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MATERIAL SAFETY DATA SHEET

Product: Copper Sulphate Pentahydrate (98–100%) (SAMPLE-CSP-001) — Generated 2026-10-15T19:04:34.191Z — Ruleset ghs-purple-book-rev9-2021.v1 — Revision 2

Section 1: Identification

Product name: Copper Sulphate Pentahydrate (98–100%)

Recommended use: Industrial and laboratory use as a source of copper (sample use description).
Restrictions on use: None identified for the intended use. Not for food, feed or drug use.

Destination countries: European Union, United Kingdom, United States
Transport modes / packaging: Road, sea, air / 25 kg HDPE-lined bags

Company: Sample Chemicals Co. (demo)
Address: 12 Example Industrial Road, Sample City 00000
Emergency phone: +1 000 000 0000
General phone: +1 000 000 0001

Emergency provider: Sample Emergency Desk
Availability / languages: 24 hours, 7 days a week / English
SDS contact: sds@example.com
Supplier country: Sampleland

Revision number: 2

Section 2: Hazard(s) Identification

Danger

Harmful/Irritant

Corrosive

Environmental Hazard

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

Precautionary Statements

- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
- P330: Rinse mouth.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- 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 or doctor.
- P273: Avoid release to the environment.
- P391: Collect spillage.
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

This classification reflects only the hazard data present in the sourced component records at the time of generation. A hazard class not listed above has not been independently tested or ruled out by this process — confirm against the component manufacturer's own classification before relying on this list as complete.

Section 3: Composition / Information on Ingredients

Chemical Name	CAS Number	Concentration Range
Copper Sulphate Pentahydrate	7758-99-8	98–100%

Section 4: First-Aid Measures

EYES: First check the victim for contact lenses and remove if present. Flush eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the eyes without specific instructions from a physician. Transport to a hospital immediately after flushing even if no symptoms develop.

In all cases, if exposed or concerned, get medical advice/attention. Source: Copper Sulphate Pentahydrate (PubChem Safety and Hazards data).

Section 5: Fire-Fighting Measures

If material involved in fire: extinguish using an agent suitable for the type of surrounding fire (the material itself does not burn or burns with difficulty).

Source: Copper Sulphate Pentahydrate (PubChem Safety and Hazards data).

Suitable extinguishing media: Not available from the selected sources. Data gap, not a finding.

Unsuitable extinguishing media: Not available from the selected sources. Data gap, not a finding.

Section 6: Accidental Release Measures

Land spill: dig a pit, lagoon, or holding area to contain liquid or solid material. Cover solids with a plastic sheet to prevent dissolving in rain or fire-fighting water.

Avoid release to the environment (see P273 if applicable). Source: Copper Sulphate Pentahydrate (PubChem Safety and Hazards data).

Section 7: Handling and Storage

Well closed. Store only in original container. Store in an area without drain or sewer access.

Source: Copper Sulphate Pentahydrate (PubChem Safety and Hazards data).

Section 8: Exposure Controls / Personal Protection

Component	OSHA PEL	NIOSH REL	IDLH
Copper Sulphate Pentahydrate	1 mg/m3 TWA (as Cu, dusts and mists)	1 mg/m3 TWA (as Cu, dusts and mists)	100 mg/m3 (as Cu)

Wear protective gloves/protective clothing/eye protection/face protection (P280) as assigned in Section 2.

Section 9: Physical and Chemical Properties

Physical state	solid
Appearance	Blue crystalline granules or powder
Odor	Not available from the selected sources.
pH	3.7-4.5 (50 g/L solution, 25C)
Melting point	110°C
Boiling point	Not available from the selected sources.
Flash point	Not available from the selected sources.
Density	2.286 g/cm3
Solubility	316 g/L at 0C, 2033 g/L at 100C - water soluble

Source: Copper Sulphate Pentahydrate (reference data: PubChem/EPA CTX)

Section 10: Stability and Reactivity

Can be dehydrated by heating; serves as a weak oxidizing agent. Incompatible with finely powdered metals and magnesium; corrodes steel and iron; may react with alkalis, phosphates, acetylene gas, hydrazine, or nitromethane. Acts as an acidic salt, corrodes metals and irritates tissues.

Source: Copper Sulphate Pentahydrate (PubChem Safety and Hazards data).

Hazardous decomposition products: Not available from the selected sources. Data gap, not a finding.

Section 11: Toxicological Information

Likely routes of exposure: Ingestion, eye contact.

- H302: Harmful if swallowed
- H318: Causes serious eye damage

LD50, oral: Not available from the selected sources. Data gap, not a finding.

LD50, dermal: Not available from the selected sources. Data gap, not a finding.

LC50, inhalation: Not available from the selected sources. Data gap, not a finding.

Other health hazard endpoints

- **Skin corrosion/irritation:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **Serious eye damage/irritation:** H318 — Causes serious eye damage (Category 1).
- **Respiratory sensitisation:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **Skin sensitisation:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **Germ cell mutagenicity:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **Carcinogenicity:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **Reproductive toxicity:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **STOT — single exposure:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **STOT — repeated exposure:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.
- **Aspiration hazard:** No data on file for this endpoint — not evaluated. This is a data gap, not a finding that the criteria are not met.

Section 12: Ecological Information

This substance is classified as hazardous to the aquatic environment — see hazard statements above.

- Aquatic Acute (H400): M-factor = 1 (default — no experimentally-derived M-factor on file for this product's components)
- Aquatic Chronic (H410): M-factor = 1 (default — no experimentally-derived M-factor on file for this product's components)

Ecotoxicity endpoint values (fish/invertebrate/algae), persistence/degradability, bioaccumulation potential and mobility in soil are not on file for this product's components — data gap, not a finding.

Section 13: Disposal Considerations

Dispose of in accordance with local, regional, and national regulations. Do not dispose of via household waste or municipal sewer. Use a licensed waste disposal contractor; the specific disposal method and container-handling requirements depend on the waste's regulatory classification in your jurisdiction and are not determined by this document.

Section 14: Transport Information

UN number	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Transport hazard class	9
Packing group	III
Environmental hazards	Marine pollutant

Source: Copper Sulphate Pentahydrate (ECHA_HARMONIZED)

Section 15: Regulatory Information

Classification computed per GHS substance classification rules (ruleset ghs-purple-book-rev9-2021.v1). Component hazard data sourced from ECHA/PubChem — see chemical records for source citations.

Listing data not retrieved — verify TSCA, DSL/NDSL, REACH Annex and state right-to-know status before issue. Absence of a listing here does not mean the components are unlisted.

Section 16: Other Information

Abbreviations: GHS = Globally Harmonized System; PEL = Permissible Exposure Limit; REL = Recommended Exposure Limit; IDLH = Immediately Dangerous to Life or Health; TWA = Time-Weighted Average; CAS = Chemical Abstracts Service; UN = United Nations; PPE = Personal Protective Equipment; DNEL = Derived No-Effect Level; PNEC = Predicted No-Effect Concentration; LD50/LC50 = Lethal Dose/Concentration, 50%.

References: Hazard and physical-property data trace to the source cited under each section above (e.g. ECHA, PubChem, NIOSH, or an uploaded supplier SDS). See the product's chemical records for full citations.

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