



SAFETY DATA SHEET

Copper Sulfate

1. PRODUCT AND COMPANY IDENTIFICATION

SDS Name: Copper Sulfate
Product ID: CS10
CAS no: Mixture
Chemical Present: See components below

Company Identification: Alberta Veterinary Laboratory Ltd.
7226- 107th Avenue South East
Calgary, Alberta Canada
T2C5N6

For information, call: (403) 456-2245
Emergency number: (613) 996-6666 (CANUTEC)
1-80 463-5060 OR
(418) 656-8090 (Control Poison Center)

2. HAZARDS IDENTIFICATION

Eye Contact: Citric Acid: May cause irritation, redness and pain.
Skin Contact/Absorption: Citric acid: Dust may cause redness and irritation.
Repeated contact may cause skin irritation, itching of skin and localized discoloration of the skin. Can cause allergic contact dermatitis.

Inhalation: Citric Acid: Dust is irritating to eyes, nose, throat and respiratory tract, and may cause sore throat, coughing and difficulty breathing.

Ingestion: Contact a poison control center or physician for treatment advice immediately. Have affected person sip a glass of water if able to swallow. Do not give anything by mouth if victim is unconscious. Do not induce vomiting unless instructed to do so. Seek immediate medical attention.

3. COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	Chemical Name	Chemical Formula	Common Name	% by weight
7758-99-8	Copper Sulfate Pentahydrate	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$	Bluestone, Blue vitriol	80%
77-92-9	Citric Acid	$\text{C}_6\text{H}_8\text{O}_7$	Citronensaeure	20%



4. FIRST AID MEASURES

Eye Contact:	Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention if irritation persists.
Skin Contact:	Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persist.
Inhalation:	Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek medical Attention if difficulties persist.
Ingestion:	Contact a poison control center or physician for treatment advice immediately. Have affected person sip a glass of water if able to swallow. Do not give anything if victim is unconscious. Do not induce vomiting unless to do so. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

Condition of Flammability	Not flammable
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Means of Extinction	Product does not burn. Use appropriate extinguishing media for surrounding fire.
Flash Point	Not applicable
Auto-ignition Temperature	Not applicable
Upper Flammable Limit	Not applicable
Lower Flammable Limit	Not applicable
Hazardous Combustible Products	Copper Sulfate: at temperatures above 600°C the material will decompose into cupric oxide and sulphur dioxide. Citric Acid: May evolve oxides of carbon (CO, CO ₂) under fire conditions.
Special Fire Fighting Procedures	Wear NIOSH-approved self-contained breathing apparatus and protective clothing.
Explosion Hazards	Not applicable

6. ACCIDENTAL RELEASE MEASURES

Leak / Spill	Wear appropriate personal protective equipment if required. Stop or reduce leak if safe to do so. Vacuum or sweep up spilled material, making sure to avoid generation of dust. If material is diluted with water, prevent from entering sewers and carefully neutralize with lime or soda ash to form insoluble copper salts which should be disposed of by approved method.
Deactivating Materials	Lime or soda ash



7. HANDLING AND STORAGE

Handling Procedures:	Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.
Storage Requirements:	Store in a cool, dry, well-ventilated place. Keep container tightly closed, and away from incompatible materials. Storage material compatible for sulphate storage include polypropylene, PVC or other plastic material. Keep away from galvanized piping and nylon material.,

8. EXPOSURE CONTROLES/PERSONAL PROTECTION

Protective Equipment	
Eyes	Chemical goggles, full face shield or a full face respirator is to be worn at all times when product is handled.
Respiratory	Use NIOSH/MSHA approved respiratory protection when airborne dust is expected. In dusty atmosphere, use an approved dust respirator.
Gloves	Impervious gloves of chemically resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Clothing	Body suits, aprons and or coveralls of chemical resistant material should be worn at all times. Wash contaminated clothing and dry thoroughly before reuse.
Footwear	Impervious boots of chemically resistant material should be worn.
Engineering Controls:	
Ventilation Requirements:	Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions should be provided. Supply sufficient replacement air to make up for air removed by exhaust systems.
Other	Keep an eye wash fountain and safe shower available and in close proximity to work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical State:	Powder/ Solid
Color:	Blue powder
Odor:	Odorless
Odor Threshold:	No test data available
pH:	3.7 - 4.5 at 50 g/l at 25 °C (77 °F)
Melting point/freezing point:	110 °C (230 °F)
Solubility in water:	All component chemicals are soluble in water.
Vapour pressure:	9.7 hPa (7.3 mmHg) at 25 °C (77 °F)
Relative density:	2.284 g/cm ³

**10. STABILITY AND REACTIVITY**

Stability	Stable
Incompatibles	Citric Acid: Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys. Copper Sulfate: Hydroxylamine, magnesium aluminum, ammonia, acetylene, sodium hypobromite and nitromethane can be corrosive to most ferrous based metals when moist.
Conditions to avoid	Heating to decomposition. Incompatible materials
Decomposition Products	CO, CO ₂ may form when citric acid heated to decomposition. Contact with magnesium metal can generate dangerous levels of hydrogen gas. Aluminum will evolve less hydrogen gas upon contact. Copper dust or mist may react with acetylene gas to form shock sensitive copper acetylides. Contact with hydroxylamine will ignite hydroxylamine. Copper sulphate is very hygroscopic and will absorb moisture from air to form a solution.
Hazardous Polymerization	Will not occur

11. TOXICOLOGICAL INFORMATION**Principle Routes of Exposure**

Ingestion: May be harmful if swallowed. May cause severe gastrointestinal tract with nausea, vomiting and possible burns.

Skin Contact: May cause skin irritation. May be harmful if absorbed through skin. Repeated or prolonged contact may cause irritation.

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation. May cause ulceration of nose and throat.

Eye Contact: may cause severe eye contact. May cause clouding of the cornea.

Carcinogenicity: Not listed in IARC and ACGIH

Reproduction Toxicity: Not Available

Teratogenicity: Not Available

Embryotoxicity: Not Available

Mutagenicity: Not Available

Additional Information: Prolonged skin contact may cause irritation and eczema.

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (Water flea) - 0.024 mg/l - 48 h

12. ECOLOGICAL INFORMATION

Ingredients	Ecotoxicity – Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity – Freshwater Algae Data
Copper Sulphate	LC50 96h (Oncorhynchus mykiss) 0.1mg/L	Not Available	Not Available

**13. DISPOSAL CONSIDERATIONS**

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging: Empty containers should be recycle or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION**DOT (USA):**

DOT Shipping Name: ENVIRONMENTALE HAZARDOUS SUBSTANCE, SOLID, N.O.S
(COPPER SULPHATE)

Dot Hazardous Class: 9

DOT UN Number : UN3077

DOT Packaging Group : III

Dot Reportable Quantity (lbs) : Not Available

Note: No Additional remark

Marine Pollutant: Yes

TDG (Canada):

TDG Shipping Name: ENVIRONMENTALE HAZARDOUS SUBSTANCE, SOLID, N.O.S
(COPPER SULPHATE)

Hazardous Class: 9

UN Number: UN3077

Packaging Group: III

Note: Regulated for marine transportation only, if transported by road or rail product is not Regulated

Marine Pollutant: Yes

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

U.S. Regulatory Rules

CERCLA/SARA - Section 302 and 313:

SARA(311,312) Hazard Class:

California Proposition 65 :

MA Right to Know List :

WHMIS Hazardous Class: D1B TOXIC MATERIALS
D2B TOXIC MATERIALS



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Alberta Vet Laboratories Ltd.

Document No.:

SDS-QC.008

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16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Alberta Veterinary Laboratory Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Alberta Veterinary Laboratory Ltd. has been advised of the possibility of such damages.

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR

Revision Date: 2020-03-16