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MSDS Number: **C5885** \* \* \* \* *Effective Date: 01/31/00* \* \* \* \* *Supersedes: 12/08/96*

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**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865



Mallinckrodt  
CHEMICALS



24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

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# CUPRIC OXIDE

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## 1. Product Identification

**Synonyms:** Black copper oxide; copper (II) oxide

**CAS No.:** 1317-38-0

**Molecular Weight:** 79.55

**Chemical Formula:** CuO

**Product Codes:**

J.T. Baker: 1814, 1820, 5255, 5256

Mallinckrodt: 3887, 4832

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## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
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Cupric Oxide	1317-38-0	100%	Yes

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## 3. Hazards Identification

## Emergency Overview

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**WARNING! HARMFUL IF SWALLOWED. AFFECTS THE LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**

**J.T. Baker SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

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Health Rating: 2 - Moderate

Flammability Rating: 1 - Slight

Reactivity Rating: 0 - None

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Orange (General Storage)

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## Potential Health Effects

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### Inhalation:

Causes irritation to respiratory tract, symptoms may include coughing, sore throat, and shortness of breath. May result in ulceration and perforation of respiratory tract. When heated, this compound may give off copper fume, which can cause symptoms similar to the common cold, including chills and stuffiness of the head.

### Ingestion:

Systemic copper poisoning may result from ingestion of this compound. Symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous excitation followed by depression, jaundice, convulsions, blood effects, paralysis and coma. Death may occur from shock or renal failure.

### Skin Contact:

Causes irritation, redness, pain.

### Eye Contact:

Causes irritation with redness, pain. May cause eye damage.

### Chronic Exposure:

Prolonged or repeated skin exposure may cause dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discoloration of the skin or hair, blood and liver damage, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes.

### Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders, impaired liver, kidney, or pulmonary function, glucose 6-phosphate-dehydrogenase deficiency, or pre-existing Wilson's disease may be more susceptible to the effects of this material.

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## 4. First Aid Measures

### Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

### Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician immediately.

### Skin Contact:

In case of contact, wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

Not considered to be a fire hazard. Large masses exposed to moist air at over 100C can result in spontaneous combustion.

**Explosion:**

Not considered to be an explosion hazard. Reactions with incompatibles may pose an explosion hazard.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL):

1 mg/m<sup>3</sup> (TWA) for copper dusts & mists as Cu

-ACGIH Threshold Limit Value (TLV):

1 mg/m<sup>3</sup> (TWA) for copper dusts & mists as Cu

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

Black to brownish-black powder, granules, or wire.

**Odor:**

Odorless.

**Solubility:**

Insoluble in water.

**Density:**

6.32 @ 14C/4C

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

Not applicable.

**Melting Point:**

1026C (1879F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

### Stability:

Stable under ordinary conditions of use and storage.

### Hazardous Decomposition Products:

Toxic metal fumes may form when heated to decomposition.

### Hazardous Polymerization:

Will not occur.

### Incompatibilities:

Aluminum, boron, cesium acetylene carbide, dirubidium acetylide, hydrazine, hydrogen, hydrogen sulfide, lead oxide, magnesium, metals, phospham, potassium, phthalic anhydride, rubidium acetylene carbide, sodium, titanium, and zirconium. Forms acetylides with acetylene, sodium hypobromite and nitromethane.

### Conditions to Avoid:

Incompatibles.

## 11. Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Cupric Oxide (1317-38-0)	No	No	None

## 12. Ecological Information

### Environmental Fate:

When released into the soil, this material is not expected to biodegrade. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly.

### Environmental Toxicity:

No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

Not regulated.

## 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----  
 Ingredient TSCA EC Japan Australia

Cupric Oxide (1317-38-0) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient Korea DSL NDSL Phil.  
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Cupric Oxide (1317-38-0) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient -SARA 302- -SARA 313-  
 RQ TPQ List Chemical Catg.

Cupric Oxide (1317-38-0) No No No Copper compo

-----\Federal, State & International Regulations - Part 2\-----

Ingredient CERCLA -RCRA- -TSCA-  
 261.33 8(d)

Cupric Oxide (1317-38-0) No No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No  
 SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No  
 Reactivity: No (Pure / Solid)

**Australian Hazchem Code:** None allocated.

**Poison Schedule:** None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

**NFPA Ratings:** Health: 2 Flammability: 1 Reactivity: 0

**Label Hazard Warning:**

WARNING! HARMFUL IF SWALLOWED. AFFECTS THE LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

**Label Precautions:**

Avoid breathing dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 3, 9, 16.

**Disclaimer:**

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