

# Material Safety Data Sheet

## Cupric Nitrate Trihydrate

ACC# 05645

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Cupric Nitrate Trihydrate**Catalog Numbers:** S73208, S73211-1, S732111, S93221**Synonyms:** Copper(II) nitrate trihydrate; Nitric acid, copper salt, trihydrate.**Company Identification:**

Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10031-43-3	Cupric nitrate trihydrate	100	unlisted

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: blue solid.

**Danger!** Strong oxidizer. Contact with other material may cause a fire. May be harmful if swallowed. Causes severe respiratory tract irritation. May cause severe eye and skin irritation with possible burns. Causes severe digestive tract irritation with pain, nausea, vomiting and diarrhea. May corrode the digestive tract with hemorrhaging and possible shock. May cause liver and kidney damage. May cause dermatitis.

**Target Organs:** Kidneys, liver.

#### Potential Health Effects

**Eye:** Contact with eyes may cause severe irritation, and possible eye burns. Contact may cause ulceration of the conjunctiva and cornea.

**Skin:** May cause severe irritation and possible burns. May cause dermatitis. May cause skin discoloration.

**Ingestion:** May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause liver and kidney damage. May cause hemorrhaging of the digestive tract.

**Inhalation:** May cause methemoglobinemia, cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), convulsions, tachycardia, dyspnea (labored breathing), and death. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. May cause severe irritation of the upper respiratory tract with pain, burns, and inflammation.

**Chronic:** Chronic inhalation and ingestion may cause effects similar to those of acute inhalation

and ingestion. May cause liver and kidney damage. 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.

## Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:** Treat symptomatically and supportively.

**Antidote:** The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel.

## Section 5 - Fire Fighting Measures

**General Information:** Strong oxidizer. Contact with other material may cause fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products.

**Extinguishing Media:** Use extinguishing media most appropriate for the surrounding fire.

**Flash Point:** Not applicable.

**Autoignition Temperature:** Not applicable.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 1; Flammability: 0; Instability: 0; Special Hazard: OX

## Section 6 - Accidental Release Measures

**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, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

## Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Contents may develop pressure upon prolonged storage. Keep away from heat, sparks and flame. Avoid contact with clothing and other combustible materials. Do not get on skin or in eyes. Do not ingest or inhale.

**Storage:** Keep away from heat, sparks, and flame. Do not store near combustible materials.

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Cupric nitrate trihydrate	none listed	1 mg/m <sup>3</sup> TWA (as Cu, except Copper fume) (listed under Copper compounds, n.o.s.).	none listed
Cupric nitrate	none listed	none listed	none listed

**OSHA Vacated PELs:** Cupric nitrate trihydrate: No OSHA Vacated PELs are listed for this chemical. Cupric nitrate: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate 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 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

**Physical State:** Solid

**Appearance:** blue

**Odor:** odorless

**pH:** 4.0 for 0.2M soln.

**Vapor Pressure:** Not applicable.

**Vapor Density:** 8.33

**Evaporation Rate:** Not applicable.

**Viscosity:** Not available.

**Boiling Point:** Not applicable.

**Freezing/Melting Point:** 238 deg F

**Decomposition Temperature:** Not available.

**Solubility:** Soluble in water.

**Specific Gravity/Density:** 2.05

**Molecular Formula:** Cu(NO<sub>3</sub>)<sub>2</sub>·3H<sub>2</sub>O

**Molecular Weight:** 241.60

## Section 10 - Stability and Reactivity

**Chemical Stability:** Stable at room temperature in closed containers under normal storage and

handling conditions.

**Conditions to Avoid:** Incompatible materials, combustible materials, reducing agents, organic matter.

**Incompatibilities with Other Materials:** Reducing agents, combustible materials, potassium ferrocyanide, ether, tin. Ignites paper spontaneously in the presence of moisture.

**Hazardous Decomposition Products:** Oxides of nitrogen, irritating and toxic fumes and gases, copper fumes.

**Hazardous Polymerization:** Has not been reported.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 10031-43-3: GL7875000

**CAS#** 3251-23-8: QU7400000

**LD50/LC50:**

CAS# 10031-43-3:

Oral, rat: LD50 = 940 mg/kg;

CAS# 3251-23-8:

Draize test, rabbit, eye: 100 mg Severe;

Draize test, rabbit, skin: 500 mg Severe;

Oral, mouse: LD50 = 430 mg/kg;

Oral, rat: LD50 = 794 mg/kg;

Oral, rat: LD50 = 940 mg/kg;

**Carcinogenicity:**

CAS# 10031-43-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 3251-23-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:**

## Section 12 - Ecological Information

No information available.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	<b>US DOT</b>	<b>Canada TDG</b>
<b>Shipping Name:</b>	NITRATES, INORGANIC, N.O.S.	NITRATES ORGANIC NOS (CUPRIC NITRATE)
<b>Hazard Class:</b>	5.1	5.1
<b>UN Number:</b>	UN1477	UN1477
<b>Packing Group:</b>	II	II

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 10031-43-3 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).

CAS# 3251-23-8 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

CAS# 3251-23-8: 100 lb final RQ; 45.4 kg final RQ

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 10031-43-3: immediate, delayed, fire.

CAS # 3251-23-8: immediate, delayed, fire.

#### Section 313

This material contains Cupric nitrate trihydrate (listed as Copper compounds, n.o.s.), 100%, (CAS# 10031-43-3) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Cupric nitrate (listed as Water Dissociable Nitrate Compounds), -, (CAS# 3251-23-8) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

#### Clean Water Act:

CAS# 3251-23-8 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 10031-43-3 is listed as a Toxic Pollutant under the Clean Water Act.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 10031-43-3 can be found on the following state right to know lists: California, (listed

as Copper compounds, n.o.s.), New Jersey, (listed as Copper compounds, n.o.s.), Pennsylvania, (listed as Copper compounds, n.o.s.).

CAS# 3251-23-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

### **California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.

### **European/International Regulations**

#### **European Labeling in Accordance with EC Directives**

##### **Hazard Symbols:**

XN O

##### **Risk Phrases:**

R 22 Harmful if swallowed.

R 36/38 Irritating to eyes and skin.

R 8 Contact with combustible material may cause fire.

##### **Safety Phrases:**

#### **WGK (Water Danger/Protection)**

CAS# 10031-43-3: 2

CAS# 3251-23-8: No information available.

#### **Canada - DSL/NDSL**

CAS# 3251-23-8 is listed on Canada's DSL List.

#### **Canada - WHMIS**

This product has a WHMIS classification of C, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

#### **Canadian Ingredient Disclosure List**

CAS# 10031-43-3 (listed as Copper compounds, n.o.s.) is listed on the Canadian Ingredient Disclosure List.

CAS# 3251-23-8 is listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 5/07/1998

**Revision #5 Date:** 3/15/2007

*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 Fisher 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 Fisher has been advised of the possibility of such damages.*