MATERIAL SAFETY DATA SHEET

SECTION 1. Identification of the Substance and Manufacturer

AMERICAN CHEMET CORPORATION
TECHNICAL GRADE CUPROUS OXIDE

Includes but not limited to the following Trade Names:
Red Copp 97N, Red Premium, Purple Copp 97, Purple Copp 97N, LoLo Tint 97, Chem Copp HP II, Chem Copp HPIII, Chem Copp Ultrafine and other technical grade Cuprous Oxides manufactured by American Chemet Corporation

Dicopper Oxide, Copper (I) Oxide, Red Copper Oxide

SECTION 2. Composition/Information of Ingredients

Ingredient	%	EC Number	CAS No.	Classification	R Phrases	Occupational Exposure Standards
Cuprous Oxide	95%	215-270-7	1317-39-1	Harmful	R22; R50/53	Copper as dusts & mist
Cupric Oxide	3%	215-269-1	1317-38-0			1 mg/m^3 8-hour
Metallic Copper	2%	231-159-6	7440-50-8			2 mg/m^3 15 min

8 hour – Long-term exposure limit (8-hour time weighted average reference period)
15 min – Short-term exposure limit (15 minute reference period)

SECTION 3. Hazard Identification

R22-Harmful if swallowed
HARMFUL

DANGEROUS FOR THE ENVIRONMENT

R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Primary Routes of Entry:

Inhaled ☒ Skin/Eye ☐ Swallowed ☒ Injected ☐

Signs, symptoms and effects of overexposure:

- Nausea, chills, diarrhea. May cause respiratory irritation, skin irritation (oxide pox); fever, eye irritation with redness, pain and conjunctivitis.
- Pre-existing lung disease may be aggravated by exposure. Could result in respiratory disease if overexposed on a chronic basis.

S22 – Do not breath dust

SECTION 4. First Aid Measures

INHALATION:	Remove to fresh air. Lay patient down. Cover with blanket.
INGESTION:	Give 200-300 mL water to drink. DO NOT induce vomiting.
SKIN CONTACT:	For skin exposure, remove contaminated clothing and wash with soap and water.
EYE CONTACT:	If irritated, flush eyes and skin with large volumes of fresh water for 15 minutes.
MEDICAL NOTES:	If any adverse symptoms persist seek immediate medical attention.

SECTION 5. Fire-Fighting Measures

Extinguishing Media:	CO_2, ABC extinguisher, or water spray.
Special Fire Fighting Procedures:	Separate from mass. Eliminate oxygen. Material is non-flammable. Use fire fighting measures appropriate to surrounding materials.
Special Exposure Hazards:	Cuprous oxide is stable in dry air, but can oxidize to cupric oxide in the presence of moist air at temperatures above 100°C.
Additional Information:	Collect contaminated fire fighting water separately. It must not enter the sewer system.

SECTION 6. Accidental Release Measures

Personal Precautions:	Spilled material may produce dust hazard if not handled correctly. Wear appropriate personal protective equipment: coveralls, gloves & eye protection.
Environmental Precautions:	Do not allow to enter drains or watercourses. If the product enters drains or sewers, immediately inform the local water company. Where there is contamination of streams, rivers or lakes, contact local agency with responsibility for the environment.
Methods for Clean Up:	Contain spillages and clean up with vacuum or conventional tools and attempt to minimize dusting. Place in a suitable container for recycling or disposal in accordance with local and national waste regulations.

SECTION 7. Handling and Storage

Handling:	Only use in a well-ventilated area and prevent the creation of dusts. If concentrations exceed the occupational exposure limits, use suitable respiratory protection.
Storage:	Store in a cool, dry, well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep lids of container tightly sealed.
Storage Class:	13 (VCI)

S60 – This material and its container must be disposed of as hazardous waste.

SECTION 8. Exposure Controls / Personal Protection

Occupational Exposure Controls:	All personal protective equipment, including respiratory equipment, used to control exposure to hazardous substances must be selected to meet the requirements of national personal protective equipment regulations.
Personal Protection:	
Ventilation:	To keep below the U.S.A. OSHA and EU exposure limits, use general dilution type ventilation.
Respiratory Protection:	Cartridge type particulate filter respirator or dust-mask conforming to U.S.A. NIOSH. Refer to Respiratory Protective Devices approved by NIOSH under 42 CFR 84 and the appropriate European standard.
Hand Protection:	Wear if skin contact is probable and skin is sensitive.
Eye Protection:	Safety glasses or goggles.
Skin Protection:	Long sleeve shirt(s) if contact is probable and skin is sensitive.
Environmental Protection:	Do not allow to enter drains or watercourses.

S22 – Do not breathe dust

SECTION 9. Physical and Chemical Properties

Appearance:	Red, Brown, or Purple Fine Powder		
Odour:	None	Vapor Pressure:	NA
Boiling Point:	NA	Vapour Density:	NA
Melting Point:	1235 ^{o}C	Evaporation Rate:	NA
Specific Gravity(H_2O=1)	6.0	Solubility in Water:	Negligible(<0.1%)
Bulk Density:	1,500 – 2,000 kg/m^3	Percent Volatile (v/v)	0%

SECTION 10. Stability and Reactivity

Stable__X_____ Unstable_____

Conditions & Materials to Avoid:

- Temperatures above 100 ^{o}C while in the presence of moist air.
- Mass build up under reactive conditions.
- Under certain conditions Cu_2O may react violently with strong reactants such as acids and bases.

Hazardous Decomposition Products: Copper fumes will be released if heated above its melting point (1235 ^{o}C).

Hazardous Polymerization: Will Not Occur

S61 – Avoid release to the environment. Refer to special instructions under Section 13.

SECTION 11. Toxicological Information

Acute Toxicity

Oral (Rat):	Harmful if swallowed	Skin Irritation:	Not classified as a skin irritant
Dermal (Rabbit):	Not classified	Eye Irritation:	Not classified as an eye irritant
Inhalation (Rat):	Not classified	Sensitization:	Not classified as a dermal sensitizer

SECTION 12. Ecological Information

Toxic to fish and other aquatic organisms.

Prevent from entering drains, sewers, and surface water.

R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S61 – Avoid release to the environment. Refer to special instructions/safety data sheet.

SECTION 13. Disposal Considerations

PACKAGING: Dispose of in accordance with procedures applying to the disposal of the product.
PRODUCT: Dispose of surplus and contaminated materials (including sawdust) at an approved landfill or in accordance with other national or regional provisions.

S60 – This material and its container must be disposed of as hazardous waste.

European Waste Catalogue:	
06 11 99	*Wastes not otherwise classified*

SECTION 14. Transportation Information

Domestic (U.S.A. DOT)

Proper Shipping Name: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dicopper oxide) , Class 9, PG III, MARINE POLLUTANT
Hazard Class: 9
U.S. EPA Reportable Quantity: 5,000 lbs (2,270 kg)

U.S. DOT EXEMPTION: Under 49 CFR 171.4, Except when transporting aboard a vessel, the requirements of this sub-chapter specific to marine pollutants do not apply to non-bulk packaging transported by motor vehicles, rail cars and aircraft.

. Land transport ADR/RID (cross-border)

- ***ADR/RID class:*** *9 (M7) Miscellaneous dangerous substances and articles*
- ***Danger code (Kemler):*** *90*
  - ***UN Number:*** *3077*
  - ***Packaging group:*** *III*
  - ***Hazard label:*** *9*
  - ***Description of goods:*** *3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dicopper oxide)*

- ***Maritime transport IMDG:***

- ***IMDG Class:*** *9*
- ***UN Number:*** *3077*
  - ***Label:*** *9*
  - ***Packaging group:*** *III*
  - ***Marine pollutant:*** *yes (contains copper)*
  - ***Proper shipping name:*** *ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dicopper oxide)*

- ***Air transport ICAO-TI and IATA-DGR:***

- ***ICAO/IATA Class:*** *9*
- ***UN/ID Number:*** *3077*
  - ***Label:*** *9*
  - ***Packaging group:*** *III*
  - ***Proper shipping name:*** *ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (dicopper oxide)*

SECTION 15. Regulatory Information

U.S. EPA EPCRA Section 313 Reportable Product
Hazard Symbols:
Xn: Harmful N: Dangerous for the environment

Risk Phrases:
R22 – Harmful if swallowed
R50/53 – Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
S2 – Keep out of the reach of children
S22 – Do not breathe dust
S60 – This material and its container must be disposed of as hazardous waste
S61 – Avoid release to the environment. Refer to special instructions/safety data sheet.

SECTION 16. Other Information

Keep out of reach of children. Read and follow all label instructions.