MSDS Number: **C5841** * * * * * *Effective Date:* ***08/02/00*** * * * * * *Supercedes:* ***09/10/97***

**MSDS** Material Safety Data Sheet

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

Mallinckrodt CHEMICALS J.T.Baker

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
Chemtrec: 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.

# CUPRIC BROMIDE

## 1. Product Identification

**Synonyms:** Copper (II) bromide
**CAS No.:** 7789-45-9
**Molecular Weight:** 223.37
**Chemical Formula:** CuBr2
**Product Codes:**
J.T. Baker: 1780
Mallinckrodt: 0459

## 2. Composition/Information on Ingredients

| Ingredient | CAS No | Percent | Hazardous |
|---|---|---|---|
| Cupric Bromide | 7789-45-9 | 100% | Yes |

## 3. Hazards Identification

**Emergency Overview**

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**WARNING! HARMFUL IF SWALLOWED. AFFECTS CENTRAL NERVOUS SYSTEM, BRAIN, EYES, LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.**

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

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Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 0 - None
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES
Storage Color Code: Orange (General Storage)

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**Potential Health Effects**

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Limited health hazard information was found for this material. Its hazards are assumed to be similar to other soluble copper and bromine salts.

**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:**
Single doses of bromide or copper salts can cause burning pain in the mouth, esophagus, and stomach. Hemorrhagic gastritis, nausea, vomiting, abdominal pain, metallic taste, and diarrhea may occur. If vomiting does not occur immediately, systemic poisoning can occur. For copper salts, symptoms may include capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, central nervous system excitation followed by depression, blood effects, jaundice, paralysis and coma. Death may occur from shock or renal failure. Form bromide salts, symproms of systemic poisoning may include drowsiness, irritability, dizziness, confusion, skin rash, blurred vision and other eye effects, mania and coma.

**Skin Contact:**
May act as irritants, producing itching eczema, redness and pain.

**Eye Contact:**
Copper salts may produce conjunctivitis or even ulceration of the cornea.

**Chronic Exposure:**
Prolonged or repeated skin exposure to copper salts may cause dermatitis. Prolonged or repeated exposure to dusts of copper salts may cause discoloration of the skin or hair, liver damage, blood effects, ulceration and perforation of the nasal septum, runny nose, metallic taste, and atrophic changes and irritation of the mucous membranes. Symptoms of chronic bromide poisoning may include skin rashes, central nervous system depression, ataxia, psychoses, memory loss, appetite loss and coma.

**Aggravation of Pre-existing Conditions:**
Persons suffering from skin disorders, impaired liver, kidney or pulmonary function, glucose-6-phosphate dehydrogenase deficiency, debilitation, depression, alcoholism, neurological or psychological disorders, or pre-existing Wilson's disease may be more susceptible to the effects of this material.

# 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.
**Explosion:**
Reactions with incompatibles may pose an explosion hazard.
**Fire Extinguishing Media:**
Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
**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. Separate from incompatibilities. 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/m3 (TWA) for copper dusts & mists as Cu
-ACGIH Threshold Limit Value (TLV):
1 mg/m3 (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. Maintain eye wash fountain and quick-drench facilities in work area.

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# 9. Physical and Chemical Properties

**Appearance:**
Glistening, grayish black crystals.
**Odor:**
Slight odor of bromine.
**Solubility:**
Soluble in water (126 parts/100 parts water), alcohol, acetone, ammonia; insoluble in benzene.
**Specific Gravity:**
4.71
**pH:**
No information found.
**% Volatiles by volume @ 21C (70F):**
0
**Boiling Point:**
900C (1652F)
**Melting Point:**

498C (928F)
**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:**
Oxides of the contained metal and halogen, possibly also free, or ionic halogen.
**Hazardous Polymerization:**
Will not occur.
**Incompatibilities:**
Strong oxidizing agents; bases, acetylene, sodium hypobromite, nitromethane.
**Conditions to Avoid:**
Incompatibles.

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# 11. Toxicological Information

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

| --------\Cancer Lists\---------- | | | |
|---|---|---|---|
| | ---NTP Carcinogen--- | | |
| Ingredient | Known | Anticipated | IARC Category |
| ---------- | ----- | ---------- | ---------- |
| Cupric Bromide (7789-45-9) | No | No | None |

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# 12. Ecological Information

**Environmental Fate:**
When released into the soil, this material is not expected to biodegrade. When released into the soil, this material may leach into groundwater. When released into water, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material is expected to significantly bioaccumulate. This material has an experimentally-determined bioconcentration factor (BCF) of greater than 100. Bioaccumulation data for copper.
**Environmental Toxicity:**
This material is expected to be very toxic to aquatic life. The LC50/96-hour values for fish are less than 1 mg/l. The IC50/72-hour values for algae are less than 1 mg/l. Toxicity data for copper.

# 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 Bromide (7789-45-9) | Yes | Yes | Yes | Yes |

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

| Ingredient | Korea | --Canada-- DSL | NDSL | Phil. |
|---|---|---|---|---|
| Cupric Bromide (7789-45-9) | Yes | Yes | No | Yes |

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

| Ingredient | -SARA 302- RQ | TPQ | ------SARA 313------ List | Chemical Catg. |
|---|---|---|---|---|
| Cupric Bromide (7789-45-9) | No | No | No | Copper compo |

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

| Ingredient | CERCLA | -RCRA- 261.33 | -TSCA- 8(d) |
|---|---|---|---|
| Cupric Bromide (7789-45-9) | 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.

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# 16. Other Information

**NFPA Ratings:** Health: **2** Flammability: **0** Reactivity: **0**
**Label Hazard Warning:**
WARNING! HARMFUL IF SWALLOWED. AFFECTS CENTRAL NERVOUS SYSTEM, BRAIN, EYES, LIVER AND KIDNEYS. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
**Label Precautions:**
Avoid breathing dust.
Keep container closed.
Use only with adequate ventilation.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.
**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, wipe off excess material from skin then 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:**
No changes.
**Disclaimer:**
**********
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