rat - >2,000 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: Not available
TETRATOGENIC EFFECTS: Not available
CHRONIC TOXICITY: Not available
RTECS: GL8900000

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) – 0.024 mg/l – 48h
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 pentahydrate)
CLASS 9
PG III

Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

TSCA: Not listed in the TSCA inventory
SARA 302/304: Not Listed
SARA 311/312: Acute Health Hazard, Chronic Health Hazard
SARA (TITLE 313): Copper (II) sulfate pentahydrate
CALIFORNIA PROP. 65: Not Listed
MASSACHUSETTS RIGHT TO KNOW COMPONENTS: Copper (II) sulfate pentahydrate
NEW JERSEY RIGHT TO KNOW COMPONENTS: Copper (II) sulfate pentahydrate
PENNSYLVANIA RIGHT TO KNOW COMPONENTS: Copper (II) sulfate pentahydrate

SECTION 16 OTHER INFORMATION

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