**Copper (II) Nitrate Hemipentahydrate**

**0544**

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### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Mides Name:** Copper (II) Nitrate Hemipentahydrate  
**Catalog Numbers:** G7321, C677 500, C679-500, C677500  
**Synonyms:** Cupric Nitrate Hemipentahydrate; Copper Dinitrate Hemipentahydrate; Nitric Acid Copper Salt Hemipentahydrate  
**Company Identification:**  
- **Reagent**  
- **Chemical**

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### SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

- **CAS:** 19002-20-0  
- **RIMCSS:**

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### SECTION 3 - HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**Appearance:** Strong oxidizer. Contact with other materials may cause fire. May cause allergic skin reaction. May cause liver and kidney damage. May cause severe eye and skin irritation with possible burns. Causes respiratory tract irritation with possible burns.

- **Set Coats:** 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. May cause conjunctivitis. May cause permanent ocular pacification.
- **Skin:** May cause severe irritation and possible burns. 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 respiratory tract irritation with possible burns. May cause skin discoloration. May cause skin irritation. May cause skin irritation.
- **Inhalation:** May cause methemoglobinemia, cyanosis, convulsions, tachycardia, dyspnea, and death. May cause acute pulmonary edema, hemorrhage of the digestive tract, and subcutaneous emphysema. May cause respiratory tract irritation and inflammation. May cause acute respiratory distress syndrome, asphyxia, chemical pneumonitis, and upper airway obstruction caused by edema, unlisted.

**Chronic:** Subacute inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. May cause liver and kidney damage. May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shallowness, cyanosis, rapid heart rate, and unconsciousness and possible death. Individuals with Wilson's disease are unable to metabolize the copper in the body. The copper accumulates in various tissues and may result in liver, kidney, and brain damage.

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### SECTION 4 - FIRST AID MEASURES

- **Eye:** 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. If necessary, flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
- **Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cups of milk or water. Get medical aid immediately.

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### SECTION 5 - FIRE FIGHTING MEASURES

**General Information:** As in any fire, use a dry chemical or carbon dioxide extinguisher or a propellant, pressurized dry chemical extinguisher. Do not use water on a fire involving copper. Do not use saline solution or chemical extinguishers.

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### SECTION 6 - ACCIDENTAL RELEASE MEASURES

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Do not enter spill without protective clothing. Avoid spills in enclosed areas or areas where high temperatures or dusts are present. Do not use combustible materials such as paper towels to clean up spills.

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### SECTION 7 - HANDLING AND STORAGE

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. May cause respiratory tract irritation with possible burns. May cause liver and kidney damage. May cause central nervous system depression and multiple organ system failure. May cause severe burns. Keep away from heat, sparks, and flame. Do not store near combustible materials.

**Storage:** Keep away from heat, sparks, and flame. Do not store near combustible materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

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### SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

**Engineering Controls:** Use with adequate ventilation to keep airborne concentrations low.

**Exposure Limits:**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (II) Nitrate Hemipentahydrate</td>
<td>0.02 mg/m³ (TWA)</td>
<td>0.01 mg/m³ (TWA)</td>
</tr>
</tbody>
</table>

**OSHA Vacated PEL:**

- **Copper (II) Nitrate, Hemipentahydrate:**
  - Fume, as Cu: 0.1 mg/m³ TWA (listed under ** no name **)

**Personal Protective Equipment**

- **Eyes:** Wear appropriate protective eyewear as described by OSHA's eye and face protection standards.

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**OSHA Occupational Health Standards:**

- **Copper (II) Nitrate, Hemipentahydrate:**
  - Fume, as Cu: 0.1 mg/m³ TWA (listed under ** no name **)
protection regulations in 29 CFR 1910.133 or European
Standard EN169.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear a chemical apron. Wear appropriate clothing to
prevent skin exposure.

Respirators: Wear a NIOSH/MSHA or European Standard EN 149
approved full-facepiece airline or equivalent in the
positive pressure mode with emergency escape
provisions.

*** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ***

Physical State: Solid

Appearance: Blue

Odor: Odorless

Physical Property: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Boiling Point: Not available.

Decomposition Temperature: Not available.

Autoignition Temperature: Not available.

Flash Point: Not available.

NFPA Rating: (ext.) Health: 2; Flammability: 0; Reactivity: 1

Explosion Limits, Lower: Not available.

Explosion Limits, Upper: Not available.

Solubility: Soluble in water.

Specific Gravity/Density: 1.0

Molecular Formula: CUN206.2.5H2O

Molecular Weight: 224.5896

*** 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, ignition sources, dust generation,
combustible materials, reducing agents, organic material.

Incompatibilities with Other Materials: Reducing agents.

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

Hazardous Polymerization: Has not been reported.

*** SECTION 11 - TOXICOLOGICAL INFORMATION ***

PTSDH:
CAS #: 19004-19-4 unlabeled.
LD50/LC50: Not available.

Carcinogenicity: Copper (II) Nitrate, Hemipentahydrate - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Other Studies: No data available.

*** SECTION 12 - ECOLOGICAL INFORMATION ***

*** SECTION 13 - DISPOSAL CONSIDERATIONS ***

Disposal of in a manner consistent with federal, state, and local regulations.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

*** SECTION 14 - TRANSPORT INFORMATION ***

US DOT
Shipping Name: NITRATES, INORGANIC N.O.S.
Hazard Class: 5.1

*** SECTION 15 - REGULATORY INFORMATION ***
OREL-GERMANY: TWA 1 mg/m³
OREL-GERMANY: STEL 0.4 mg/m³ (dust)
OREL-HUNGARY: TWA 0.2 mg/m³
OREL-HUNGARY: STEL 0.2 mg/m³ (dust)
OREL-INDIA: TWA 0.2 mg/m³ (fume)
OREL-INDIA: STEL 0.2 mg/m³ (fume)
OREL-IRELAND: TWA 0.2 mg/m³ (fume)
OREL-IRELAND: STEL 0.2 mg/m³ (fume)
OREL-ITALY: TWA 0.1 mg/m³ (fume)
OREL-ITALY: STEL 0.1 mg/m³ (fume)
OREL-MEXICO: TWA 0.1 mg/m³ (total dust)
OREL-MEXICO: STEL 0.1 mg/m³ (total dust)
OREL-MEXICO: TWA 0.1 mg/m³ (total dust)
OREL-MEXICO: STEL 0.1 mg/m³ (total dust)
OREL-NETHERLANDS: TWA 0.2 mg/m³ (dust)
OREL-NETHERLANDS: STEL 0.2 mg/m³ (dust)
OREL-POLAND: TWA 0.1 mg/m³ (fume)
OREL-POLAND: STEL 0.1 mg/m³ (fume)
OREL-POLAND: TWA 0.1 mg/m³ (fume)
OREL-POLAND: STEL 0.1 mg/m³ (fume)
OREL-PORTUGAL: TWA 0.1 mg/m³ (fume)
OREL-PORTUGAL: STEL 0.1 mg/m³ (fume)
OREL-REPUBLIC OF KOREA: TWA 0.1 mg/m³ (fume)
OREL-REPUBLIC OF KOREA: STEL 0.1 mg/m³ (fume)
OREL-SWEDEN: TWA 0.2 mg/m³ (reap. dust)
OREL-SWEDEN: STEL 0.2 mg/m³ (reap. dust)
OREL-SWEDEN: TWA 0.2 mg/m³ (fume)
OREL-SWEDEN: STEL 0.2 mg/m³ (fume)
OREL-SWITZERLAND: TWA 0.2 mg/m³ (fume)
OREL-SWITZERLAND: STEL 0.2 mg/m³ (fume)
OREL-TAIWAN: TWA 1 mg/m³
OREL-TAIWAN: STEL 1 mg/m³
OREL-TAIWAN: TWA 1 mg/m³
OREL-TAIWAN: STEL 1 mg/m³

**** SECTION 16 - ADDITIONAL INFORMATION ****

The information above is believed to be accurate and represents the best
ingformation 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 way shall the company 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, however arising, even if the company has been advised of
the possibility of such damages.