Cupric Sulfate,Pentahydrate

SECTION 1 : Identification of the substance/mixture and of the supplier

Product name : **Cupric Sulfate,Pentahydrate**

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: **S25287B**

Recommended uses of the product and uses restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific
9 Barnhart Drive, Hanover, PA 17331

Supplier Details:

Fisher Science Education
15 Jet View Drive, Rochester, NY 14624

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2 : Hazards identification

Classification of the substance or mixture:

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

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

Avoid release to the environment
Do not eat, drink or smoke when using this product
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

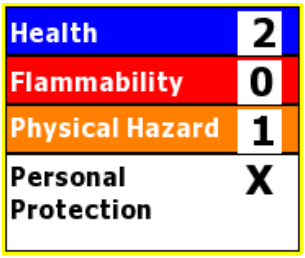
Other Non-GHS Classification:

WHMIS

D2B

NFPA/HMIS

NFPA SCALE (0-4)



HMIS RATINGS (0-4)

SECTION 3 : Composition/information on 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.

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. Seek immediate medical attention 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 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

For safety reasons unsuitable extinguishing agents:

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/aerosol Keep unprotected persons away Ensure adequate ventilation Keep away from ignition sources Protect from heat

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

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:

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.Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. .Avoid ingestion and inhalation. Do not ingest or inhale.

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. 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

Control Parameters: 7758-99-8, Copper sulfate, OSHA PEL TWA: (as Cu) 1 mg/m3
7758-99-8, Copper sulfate, ACGIH TLV: TWA (as Cu) 1 mg/m3
7758-99-8, Copper sulfate, NIOSH REL: TWA (as Cu) 1 mg/m3

Appropriate Engineering controls: 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.

Respiratory protection: 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.

Protection of skin: 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.

Eye protection: Safety glasses with side shields or goggles.

General hygienic measures: 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

Appearance (physical state,color):	Blue Solid	**Explosion limit lower**: **Explosion limit upper**:	Not Determined Not Determined
Odor:	Odorless	**Vapor pressure**:	7.3 mm Hg @ 25 C
Odor threshold:	Not Determined	**Vapor density**:	Not Determined
pH-value:	Not Determined	**Relative density**:	Not Determined
Melting/Freezing point:	110 C	**Solubilities**:	Soluble in water

Cupric Sulfate,Pentahydrate

Boiling point/Boiling range:	150 C	**Partition coefficient (n-octanol/water)**:	Not Determined
Flash point (closed cup):	Not Applicable	**Auto/Self-ignition temperature**:	Not Determined
Evaporation rate:	Not Determined	**Decomposition temperature**:	Not Determined
Flammability (solid,gaseous):	Not Determined	**Viscosity**:	a. Kinematic:Not Determined b. Dynamic: Not Determined
Density: Not Determined **Specific Gravity: :**2.2840 g/cm3			

SECTION 10 : Stability and reactivity

Reactivity: Material is hygroscopic.
Chemical stability: No decomposition if used and stored according to specifications.Hydroscopic.
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. Incompatible with strong bases, hydroxylamine, magnesium.Strong acids.Strong bases.
Hazardous decomposition products: Oxides of sulfur. Copper fumes. Carbon oxides (CO, CO2).

SECTION 11 : Toxicological information

Acute Toxicity:		
Oral:	300 mg/kg	LD50 oral-rat (7758-99-8, hydrate of 7758-98-7)
Chronic Toxicity: No additional information.		
Corrosion Irritation:		
Dermal:		May cause burning of the throat, mouth, esophagus and stomach
Ocular:		May cause irritation, redness, pain, tearing
Dermal:		May cause irritation, redness, pain
Dermal:		May cause irritation to the upper respiratory tract, ulceration and perforation of the respiratory tract
Sensitization:		No additional information.
Single Target Organ (STOT):		No additional information.
Numerical Measures:		No additional information.
Carcinogenicity:		No additional information.
Mutagenicity:		No additional information.
Reproductive Toxicity:		No additional information.

SECTION 12 : Ecological information

Ecotoxicity

Fish: NOEC (30d) P. fluviatilis (7758-98-7): 39 ug/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 ug/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: 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:
Other adverse effects:

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

UN-Number

3288

UN proper shipping name

Toxic solid, Inorganic, N.O.S., (Cupric Sulfate)

Transport hazard class(es)

Class:
6.1 Toxic substances

Packing group:III
Environmental hazard:Severe Marine Pollutant
Transport in bulk:
Special precautions for user:

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 is listed

TSCA (Toxic Substances Control Act):

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 is listed

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed

Chemicals known to cause developmental toxicity:

None of the ingredients is listed

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

None of the ingredients is listed

Canadian NPRI Ingredient Disclosure list (limit 1%):

7758-98-7 Copper (II) sulfate
7758-99-8 Pentahydrate version of compound on list

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.

GHS Full Text Phrases:

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
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)

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