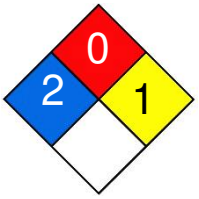
Material Safety Data Sheets



Revision 2

1. IDENTIFICATION

Product Name	**Cupric Oxide**
Other Names	Black Copper Oxide; Copper(II) oxide
Uses	Colourant in ceramic, anti-fouling paints; reagent; catalyst; solvent; electroplating; metallurgical and welding fluxes.
Chemical Family	No Data Available
Chemical Formula	CuO
Chemical Name	Copper oxide
Product Description	No Data Available

Company	**Arman sina.co**
Contact Information	info@armansina.com **www.armansina.com**

2. HAZARD IDENTIFICATION

Hazard Categories

irritation

Risk Phrases

Harmful to environment

Harmful if swallowed.

Causes eye irritation.

May cause damage to organs through prolonged or repeated exposure.

Very toxic to aquatic life with long lasting effects.

Hazardous to terrestrial vertebrates

Safety Phrases

Avoid release to the environment.

Wash exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Do not breathe dusts or mists.

Wear eye protection/face protection.

Collect spillage.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

Rinse mouth.

If eye irritation persists: Get medical advice.

Get medical advice if you feel unwell.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Dispose of contents/container in accordance with local / regional / national / international regulations.

Symbol

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Copper(II) oxide	CuO	1317-38-0	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. Call a Poison Centre or doctor/physician if you feel unwell.

Eye IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Skin IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.

Advice to Doctor Get medical advice/attention if you feel unwell. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
*Most important symptoms and effects, both acute and delayed: Harmful if swallowed. Causes eye irritation. May case damage to organs through prolonged or repeated exposure.

Medical Conditions Aggravated by Exposure **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.

5. FIRE FIGHTING MEASURES

General Measures If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Dike fire-control water for later disposal.

Flammability Conditions Non-combustible.

Extinguishing Media If material is involved in a fire, use dry chemical, Carbon dioxide (CO2), foam or water spray for extinction. Do not scatter spilled material with high-pressure water streams.
*Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Fire and Explosion Hazard Ambient fire may liberate hazardous vapours. Large masses exposed to moist air at over 100° C can result in spontaneous combustion.

Hazardous Products of Combustion Fire may produce irritating and/or toxic gases, including Copper oxides.

Special Fire Fighting Instructions Contain runoff from fire control water - Runoff may cause pollution.

Personal Protective Equipment Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Flash Point No Data Available

Lower Explosion Limit No Data Available

Upper Explosion Limit No Data Available

Auto Ignition Temperature No Data Available

Hazchem Code No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Remove all ignition sources. Do not touch or walk through spilled material. Clean up all spills immediately! Avoid generating dust. Do not breathe dusts or mists and avoid contact with eyes, skin and clothing.
Clean Up Procedures	Recover product wherever possible. With clean shovel, place material into clean, dry container and cover loosely; move containers from spill area.
Containment	Stop leak if you can do it without risk. Prevent dust cloud. Prevent entry into waterways, sewers, basements or confined areas.
Decontamination	Wash area down with large amounts of water and prevent runoff into drains.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

Personal Precautionary Measures Use personal protective equipment as required (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Avoid generating dust. Do not breathe dusts or mists and avoid contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
Storage	Store in a cool, dry and well-ventilated place, protected from direct sunlight. Keep container tightly closed. Protect against physical damage. Avoid exposure to moisture and air. Keep away from heat and sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10). Store locked up.
Container	Keep in the original container. *Containers of this material may be hazardous when empty since they retain product residues; Observe all warnings and precautions listed for the product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No specific exposure standard is available for this product. For Copper, dusts & mists (as Cu): - Safe Work Australia Exposure Standard: TWA = 1 mg/m3. DECOMPOSITION PRODUCT: Copper (fume): - Safe Work Australia Exposure Standard: TWA = 0.2 mg/m3.
Exposure Limits	No Data Available
Biological Limits	No information available.
Engineering Measures	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. 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.
Personal Protection Equipment	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust mask/particulate respirator. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive pressure, air-supplied respirator. - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Use equipment for eye protection tested and approved under appropriate government standards. - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Nitrile rubber. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Clean, body covering clothing.
Special Hazards Precaustions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and other protective equipment and wash before storage or reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Powder, granules or crystals
Odour	Odourless
Colour	Black or brownish-black
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	1,026 - 1,336 ° C
Freezing Point	No Data Available
Solubility	Insoluble in water
Specific Gravity	6.32
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	6.32 g/cm3
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	Hygroscopic.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	Non-combustible; Material does not burn. *Large masses exposed to moist air at over 100° C can result in spontaneous combustion.
Reactions That Release Gases or Vapours	Toxic metal fumes, including Copper oxides, may form when heated to decomposition.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	No information available.
Chemical Stability	Stable under ordinary conditions of use and storage.
Conditions to Avoid	Avoid generating dust.
Materials to Avoid	Risk of explosion with Aluminium. Violent reactions possible with Boron, hydrazine and derivatives, hydroxylamine, sodium, magnesium. Risk of ignition or formation of inflammable gases or vapours with hydrogen sulphide, Fluorine, silane, hydrides, Potassium, Acid anhydrides, Hydrogen.
Hazardous Decomposition Products	Toxic metal fumes, including Copper oxides, may form when heated to decomposition.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information

Toxicological information:
- Acute toxicity: Harmful if swallowed.
- Skin corrosion/irritation: Causes mild skin irritation.
- Serious eye damage/irritation: Causes eye irritation.
- Respiratory/skin sensitisation: Not sensitising [OECD 406; ECHA].
- Germ cell mutagenicity: Copper and copper compounds are not considered genotoxic [ECHA].
- Carcinogenicity: Copper compounds have no carcinogenic potential [ECHA].
- Reproductive toxicity: Copper has no reproductive or developmental toxicity potential [ECHA].
- STOT (single exposure): May cause respiratory tract irritation.
- STOT (repeated exposure): May cause damage to organs through prolonged or repeated exposure (affects the liver and kidneys). Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.
- Aspiration toxicity: No information available.

Information on likely routes of exposure:
- 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.
- Eye contact: Causes irritation with redness, pain.
- Skin contact: Causes irritation, redness, pain.
- 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.

Chronic effects: 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, atrophic changes and irritation of the mucous membranes.

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Hazardous to the aquatic environment (acute) – category 1 (M = 100). Hazardous to the aquatic environment (chronic) – category 1 (M = 10).
Persistence/Degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Mobility	No information available.
Environmental Fate	Very toxic to aquatic life with long lasting effects - Avoid release to the environment.

Bioaccumulation Potential	No information available.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility.
Special Precautions for Land Fill	Processing, use or contamination of this product may change the waste management options.

14. TRANSPORT INFORMATION

Land Transport

Proper Shipping Name	Cupric oxide
Class	No Data Available
Subsidiary Risk(s)	No Data Available
EPG	47 Low To Moderate Hazard Substances
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	AU01
Comments	UN#3077

Sea Transport

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID N.O.S. (Cupric oxide)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-F
Marine Pollutant	Yes

Air Transport

Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID N.O.S. (Cupric oxide)
Class	9 Miscellaneous Dangerous Goods and Articles
Subsidiary Risk(s)	No Data Available
UN Number	3077
Hazchem	2Z
Pack Group	III
Special Provision	No Data Available

15. OTHER INFORMATION

Revision 2

Key/Legend

< Less Than
> Greater Than
AICS Australian Inventory of Chemical Substances
atm Atmosphere
CAS Chemical Abstracts Service (Registry Number)
cm² Square Centimetres
CO2 Carbon Dioxide
COD Chemical Oxygen Demand
deg C (° C) Degrees Celcius
EPA (New Zealand) Environmental Protection Authority of New Zealand
deg F (° F) Degrees Farenheit
g Grams
g/cm³ Grams per Cubic Centimetre
g/l Grams per Litre
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health
immiscible Liquids are insoluable in each other.
inHg Inch of Mercury
inH2O Inch of Water
K Kelvin
kg Kilogram
kg/m³ Kilograms per Cubic Metre
lb Pound
LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.
ltr or L Litre
m³ Cubic Metre
mbar Millibar
mg Milligram
mg/24H Milligrams per 24 Hours
mg/kg Milligrams per Kilogram
mg/m³ Milligrams per Cubic Metre
Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.
mm Millimetre
mmH2O Millimetres of Water
mPa.s Millipascals per Second
N/A Not Applicable
NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Heath and Safety Commission
OECD Organisation for Economic Co-operation and Development
Oz Ounce
PEL Permissible Exposure Limit
Pa Pascal
ppb Parts per Billion
ppm Parts per Million
ppm/2h Parts per Million per 2 Hours
ppm/6h Parts per Million per 6 Hours
psi Pounds per Square Inch
R Rankine
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value
tne Tonne
TWA Time Weighted Average
ug/24H Micrograms per 24 Hours
UN United Nations
wt Weight