

SAFETY DATA SHEET

OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012) · GHS Rev. 8

Document PP-SDS-CUSO4-001 · Revision 1 · 25 August 2026 · Supersedes: none

Manufacturer: PrintPlating · Saint Paul, MN 55117 · United States

Product: PrintPlating Copper Sulfate Pentahydrate (electroplating / electroforming electrolyte salt)

Medical emergency (US): Poison Control 1-800-222-1222

Product questions: PrintPlating shop messages (Etsy / Amazon seller account)

Section 1 — Identification

Product name	PrintPlating Copper Sulfate Pentahydrate
Chemical name	Copper(II) sulfate pentahydrate; cupric sulfate pentahydrate; blue vitriol
CAS No.	7758-99-8
EC No.	231-847-6 (anhydrous copper sulfate)
Index No.	029-023-00-4
Formula / MW	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ · 249.69 g/mol
Recommended use	Electrolyte salt for copper electroplating and electroforming of 3D prints and jewelry-scale parts.
Uses advised against	Pesticide, root killer, algicide, pool treatment, food, drug, or household cleaner. Not for children.
Supplier	PrintPlating, Saint Paul, MN 55117, USA (manufacturer / repacker of this SKU)

Section 2 — Hazard identification

Classified as hazardous under OSHA HCS 2012.

DANGER

CORROSION
Eye Dam. 1

EXCLAMATION
Acute Tox. 4

ENVIRONMENT
Aquatic 1

GHS class	Acute toxicity, oral, Category 4 (H302) · Serious eye damage, Category 1 (H318) · Aquatic acute Category 1 (H400) · Aquatic chronic Category 1 (H410)
Hazard statements	H302 Harmful if swallowed. H318 Causes serious eye damage. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.
Prevention	P264 Wash hands thoroughly after handling. P270 Do not eat, drink, or smoke when using. P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing, eye and face protection.
Response	P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. P330 Rinse mouth. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER/doctor. P391 Collect spillage.
Disposal	P501 Dispose of contents/container as hazardous waste per local rules. Do not pour plating baths down household drains.
Other hazards	Solutions are acidic. Dust irritates nose and throat. Toxic to fish and aquatic invertebrates.

Section 3 — Composition / information on ingredients

Component	CAS	Weight %	Classification
Copper(II) sulfate pentahydrate	7758-99-8	≥99	Acute Tox. 4, Eye Dam. 1, Aquatic Acute 1, Aquatic Chronic 1

Oral ATE (ECHA) ≈ 481 mg/kg body weight. M-factor aquatic acute = 10.

Section 4 — First-aid measures

- **Eyes:** Rinse immediately with plenty of water, eyelids open, at least 15 minutes. Remove contact lenses if easy. Get emergency medical care. Causes serious eye damage.
- **Skin:** Wash with plenty of water and soap for 15 minutes. Remove contaminated clothing. Seek medical attention if irritation persists.
- **Inhalation:** Move to fresh air. If not breathing, trained personnel may give artificial respiration. Seek medical attention if symptoms persist.
- **Ingestion:** Rinse mouth. Give water if the person is conscious. Do not induce vomiting unless directed by poison control. Call Poison Control 1-800-222-1222.
- **Most important symptoms:** Eye pain, redness, blurred vision; nausea, vomiting, abdominal pain if swallowed; metallic taste.
- **Note to physician:** Treat symptomatically. Copper salts can cause GI irritation and, in large ingestions, hemolysis and liver/kidney injury.

Section 5 — Fire-fighting measures

Not flammable. Use water spray, CO₂, dry chemical, or foam for surrounding fire. Thermal decomposition may emit sulfur oxides and copper oxides. Firefighters: full PPE and SCBA. Prevent runoff from entering drains or waterways.

Section 6 — Accidental release measures

Avoid dust. Wear gloves, goggles, and a dust mask/P100 if dusty. Sweep or vacuum (HEPA) dry crystals. Do not wash into sewers or surface water. Place in a labeled container for hazardous waste. Ventilate area. Keep people and pets away.

Section 7 — Handling and storage

Handle only as an adult workshop chemical. Use local exhaust or a well-ventilated space. Do not breathe dust. Do not get in eyes. Wash after handling. Store dry, sealed, away from food, children, pets, and reducing agents. Keep bags closed; crystals pick up moisture. Do not mix with household drain cleaners or bleach.

Section 8 — Exposure controls / personal protection

Limit	Value (as copper)
OSHA PEL	1 mg/m ³ (copper dusts and mists); 0.1 mg/m ³ (copper fume)
ACGIH TLV-TWA	1 mg/m ³ (dusts and mists); 0.2 mg/m ³ (fume)

Engineering: ventilation sufficient to keep dust below limits. PPE: chemical splash goggles, nitrile or chemical-resistant gloves, long sleeves, closed shoes. Dust mask if scooping large amounts. Eyewash nearby. Do not wear contact lenses when handling.

Section 9 — Physical and chemical properties

Appearance	Blue crystalline solid / granules	Odor	None
pH (50 g/L, 20 °C)	approx. 3.5–4.5 (acidic)	Melting / decomp.	Loses water ~110 °C; decomposes at higher T
Density	~2.28 g/cm ³	Water solubility	Freely soluble (~300 g/L at 20 °C)
Flash point	Not applicable (inorganic salt)	Flammability	Not flammable

Section 10 — Stability and reactivity

Stable when dry and stored sealed. Avoid moisture caking, heat, and reducing agents (hydroxylamine, hydrazine). Incompatible with finely divided metals in some conditions, acetylene, and strong bases in concentrated mix. Hazardous decomposition: sulfur oxides, copper oxides.

Section 11 — Toxicological information

Acute oral ATE ≈ 481 mg/kg (rat, ECHA). Harmful if swallowed. Causes serious eye damage. Dust irritates respiratory tract. Repeated high oral exposure: liver and kidney effects reported for copper salts. Not classified as a carcinogen by IARC/NTP/OSHA as this substance. Not intended for ingestion. Keep away from children.

Section 12 — Ecological information

Very toxic to aquatic life with long lasting effects (H410). Copper ions are toxic to fish, invertebrates, and algae at low concentrations. M-factor acute = 10. Do not release crystals or spent plating baths to storm drains, septic, or surface water. Collect and dispose as hazardous waste / metal-bearing wastewater per local POTW rules.

Section 13 — Disposal considerations

Unused crystals: hazardous waste (typical US: D002 if characteristic corrosive as solution; copper-bearing). Spent electroplating baths are regulated wastewater — do not dump. Follow state and local rules. Empty bags: triple-rinse if required, then dispose as directed by the local authority.

Section 14 — Transport information

UN number	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (copper sulfate pentahydrate)
Class / PG	9 / III
Marine pollutant	Yes
DOT RQ	10 lb (4.54 kg) as cupric sulfate
Limited quantity / exceptions	May apply to small inner packages. Confirm with your carrier before offering for transport. Amazon FBA and USPS have extra DG rules.

Section 15 — Regulatory information

- TSCA: Copper sulfate is listed (anhydrous CAS 7758-98-7 / hydrate 7758-99-8 as relevant).
- CERCLA: Cupric sulfate RQ 10 lb.
- SARA 313: Copper compounds.
- FIFRA: This product is **not** registered as a pesticide. Do not sell or use as root killer, fungicide, or algicide.
- California Proposition 65: Copper (in some listings) — check current Prop 65 list; this SDS does not add a warning unless your counsel requires one.

Section 16 — Other information

NFPA (estimated): Health 2 · Flammability 0 · Instability 0. HMIS: 2 / 0 / 0 · PPE X (see Section 8).

Hazard statement text: H302, H318, H400, H410 as in Section 2. Prepared for PrintPlating SKUs (500 g, 3000 g, and the sulfate packed in the starter kit). Classification follows published OSHA/GHS data for $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ (Eye Dam. 1 / Acute Tox. 4 / Aquatic 1). This sheet does not replace training or PPE.

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