



Canadian Agri Products(USA) Corp.

Chemicals to Trade, Experience to Remember

## Material Safety Data Sheet (MSDS)

# MAPLE COPPER SULFATE PENTAHYDRATE

<b>1. Identification of the substance</b>	Product Identity: COPPER SULPHATE PENTAHYDRATE Chemical family : Inorganic Salt Structural Formula : $CuSO_4 \cdot 5H_2O$ CAS No : 7758-99-8
<b>2. Composition /information on ingredients</b>	Component Name : Copper %by Wt : 25 CAS# : 7440-50-8 ACGIH TLV : 1 rmg/m3* OSHA PEL : 1 mg/m3*  * As copper dusts or mists. Components not precisely identified are proprietary or not hazardous
<b>3. Hazards identification</b>	<b>EMERGENCY OVERVIEW</b> Copper dust is eye, skin, and mucous membrane irritant. Copper Sulphate is toxic. Poisoning may affect the liver and/or kidneys and gastrointestinal tract. Persons with a history of chronic respiratory or skin disease may be at increased risk from exposure. See below for route-specific details.  <b>POTENTIAL HEALTH EFFECTS</b> <b>Inhalation:</b> Slightly toxic by inhalation. Acute exposure inhalation of dusts and mist of copper salts may cause irritation of upper respiratory tract. Workers exposed to copper salts in dust for complained of metallic taste with irritation of nasal and oral mucous. <b>Eye Contact:</b> May cause mild irritation to the eyes. Acute exposure copper salts splashed in the eyes may cause conjunctivitis, corneal ulceration and turbidity. <b>Skin Contact:</b> Slight skin irritant. Excessive exposure, especially if prolonged, may produce skin irritation. <b>Ingestion:</b> Repeated exposure may cause allergic contact dermatitis. Copper sulfate is only moderately toxic upon acute oral exposure. Ingestion of copper sulfate is often not toxic because vomiting is automatically triggered by its irritating effect on the gastrointestinal tract. Some of the signs of poisoning of copper sulfate was swallowed include a metallic taste in the mouth, burning pain in the chest and abdomen, intense nausea, vomiting, diarrhoea, headache, sweating, shock, discontinued urination leading to yellowing of the skin. Symptoms of over-exposure may include nausea and



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		vomiting, abdominal pain, and central nervous system depression, which, if severe enough, may lead to death.								
<b>4. First aid measures</b>	<p>Inhalation:</p> <p>Eye Contact:</p> <p>Skin Contact:</p> <p>Ingestion:</p>	<p>Remove victim to fresh air. If not breathing, give artificial respiration preferably mouth-to-mouth. Get medical attention immediately.</p> <p>Hold eyelids open and flush with water, until no evidence of chemical remains (at least 15 – 20 minutes). Get medical attention.</p> <p>Remove contaminated clothing and shoes. Wash with plenty of soap and water until no evidence of chemical remains (approximately 15 - 20 minutes). Get medical attention.</p> <p>Drink promptly a large quantity of milk, egg white, gelatin solution or if these are not available, large quantities of water. Unless extensive vomiting has occurred, empty the stomach by gastric lavage. Administration of gastric lavage should be performed by qualified medical personnel. Probable mucosal damage may contraindicate use of gastric lavage.</p>								
<b>5. Fire fighting measures</b>	<p>Flash Point &amp; Method:</p> <p>Flammable Limits:</p> <p>Auto ignition Temperature:</p> <p>NFPA RATING HMIS RATING</p> <p>FIRE FIGHTING HAZARDS &amp; PROCEDURES General Hazard:</p> <p>Extinguishing Media:</p> <p>Fire Fighting Equipment:</p> <p>Hazardous Combustion Products:</p>	<p>Not applicable.</p> <p>No data.</p> <p>No data.</p> <table border="1"> <tr> <td>Health</td> <td>2</td> </tr> <tr> <td>Flammability</td> <td>0</td> </tr> <tr> <td>Reactivity</td> <td>0</td> </tr> <tr> <td>Protective Equipment</td> <td></td> </tr> </table>  <p>Negligible fire and explosion hazard when exposed to heat or flame.</p> <p>Use dry chemical, carbon dioxide, water spray, or foam.</p> <p>Wear protective clothing and self-contained breathing apparatus.</p> <p>Thermal decomposition products include highly toxic oxides of sulphur.</p>	Health	2	Flammability	0	Reactivity	0	Protective Equipment	
Health	2									
Flammability	0									
Reactivity	0									
Protective Equipment										
<b>6. Accidental release measures</b>	Solid Spill:	<p>Dig holding area such as lagoon, pond or pit for containment.</p> <p>Use protective cover such as a plastic sheet to prevent material</p>								



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	Water Spill:	from dissolving fire extinguisher water or rain. Add suitable agent neutralize spilled material. Use dredges or lifts to extract immobilized masses of pollution and precipitates.
<b>7. Handling and storage</b>	General Information: Handling : Storage:	Average shelf life under proper storage conditions is at least two (2) years. Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Store in a clean, dry, well-ventilated area. Do not store near feed, food or within the reach of children.
<b>8. Exposure controls/personal protection</b>	Pesticide Applicators and workers:  <b>Manufacturing, Commercial Blending and Packaging workers:</b> Ventilation: Respiratory Protection: Eye Protection: Protective Clothing:	These workers must refer to the Product Label and Directions For Use in accordance with the Worker Protection Standard 40 CFR part 170.  Control enclosed spaces with adequate ventilation to prevent exceedance of ACGIH TLV (1mg/m3). In enclosed spaces where the TLV may be exceeded, wear NIOSH/MSHA approved dust or mist respirator. Employee must wear splash proof of dust resistant safety goggles to prevent eyes contact with this substance. Employees must wear appropriate protective (impervious) clothing, gloves and equipment to prevent repeated or prolonged skin contact with this substance.
<b>9. Physical and chemical properties</b>	Molecular Weight : Vapour Pressure: Specific Gravity(H2O = 1): Solubility in Water: pH: Boiling Point: Melting Point: Viscosity: Odour: Colour: Physical State:	249.5 No data. 2.3 Soluble. 4, 0 +/- 0, 5 (water suspension 5%) 250 °C (water suspension) 200 °C (water suspension) No data None Blue Crystals or powder
<b>10. Stability and reactivity</b>	General: Incompatible Materials: Conditions to Avoid: Hazardous Decomposition: Hazardous Polymerization:	This material is stable under normal conditions. No data Excessive heat. Thermal decomposition products include highly toxic oxides of sulfur. Will not occur.



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<b>11. Toxicological information</b>	Acute toxicity :	<p>Copper is one of 26 essential trace elements occurring naturally in plant and animal tissue. The usual routes by which humans receive toxic exposure to copper sulfate are through skin or eye contact, as well as by inhalation of powders and dusts. Copper sulfate is a strong irritant.</p> <p>Copper sulfate is only moderately toxic upon acute oral exposure. The lowest dose of copper sulfate that has been toxic when ingested by humans is 11 mg/kg. Ingestion of copper sulfate is often not toxic because vomiting is automatically triggered by its irritating effect on the gastrointestinal tract. Symptoms are severe, however, if copper sulfate is retained in the stomach, as in the unconscious victim. Some of the signs of poisoning which occurred after 1-12 grams of copper sulfate was swallowed include a metallic taste in the mouth, burning pain in the chest and abdomen, intense nausea, vomiting, diarrhoea, headache, sweating, shock, discontinued urination leading to yellowing of the skin. Injury to the brain, liver, kidneys and stomach and intestinal linings may also occur in copper sulfate poisoning. The LD50 for copper sulfate is 30 mg/kg in rats. Ingestion by animals of three ounces of a 1% solution of copper sulfate will produce extreme inflammation of the gastrointestinal tract, with symptoms of abdominal pain, vomiting, and diarrhoea. When copper sulfate is given intravenously, or injected into the vein, as little as 2 mg/kg copper sulfate is lethal to guinea pigs; and 4 mg/kg is lethal to rabbits.</p>
<b>12. Ecological information</b>	Chronic Effects :	<p>Vineyard sprayers experienced liver disease after 3 to 15 years of exposure to copper sulfate solution in Bordeaux mixture. Long-term effects are more likely in individuals with Wilson's disease, a condition which causes excessive absorption and storage of copper. Chronic exposure to low levels of copper can lead to anemia. The biological or chemical manner by which excessive doses of copper sulfate work is not well understood. The growth of rats was retarded when 25 mg/kg of copper sulfate was included in their diets. 200mg/kg caused starvation and death. This material caused a significant increase in the death rates in mice that were exposed to an air level equivalent to human inhalation exposures. The EPA limit for copper sulfate in drinking water is 1 ppm. This limit has been set to prevent a disagreeable taste from copper in drinking water, as well as to provide adequate protection from toxicity.</p>
	Chemical Fate:	<p>The degree of mobility of copper in the environment depends upon the pH of ambient soils and waters. The higher the acidity, the more soluble copper salts are and, hence, the more mobile. Partitioning of copper into air is negligible due to the low vapour pressure of copper salts.</p>





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*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

**972-403-7444**

**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.