

Safety Data Sheet (SDS)

COPPER SULFATE PENTAHYDRATE

1. Identification of the Substance	PRODUCT NAME: Copper Sulfate Pentahydrate DISTRIBUTOR: EcoFusion Inc., PO Box 251408. Plano, TX 75025 – 1408 (USA) TEL: +1 972 403 7449 FAX: +1 214 291 5348 EMERGENCY: CHEMTREC 800 424 9300
2. Hazards Identification	Emergency Overview · Appearance: blue crystals Warning! Harmful if swallowed. Causes respiratory and digestive tract irritation with possible burns. Hygroscopic (absorbs moisture from air). Severe marine pollutant. Possible sensitizer. · Target Organs: Blood, kidneys, liver. Potential Health Effects · Eye: Exposure to particulates or solution may cause conjunctivitis, ulceration, and corneal abnormalities. Causes eye irritation and possible burns. · Skin: May cause skin sensitization. Causes skin irritation and possible burns. May cause itching eczema. · Ingestion: Harmful if swallowed. May cause severe gastrointestinal irritation with nausea, vomiting and possible burns. Ingestion of large amounts of copper salts may cause bloody stools and vomit, low blood pressure, jaundice, and coma. Ingestion of copper compounds may produce systemic toxic effects to the kidney and liver and central nervous system excitation followed by depression. · Inhalation: May cause ulceration and perforation of the nasal septum if inhaled in excessive amounts. Causes irritation of the respiratory tract with possible burns. · Chronic: Prolonged or repeated eye contact may cause conjunctivitis. May cause liver and kidney damage. May cause anemia and other blood cell abnormalities. Individuals with Wilson's disease are unable to metabolize copper. Thus, copper accumulates in various tissues and may result in liver, kidney, and brain damage. Laboratory experiments have resulted in mutagenic effects. May cause allergic skin reaction in individuals. Chronic copper poisoning in man is recognized in the form of Wilson's disease.
3. Composition / Information on Ingredients	CHEMICAL FORMULA: CuSo4.5H2O MOLECULAR WEIGHT: 249.68 CAS NO.: 7758-99-8 EINECS #: 231-847-6 % (BY WEIGHT): 98-100%
4. First Aid Measures	SKIN: Immediately flush skin with plenty of soap & water for at least 15 minutes while removing contaminated clothing & shoes. Get medical aid. EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once. INGESTION: Do NOT induce vomiting. If victim is conscious, give 2-4 cupful of milk or water. Get medical aid at once. INHALATION: Give artificial respiration if necessary. Move victim to fresh air. Keep victim warm and at rest. Get medical aid at once. Do not use

	<p>mouth-to-mouth resuscitation.</p> <ul style="list-style-type: none"> · Notes to Physician: Individuals with Wilson’s disease are more susceptible to chronic copper poisoning. · Antidote: The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel. 								
<p>5. Fire Fighting Measures</p>	<p>GENERAL PROTECTION: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible, but this material in sufficient quantity and size is capable of creating a dust explosion.</p> <p>EXTINGUISHING MEDIA: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.</p> <ul style="list-style-type: none"> · Autoignition Temperature: No information found. · Flash Point: No information found. · NFPA Rating: Health-2; flammability-0; reactivity-1 · Explosion Limits: Lower: n/a Upper: n/a 								
<p>6. Accidental Release Measures</p>	<p>GENERAL INFORMATION: Use proper personal protective equipment as indicated in Section 8. Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately. Avoid creating airborne particles. Provide ventilation. Place under an inert atmosphere.</p>								
<p>7. Handling and Storage</p>	<p>HANDLING: Wash thoroughly after handling. 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. Store protected from air.</p> <p>STORAGE: Store tightly closed at room temperature. Protect from heat and incompatibles. Do not expose to air. Store protected from moisture.</p>								
<p>8. Exposure Controls / Personal protection</p>	<p>ENGINEERING CONTROLS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.</p> <p>EXPOSURE LIMITS:</p> <table border="0"> <tr> <td>Chemical Name</td> <td>ACGIH</td> <td>NIOSH</td> <td>OSHA</td> </tr> <tr> <td>Copper (II) sulfate Pentahydrate</td> <td>None listed</td> <td>1 mg/m3 TWA (as Cu except Copper fume) (listed under Copper compounds, nos)</td> <td>None listed</td> </tr> </table> <p>OSHA Vacated PELs: Copper (II) sulfate pentahydrate: No OSHA Vacated PELs are listed.</p> <p>Personal Protective Equipment: Eyes: Do not wear contact lenses when working with chemicals. Wear appropriate protective eyeglasses or chemical safety goggles as described in 29 CFR 1910.133. Skin: Wear appropriate protective gloves to prevent skin exposure. Clothing: Wear appropriate protective clothing to prevent skin exposure. Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 and ANSI Z88.2. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced</p>	Chemical Name	ACGIH	NIOSH	OSHA	Copper (II) sulfate Pentahydrate	None listed	1 mg/m3 TWA (as Cu except Copper fume) (listed under Copper compounds, nos)	None listed
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<p>9. Physical and Chemical properties</p>	<p>PHYSICAL STATE: Crystals COLOR: Blue ODOR: Odorless PH: Not available VAPOR PRESSURE: 7.3 mm Hg @ 25°C</p>								

	<p>VAPOR DENSITY: Not available EVAPORATION RATE: Negligible BOILING POINT: 150°C FREEZING/MELTING POINT: 110°C SOLUBILITY IN WATER: Soluble SPECIFIC GRAVITY/DENSITY: 2.2840 g/cm³</p>
10. Stability and Reactivity	<p>STABILITY: Stable under normal storage and handling conditions. Air sensitive CONDITIONS TO AVOID: High temperatures, incompatible materials, dust generation, exposure to air, exposure to moist air or water MATERIALS TO AVOID: Moisture, air, steel, finely powdered metals, hydroxylamine, magnesium, hydrazine, nitro methane. HAZARDOUS POLYMERIZATION: Has not been reported HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of sulfur, irritating and toxic fumes and gases, oxides of copper, copper fumes</p>
11. Toxicological Information	<p>LD50/LC50: Oral, rat: LD50=300mg/kg; Skin, rat: LD50 = >2gm/kg. EPIDEMIOLOGY: No information available. TERATOGENICITY: No information available. REPRODUCTIVE EFFECTS: No information available. NEUROTOXICITY: No information available. MUTAGENICITY: DNA Inhibition: Human, Lymphocyte = 76 umol/L.; Unscheduled DNA Synthesis: Rat, Liver = 31 umol/L.; Cytogenetic Analysis: Rat, Ascites tumor = 300 mg/kg.; Micronucleus Test: Intraperitoneal, mouse = 5 mg/kg.</p>
12. Ecological Information	<p>ECOTOXICITY: Fish: Rainbow trout: LC50 = 0.1-2.5 mg/L; 96 Hr; Unspecified Fish: Harlequin fish: LC50 = 0.1-2.5 mg/L; 96 Hr; Unspecified Fish: Goldfish: LC50 = 0.1-2.5 mg/L; 96 Hr; Unspecified Water flea Daphnia: EC50 = 0.24 mg/L; 48 Hr; Unspecified. In soil, copper sulfate is partly washed down to lower levels, partly bound by soil components, and partly oxidatively transformed. Copper has a strong affinity for hydrous iron and manganese oxides, clays, carbonate minerals, and organic matter. Sorption to these materials suspended in the water column and in the bed sediments results in relative enrichment of the solid phase and reduction in dissolved levels. ENVIRONMENTAL: 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. PHYSICAL: No evidence was found to indicate that there is any biotransformation process for copper compounds which would have a significant bearing on the fate of copper in aquatic environments. Other: Severe marine pollutant</p>
13. Disposal Considerations	<p>Dispose in accordance with Federal, State and local regulations</p>
14. Transport Information	<p>UN NO.: UN3077 HAZARD CLASS (IMDG): 9 PACKING GROUP: III Quantities of 500g or less are not regulated. Shipping Name: Environmentally hazardous.</p>
15. Regulatory Information	<p>GB12268-2005 And any applicable national regulations for this product.</p>
16. Other Information	<p>Date prepared: 01/19/2018</p>

Revision Date: NA

THE INFORMATION IN THIS MSDS RELATES TO THIS SPECIFIC MATERIAL. IT MAY NOT BE VALID FOR THIS MATERIAL IF USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. IT IS THE USERS' RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF THIS INFORMATION FOR THEIR OWN PARTICULAR USE.

All non-emergency questions should be
Directed to Customer Service at

24 hour emergency Telephone: Chemtrec 800-424-9300
National response in Canada: Canutec 613-996-6666
Outside US & Canada: Chemtrec: 202-483-7616

Note: Chemtrec and Canutec emergency numbers
to be used only in the event of chemical
emergencies involving a spill, leak, exposure or
accident involving chemicals.