

Material Safety Data Sheet

Cupric nitrate trihydrate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Cupric nitrate trihydrate

Catalog Codes: SLC3202, SLC4990

CAS#: 10031-43-3

RTECS: GL7875000

TSCA: TSCA 8(b) inventory: No products were found.

CI#: Not available.

Synonym: Copper (II) Nitrate trihydrate; Nitric acid, copper (2+) salt, trihydrate; Copper nitrate trihydrate; Copper Dinitrate Trihydrate; Copper (II) Nitrate trihydrate (1:2:3)

Chemical Name: Copper (II) nitrate, trihydrate

Chemical Formula: $\text{Cu}(\text{NO}_3)_2 \cdot 3\text{H}_2\text{O}$

Contact Information:

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Section 2: Composition and Information on Ingredients

Composition:

| Name | CAS # | % by Weight |
|---------------------------|------------|-------------|
| Cupric nitrate trihydrate | 10031-43-3 | 100 |

Toxicological Data on Ingredients: Cupric nitrate trihydrate: ORAL (LD50): Acute: 940 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation.

Potential Chronic Health Effects:

Slightly hazardous in case of skin contact (sensitizer).

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to blood, kidneys, liver, cardiovascular system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. Seek medical attention.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: combustible materials

Explosion Hazards in Presence of Various Substances:

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Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Ignites paper spontaneously in the presence of moisture.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:

Oxidizing material. Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Prevent entry into sewers, basements or confined areas;dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Oxidizer. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, combustible materials, organic materials.

Storage:

Deliquescent. Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

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Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 1 CEIL: 2 from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent crystals solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 241.6 g/mole

Color: Blue.

pH (1% soln/water): Not available.

Boiling Point: Decomposition temperature: 170°C (338°F)

Melting Point: 114.5°C (238.1°F)

Critical Temperature: Not available.

Specific Gravity: 2.05 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: 8.33 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Soluble in cold water. Solubility in Water: 137.8 g/100 cc water @ 0 deg. C.; 1270 g/100 cc @ 100 deg. C. Solubility in alcohol:100 g/100 cc alcohol @ 12.5 deg. C. Very slightly soluble in liquid ammonia. Practically insoluble in Ethyl acetate.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture

Incompatibility with various substances: Reactive with reducing agents, combustible materials, organic materials, metals.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

Incompatible with easily oxidizable materials, paper, wood, organic substances, acetylene, hydrazine, nitromethane, ammonia

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+ potassium amide, acetic anhydride, sodium hypobromide, nitromethanes, potassium ferrocyanide, ether, tin. Reacts vigorously with ether.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 940 mg/kg [Rat].

Chronic Effects on Humans:

May cause damage to the following organs: blood, kidneys, liver, cardiovascular system, central nervous system (CNS).

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause severe irritation with possible burns. May cause dermatitis, and skin discoloration. Eyes: May cause severe irritation and possible eye burns. May cause ulceration of the conjunctiva and cornea. Inhalation: May cause severe irritation of the respiratory tract (nose, throat, lungs) with coughing, wheezing, headache, pain, shortness of breath, inflammation, and possible burns. May cause ulceration and perforation of the nasal septum is inhaled in excessive amounts. Other symptoms may include spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Ingestion: May be harmful if swallowe. May cause severe gastrointestinal tract irritation with salivation, headache coldsweats, nausea, vomiting and abdominal pain, diarrhea, burning of the mouth, esophagus, or stomach, metallic taste, possible burns resulting in gastric bleeding, hemorrhaging of the digestive tract. Other symptoms of over exposure may include cramps in the calves, muscle rigor, prostration, convulsions, paralysis. May affect behavior/ central nervous system (convulsions, somnolence, excitation followed by central nervous system depression). May cause liver (jaundice) and kidney damage/failure. This product is a nitrate. The toxicity of nitrates is due to in vivo conversion into nitrites. Nitrites can affect the blood and produce methemoglobinemia which results in deficient oxygenation of the blood, causing difficulty breathing, and cyanosis(a bluish discoloration of the skin). Nitrites may also affect the cardiovascular system (hypotension, cardiac arrhythmias, vasodilation, decreased peripheral vascular resistance, hypotension, bradycardia, shock, cardiovascular collapse) which may result in death. Chronic Potential health effects: Repeated exposure by inhalation may cause shrinking of the inner lining of the nose and may cause ulcers and a hole(perforation) in the bone (septum) dividing the inner nose. Repeated ingestion may cause similar effects to those of acute ingestion. It may cause kidney and liver damage.

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Repeated exposure by skin contact may cause thickening of the skin, and may cause a greenish color (discoloration) to the skin and hair. May also cause dermatitis, a skin allergy. Medical Conditions Aggravated by Exposure: Persons with preexisting skin disorders, impaired liver, kidney or pulmonary function, glucose-6-phosphate dehydrogenase deficiency, or preexisting Wilson's disease. Individual's with Wilson's disease are unable to metabolize copper. Therefore, copper accumulates in various tissues and may result in liver, kidney, and brain damage.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 5.1: Oxidizing material.

Identification: : Nitrate, inorganic, n.o.s. (Cupric Nitrate) UNNA: 1477 PG: III

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Cupric nitrate (CAS no. 3251-23-8) Illinois chemical safety act: Cupric nitrate (CAS no. 3251-23-8) New York release reporting list: Cupric nitrate (CAS no. 3251-23-8) Rhode Island RTK hazardous substances:
Cupric nitrate CAS no. 3251-23-8) Pennsylvania RTK: Cupric nitrate or Nitric Acid, Copper (2+) salt (CAS no. 3251-23-8)
Massachusetts RTK: Cupric nitrate (CAS no. 3251-23-8) Massachusetts spill list: Cupric nitrate (CAS no. 3251-23-8) New Jersey: Cupric nitrate (CAS no. 3251-23-8) New Jersey spill

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list: Cupric nitrate CAS no. 3251-23-8) Louisiana spill reporting:
Cupric nitrate (CAS no. 3251-23-8) SARA 313 toxic chemical notification and release reporting:
Listed as Copper compounds
CERCLA: Hazardous substances.: Cupric Nitrate (CAS no. 3251-23-8): 100 lbs. (45.36 kg)
TSCA: Cupric Nitrate or Nitric
Acid, Copper (II) salt (CAS no. 3251-23-8) is TSCA listed, but Cupric Nitrate trihydrate (CAS
no. 10031-43-3) is exempt from
TSCA listing (not TSCA listed) since it is a hydrate.

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29
CFR 1910.1200).

Other Classifications:

WHMIS (Canada):

CLASS C: Oxidizing material. CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent.
Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:17 PM

Last Updated: 03/09/2010 12:00 PM

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