U.S. HALOGENS, INC.

Material Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY UNDERTAKING:

1.1 Product Identifiers

Product name: Copper (II) Oxide
Synonyms: Black Copper Oxide; Cupric Oxide
Chemical formula: CuO
Product #: 144009
Brand: U.S. HALOGENS
CAS #: 1317-38-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, manufacture of substances

1.3 Details of the supplier of the safety data sheet

U.S. HALOGENS, INC.
6400 S. FIDDLERS GREEN CIR
GREENWOOD VILLAGE, CO 80111
U.S.A.
products@ushalogens.com

2. COMPOSITION / INFORMATION ON INGREDIENT(S) :

2.1 Chemical formula

CuO

2.2 Molecular weight

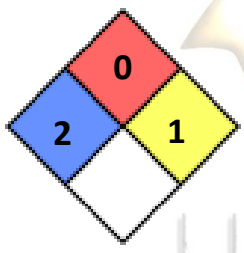
79.55 g/mol

2.3 Component

Cupric Oxide

3. HAZARDS IDENTIFICATION :

3.1 NFPA 704 Code



Details

Stability code: Normally stable, but can become unstable at elevated temperatures and pressures.
Flammability code: Will not burn.
Health code: Intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury.
Special hazards: none

3.2 Classification

Very toxic to aquatic organisms.

3.3 Primary routes of exposure

ingestion, inhalation

3.4 Eye contact

May be a mild to severe irritant to the eyes.

3.5 Skin contact

May cause dryness of the skin.

3.6 Inhalation

Do not breathe dust. Inhalation may lead to irritation of the respiratory tract.

3.7 Ingestion

May be harmful if swallowed.

3.8 Important health effects

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, hypotension (low blood pressure), central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, liver and kidney defects. Copper deposition in the cornea as exemplified by humans with Wilson's disease.

3.9 Acute health effects

May be irritating to skin, eyes, mucous membranes, and respiratory tract. Do not inhale dust

4. FIRST AID MEASURES :

4.1 Description of first aid measures

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled: If breathed in, move the person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water.

In case of eye contact: Rinse thoroughly with water for at least 15 minutes and consult a physician.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. ACCIDENTAL RELEASE MEASURES :

5.1 Personal precautions, protective equipment, and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

5.2 Environmental precautions

Do not let the product enter drains.

5.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable closed containers for disposal.

6. HANDLING AND STORAGE :

6.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

6.2 Conditions for safe storage

Store in a cool place. Keep container tightly closed in a dry and well-ventilated place.

7. FIREFIGHTING MEASURES :

7.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

7.2 Further information

Use water spray to cool unopened containers.

8. EXPOSURE CONTROL / PERSONAL PROTECTION :

8.1 Exposure controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands during breaks and at the end of work day.

8.2 Personal protective equipment

Eye and face protection

Safety glasses with side-shields conforming to NIOSH (US) or EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.

Wash and dry hands.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES :

9.1 Information on basic physical and chemical properties

a) Appearance / Form: black powder
b) Odor: no data available
c) pH no data available
d) Freezing point: no data available
e) Melting point: 1,326°C
f) Boiling point: 2,000°C
g) Flash point: not applicable
h) Evaporation rate: no data available
i) Flammability (solid, gas): flammable
j) Upper/lower flammability or explosive limits: no data available
k) Vapor pressure: no data available
l) Vapor density: no data available
m) Relative density: 6.32 g/cm3
n) Water solubility: insoluble
o) Auto-ignition temperature: no data available
p) Decomposition temperature: no data available
r) Viscosity: no data available

10. STABILITY AND REACTIVITY :

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Conditions to avoid
no data available

10.4 Incompatible materials
Halogens, Strong oxidizing acids, Weak acids, Reducing agents, Aluminum, Alkali metals, Powdered metals

10.4 Hazardous decomposition products
Other decomposition products - no data available

11. DISPOSAL CONSIDERATIONS :

11.1 Waste treatment methods
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

12. TRANSPORT INFORMATION :

12.1 UN number
ADR/RID: 3077 - IMDG: 3077 - IATA: 3077

12.2 UN proper shipping name
ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide)
IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide)
IATA: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper oxide)

12.3 Transport hazard class(es)
ADR/RID: 9 - IMDG: 9 - IATA: 9

12.4 Packaging group
ADR/RID: III - IMDG: III - IATA: III

12.5 Environmental hazards
ADR/RID: yes - IMDG Marine pollutant: yes - IATA: yes

12.6 Special precautions for user
no data available

13. OTHER INFORMATION :

For further information please contact products@ushalogens.com

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Ya-Aiqab Laboratories Co. and its Affiliate U.S. Halogens, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See www.ushalogens.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.