Material Safety Data Sheet
Copper(II) oxide

MSDS# 05655

Section 1 - Chemical Product and Company Identification

MSDS Name: Copper(II) oxide
Catalog Numbers: AC192910000, AC192910050, AC192910250, AC197440000, AC197440250, AC197445000
AC197445000, AC221280000, AC221281000, AC405860000, AC405860050, AC405860250
AC405860250, AC405862500, AC405865000, C470-500, C472-500, C474-500
Synonyms: Cupric oxide; Copper monoxide.

Company Identification: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
For information in the US, call: 201-796-7100
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#: 1317-38-0
Chemical Name: Copper(II) oxide
%: 97.5+
EINECS#: 215-269-1

Hazard Symbols: XN N
Risk Phrases: 22 50

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Warning! May cause respiratory tract irritation. Harmful if swallowed. Causes eye and skin irritation. Very toxic to aquatic organisms. Target Organs: Eyes, skin.

Potential Health Effects
Eye: Causes eye irritation.
Skin: Causes skin irritation. May be harmful if absorbed through the skin.
Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause nausea and vomiting.
Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.
Chronic: No information found.

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.
Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: Do not induce vomiting. Get medical aid immediately. Call a poison control center.
Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled.
Inhalation: the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.
  - Autoignition: Not applicable.
  - Temperature: Not applicable.
  - Flash Point: Not applicable.

Explosion Limits: Not available
  - Lower:
  - Upper:

NFPA Rating: health: 2; flammability: 1; instability: 0;

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. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper(II) oxide</td>
<td>none listed</td>
<td>0.1 mg/m³ TWA</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Copper(II) oxide: None listed

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

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 protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Powder
Color: black
Odor: odorless
pH: 7 (50g/L aq. sol.)
Vapor Pressure: Not applicable.
Vapor Density: Not available
Evaporation Rate: Not applicable.
Viscosity: Not available.
Boiling Point: Not available
Freezing/Melting Point: 1326 deg C (2,418.80°F)
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: Not available.
Molecular Formula: CuO
Molecular Weight: 79.54

Section 10 - Stability and Reactivity
Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, dust generation, excess heat.
Incompatibilities with Other Materials: Strong oxidizing agents, reducing agents, alkali metals, finely powdered metals, acetylene, azides, hydrazine derivatives.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, oxides of copper, copper fumes.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information
RTECS#: CAS# 1317-38-0: GL7900000
LD50/LC50: CAS# 1317-38-0: Oral, rat: LD50 = 470 mg/kg;
Carcinogenicity: Copper(II) oxide - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

Section 12 - Ecological Information
Other: Do not empty into drains.

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information
US DOT
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOL
Hazard Class: 9
UN Number: UN3077
Packing Group: III
Canada TDG
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOL
Hazard Class: 9
UN Number: UN3077
Packing Group: III

Section 15 - Regulatory Information
European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN N
Risk Phrases:
R 22 Harmful if swallowed.
R 50 Very toxic to aquatic organisms.

Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
S 29 Do not empty into drains.
S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)
CAS# 1317-38-0: 0

Canada
CAS# 1317-38-0 is listed on Canada's DSL List
Canadian WHMIS Classifications: D1B, 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.
CAS# 1317-38-0 is not listed on Canada's Ingredient Disclosure List.

US Federal
TSCA
CAS# 1317-38-0 is listed on the TSCA Inventory.

Section 16 - Other Information
MSDS Creation Date: 12/12/1997
Revision #8 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility 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 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 howsoever arising, even if the company has been advised of the possibility of such damages.

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