CUPROUS OXIDE
MATERIAL SAFETY DATA SHEET

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000
24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

MSDS Number: C933
Revision Date: 16-Apr-08
Revision No.: 003

Product Identification

Product Name: CUPROUS OXIDE
Synonyms: Copper (I) oxide; Red copper oxide; Brown copper oxide
Chemical Formula: Cu2O
Formula Weight: 143.09
Chemical Family: Integra Product Numbers: C933.10

Hazard Overview

HMIS Rating: 2-0-1-E NFPA Rating: NE
Warning Label:

Warning.
May be harmful if swallowed or inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing dust. Wash thoroughly after handling.

Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (I) oxide</td>
<td>01317-39-1</td>
<td>100</td>
</tr>
</tbody>
</table>

Physical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>1800 °C</td>
</tr>
<tr>
<td>Melting Point</td>
<td>1232 °C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>6.00</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>NA</td>
</tr>
</tbody>
</table>

Solubility:
Negligible (<0.1%) solubility in water.

Appearance and Odor:
Red to brown powder.

Fire and Explosion Data

Flash Point: NA
Auto-ignition Temperature: NA
Flammable Limits (% by volume in air): Upper: NA Lower: NA
Fire Extinguishing Media:
Material is not flammable. Use extinguishing media suitable to surrounding materials.

Special Firefighting Procedures:
Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.

Unusual Fire and Explosion Hazards:
None identified

Health Hazard Information

Effects of Overexposure
Skin Contact:
Contact may cause skin irritation.
Health Hazard Information

Eye Contact:
Contact may be irritating to the eyes.

Ingestion:
May be harmful if swallowed.

Inhalation:
Inhalation may irritate the nose, throat and upper respiratory tract.

Chronic Effects of Overexposure:
None Identified

Exposure Limits:

<table>
<thead>
<tr>
<th>Component</th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
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OSHA PEL

ACGIH TLV

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Toxicity Data:

Copper (I) oxide No information available

Medical Conditions Generally Aggravated by Exposure:

None Identified

Target Organs:

None Identified

Reproductive Effects:

None Identified

Carcinogenicity:

None Identified

<table>
<thead>
<tr>
<th>Component</th>
<th>NTP Listing</th>
<th>IARC Listing</th>
<th>OSHA Regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (I) oxide</td>
<td>No listing</td>
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<td></td>
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</table>

Emergency First Aid Procedures

Skin Contact:
Wash with soap and water. Seek medical attention if irritation develops.

Eye Contact:
Flush with water for at least 15 minutes. Seek immediate medical attention.

Inhalation:
Remove to fresh air. If breathing difficulty persists seek immediate medical attention.

Ingestion:
Give victim large amounts of water and induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

Additional First Aid and Treatment Notes:
No information available

Reactivity Data

Stability: Stable
Reactivity Data

Hazardous Polymerization: Will Not Occur
Incompatibles:
No information available.
Decomposition Products:
Copper oxides.
Conditions to Avoid:
Moisture. Exposure to air.

Spill and Disposal Procedures

Spill and Leak Procedures:
Prevent spread of spill. Sweep or scoop into disposal container. Flush residues with water. Wear suitable protective equipment.
Disposal Procedures:
Dispose in accordance with all Local, State and Federal regulations.

Protective Equipment

Ventilation:
Use adequate general or local exhaust ventilation to keep fume and/or dust levels as low as possible.
Respiratory Protection:
None needed unless use generates annoying or irritating dusts, mists or vapors. Use a dust/mist respirator mask if necessary.
Skin and Eye Protective Equipment:
Safety goggles, protective clothing and gloves. Maintain an eyewash station and safety shower nearby.

Storage and Handling Precautions

Storage Area: GENERAL
Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Protect containers from physical damage.

Transportation Information

☐ Regulated Material domestic ground transportation
  (reference: CFR Title 49, Transportation)
  Proper Shipping Name: 
  UN or NA Identification number: 
  Hazard Class and Label: 
  Packing Group: 
  Subsidiary Risk and Label:

☐ Regulated Material via Air Transportation
  (reference: ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air)
  Proper Shipping Name: 
  UN Identification Number: 
  Hazard Class and Label: 
  Packing Group: 
  Subsidiary Risk and Label:
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