

**Safety Data Sheet**

according to 29CFR1910/1200 and GHS Rev. 3

**Initial preparation date:** : 12.04.2014**Cupric Sulfate, Pentahydrate****SECTION 1: Identification of the substance/mixture and of the supplier****Product name:** Cupric Sulfate, Pentahydrate**Manufacturer/Supplier Article number:** S25286**Recommended uses of the product and restrictions on use:****Manufacturer Details:**

AquaPhoenix Scientific  
860 Gitts Run Road,  
Hanover, PA 17331  
(717) 632-1291

**Supplier Details:**

Fisher Science Education  
6771 Silver Crest Road, Nazareth, PA 18064  
800 955-1177

**Emergency telephone number:**

Emergency Telephone No.: 800-255-3924

**SECTION 2: Hazards identification****Classification of the substance or mixture:****Irritant**

Skin irritation, category 2  
Eye irritation, category 2A  
Acute toxicity (oral), category 4

**Environmentally Damaging**

Acute hazards to the aquatic environment, category 1  
Chronic hazards to the aquatic environment, category 1

Acute Toxicity 4 (oral).  
Skin Irritation 2.  
Eye Irritation 2.  
Aquatic Acute Toxicity 1.  
Aquatic Chronic Toxicity 1.

**Signal word:** Warning**Hazard statements:**

Harmful if swallowed.  
Causes skin irritation.  
Causes serious eye irritation.  
Very toxic to aquatic life.  
Very toxic to aquatic life with long lasting effects.

**Precautionary statements:**

If medical advice is needed have product container or label at hand.  
Keep out of reach of children.  
Read label before use.  
Wash thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Wear protective gloves/protective clothing/eye protection/face protection.

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Avoid release to the environment.

Rinse mouth.

Specific treatment (see ... on this label).

Take off contaminated clothing and wash before reuse.

Collect spillage.

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

IF ON SKIN: Wash with soap and water.

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

If skin irritation or a rash occurs: Get medical advice/attention.

If eye irritation persists get medical advice/attention.

**Other Non-GHS Classification:** None**SECTION 3: Composition/information on ingredients****Ingredients:**

Ingredients:		
CAS 7758-99-8	Copper (II) Sulfate Pentahydrate	100 %
Percentages are by weight		

**SECTION 4: First aid measures****Description of first aid measures****After inhalation:**

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. If breathing is difficult, give oxygen. Seek immediate medical attention or advice. Give artificial respiration if necessary.

**After skin contact:**

Rinse thoroughly. Flush with water for 15 minutes. Seek immediate medical attention or advice.

**After eye contact:**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Immediately seek medical assistance or advice.

**After swallowing:**

Rinse mouth thoroughly. Induce vomiting. Have exposed individual drink sips of water or milk. Seek immediate medical attention or advice.

**Most important symptoms and effects, both acute and delayed:**

May cause burning of the throat, mouth, esophagus and stomach, nausea, abdominal pain, metallic taste, hemorrhagic gastritis, diarrhea. May cause irritation to the upper respiratory tract, coughing, shortness of breath, sore throat, ulceration and perforation of the respiratory tract, chills and stuffiness of the head. Irritation. Nausea. Headache. Shortness of breath. Copper poisoning may occur if vomiting does not occur immediately. Symptoms may include capillary damage, cold sweat, headache, weak pulse, liver and kidney damage, blood effects, convulsions, jaundice, paralysis, coma, shock or renal failure causing death.

**Indication of any immediate medical attention and special treatment needed:**

Individuals with Wilson's disease are more susceptible to chronic copper poisoning. The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel. If seeking medical attention, provide

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SDS document to physician. Note to physician: Treat symptomatically.

**SECTION 5: Firefighting measures****Extinguishing media****Suitable extinguishing agents:**

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition.

**Unsuitable extinguishing agents:** None**Special hazards arising from the substance or mixture:**

Combustion products may include metallic oxides or other toxic vapors.

**Advice for firefighters:****Protective equipment:**

Wear protective equipment. Use respiratory protective device against the effects of fumes, dust, and aerosol. Keep unnecessary personnel away. Ensure adequate ventilation. Keep away from heat and sources of ignition.

**Additional information (precautions):**

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures:**

Wear protective equipment. Avoid dust generation. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

**Environmental precautions:**

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Should not be released into environment.

**Methods and material for containment and cleaning up:**

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor.

**Reference to other sections:** None**SECTION 7: Handling and storage****Precautions for safe handling:**

Wash thoroughly after handling. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid generation of dust or fine particulate. Wear personal protective equipment. Do not ingest or inhale. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid contact with skin, eyes and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

**Conditions for safe storage, including any incompatibilities:**

Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Store away from incompatible substances. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not expose to air. Store protected from moisture. Store under an inert atmosphere. Store in a cool location. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs.

**SECTION 8: Exposure controls/personal protection**

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<b>Control parameters:</b>	7758-99-8, Copper sulfate, OSHA PEL TWA: (as Cu) 1 mg/m <sup>3</sup> . 7758-99-8, Copper sulfate, ACGIH TLV: TWA (as Cu) 1 mg/m <sup>3</sup> . 7758-99-8, Copper sulfate, NIOSH REL: TWA (as Cu) 1 mg/m <sup>3</sup> .
<b>Appropriate engineering controls:</b>	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or dusts (total/respirable) below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.
<b>Respiratory protection:</b>	Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.
<b>Protection of skin:</b>	The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.
<b>Eye protection:</b>	Safety glasses with side shields or goggles.
<b>General hygienic measures:</b>	The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

**SECTION 9: Physical and chemical properties**

<b>Appearance (physical state, color):</b>	Blue solid	<b>Explosion limit lower:</b> <b>Explosion limit upper:</b>	Not determined Not determined
<b>Odor:</b>	Odorless	<b>Vapor pressure at 20°C:</b>	7.3 mm Hg @ 25 C
<b>Odor threshold:</b>	Not determined	<b>Vapor density:</b>	Not determined
<b>pH-value:</b>	Not determined	<b>Relative density:</b>	Not determined
<b>Melting/Freezing point:</b>	110 C	<b>Solubilities:</b>	Soluble in water.
<b>Boiling point/Boiling range:</b>	150 C	<b>Partition coefficient (n-octanol/water):</b>	Not determined
<b>Flash point (closed cup):</b>	Not applicable	<b>Auto/Self-ignition temperature:</b>	Not determined
<b>Evaporation rate:</b>	Not determined	<b>Decomposition temperature:</b>	Not determined
<b>Flammability (solid, gaseous):</b>	Not determined	<b>Viscosity:</b>	a. Kinematic: Not determined b. Dynamic: Not determined
<b>Density at 20°C:</b>	Not determined		
<b>Specific Gravity:</b>	2.2840 g/cm <sup>3</sup>		

**SECTION 10: Stability and reactivity****Reactivity:**

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Material is hygroscopic.

**Chemical stability:**

No decomposition if used and stored according to specifications. Hygroscopic.

**Possible hazardous reactions:**

None under normal processing.

**Conditions to avoid:**

High temperatures, dust generation, exposure to moist air or water. Store away from oxidizing agents, strong acids or bases. Incompatible Materials.

**Incompatible materials:**

Aqueous solution of copper (2+) sulfate is an acid. Strong acids. Strong bases. Incompatible with strong bases, hydroxylamine, magnesium.

**Hazardous decomposition products:**Oxides of sulfur. Copper fumes. Carbon oxides (CO, CO<sub>2</sub>).**SECTION 11: Toxicological information****Acute Toxicity:** No additional information.**Chronic Toxicity:** No additional information.**Skin corrosion/irritation:**

May cause burning of the throat, mouth, esophagus and stomach.

May cause irritation, redness, pain.

May cause irritation to the upper respiratory tract, ulceration and perforation of the respiratory tract.

**Serious eye damage/irritation:**

May cause irritation, redness, pain, tearing.

**Respiratory or skin sensitization:** No additional information.**Carcinogenicity:** No additional information.**Germ cell mutagenicity:** No additional information.**Reproductive Toxicity:** No additional information.**STOT-single and repeated exposure:** No additional information.**Additional toxicological information:**

No additional information.

**SECTION 12: Ecological information****Ecotoxicity:**Fish: NOEC (30d) *P. fluviatilis* (7758-98-7), 39 µg/l.

Fish: LC50 (96h) Unspecified Goldfish (7758-98-7), 0.1-2.5 mg/L.

Fish: LC50 (96h) Unspecified Harlequin fish (7758-98-7), 0.1-2.5 mg/L.

Fish: LC50 (96h) Rainbow trout (7758-98-7), 0.1-2.5 mg/L.

Crustacea: EC50 (48h) Unspecified flea *Daphnia* (7758-98-7), 0.24 mg/L.Fish: LC50 (96 hr) *C. caprio* (7758-98-7 copper sulphate) , 810 µg/l.Crustacea - LC50 values (48 h) for *D. magna* (7758-98-7), 33.8 µg/L.Algae: NOEC (72h) *Phaeodactylum tricornutum* (7758-98-7), 5.7 µg/L.Crustacea: NOEC (27d) *D. polymorpha* (7758-98-7), 21 µg Cu/l.**Persistence and degradability:**

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Readily degradable in the environment.

**Bioaccumulative potential:**

Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. This lack of biomagnification appears common with heavy metals. In air, copper aerosols (in general) have a residence time of 2 to 10 days in an unpolluted atmosphere and 0.1 to > 4 days in polluted, urban areas.

**Mobility in soil:** No additional information.**Other adverse effects:** No additional information.**SECTION 13: Disposal considerations****Waste disposal recommendations:**

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

**SECTION 14: Transport information****US DOT****UN Number:**

ADR, ADN, DOT, IMDG, IATA 3288

**Limited Quantity Exception:** None**Bulk:****RQ (if applicable):** None**Proper shipping Name:** Toxic solid, Inorganic, N.O.S., (Cupric Sulfate).**Hazard Class:** 6**Packing Group:** III.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**Non Bulk:****RQ (if applicable):** None**Proper shipping Name:** Toxic solid, Inorganic, N.O.S., (Cupric Sulfate).**Hazard Class:** 6**Packing Group:** III.**Marine Pollutant (if applicable):** No additional information.**Comments:** None**SECTION 15: Regulatory information****United States (USA)****SARA Section 311/312 (Specific toxic chemical listings):**

Acute

**SARA Section 313 (Specific toxic chemical listings):**

7758-99-8 Cupric sulfate, Copper compounds.

**RCRA (hazardous waste code):**

None of the ingredients are listed.

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All ingredients are listed.

**CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):**

7758-99-8 Cupric Sulfate Pentahydrate (Copper compounds) 10 lbs.

**Proposition 65 (California):****Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Canada****Canadian Domestic Substances List (DSL) :**

All ingredients are listed.

**SECTION 16: Other information**

For metals listed under CERCLA (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches) (Ref: Footnote after Table 302.4 in 40 CFR 302.4). The RQs shown on the consolidated list apply to smaller particles. This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

**NFPA:** 2-0-1**HMIS:** 2-0-1**GHS Full Text Phrases:** None**Abbreviations and Acronyms:**

IMDG	International Maritime Code for Dangerous Goods.
PNEC.	Predicted No-Effect Concentration (REACH).
CFR	Code of Federal Regulations (USA)
SARA	Superfund Amendments and Reauthorization Act (USA).
RCRA.	Resource Conservation and Recovery Act (USA).
TSCA.	Toxic Substances Control Act (USA).
NPRI	National Pollutant Release Inventory (Canada).
DOT	US Department of Transportation.

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IATA	International Air Transport Association.
GHS	Globally Harmonized System of Classification and Labelling of Chemicals.
ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service (division of the American Chemical Society).
NFPA	National Fire Protection Association (USA).
HMIS	Hazardous Materials Identification System (USA).
WHMIS	Workplace Hazardous Materials Information System (Canada).
DNEL	Derived No-Effect Level (REACH).