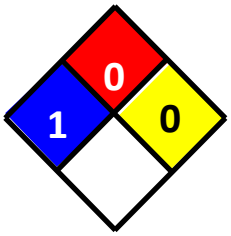
International Wire Group



HEALTH	1	
FLAMMABILITY	0	
REACTIVITY	0	
PROTECTIVE EQUIPMENT		

Tin Coated Copper Wire

NFPA RATING HMIS RATING

SECTION I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Bare Copper Wire; Single & Multiple Stand Construction

Manufacturer/Vendor Information:

IWG Omega Wire, Inc.
12 Masonic Avenue
Camden, NY 13316

IWG High Performance Conductors
1570 Campton Road
Inman, SC 29349

Phone: (315) 245-3800 (864) 472-0481
Fax: (315) 245-4392 (864) 472-3381

24-Hour Emergency Phone: (800) 424-9300 Chemtrec

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the Substance

GHS-US classification

H302 – Harmful if swallowed
H333 – May be harmful if inhaled
H372 – Causes damage to organs through prolonged or repeated exposure
H400 – Very toxic to aquatic life
H412 – Harmful to aquatic life with long lasting effects

2.2 Unclassified Hazards

2.2.1 This material is stable under most conditions and presents minimal risk in the solid form as shipped, but thermal decomposition can create toxic vapors, gases, or fumes.

2.2.2 Abrasion, grinding, cutting, melting, welding, or other operations which reduce the particle size of the material will change the hazard classification of the product.

2.2.3 Reduction of the product into a dust or fume can create a hazard if the dust or fume becomes airborne in the presence of a spark or ignition source.

2.2.4 This material as a dust or fume poses a health hazard when inhaled and / or ingested.

2.2.5 The tin coating contains a mean of 250 ppm lead.

SECTION 2. HAZARDS IDENTIFICATION (Con't)

2.3 Unknown Acute Toxicity

No data available on copper inhalation acute toxicity. CDC (ASTDR) has established a minimal risk level for ingested copper at 0.01 mg/kg/day for acute oral exposure (1-14 days). No data available on tin acute toxicity. Lead exposure routes are ingestion, inhalation and dermal absorption. CDC (ASTDR) determined that lead acetate in cosmetics applied by to volunteers to skin resulted in less than 0.3% absorption of the dose (2005).

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

CAS No.	Chemical Name	% by wt.
7440-50-8	Copper	97.8 - 99.5
7440-31-5	Tin	0.5 – 2.2

SECTION 4. FIRST AID

4.1 Instructions

4.1.1 Eyes: If dust or fume contacts the eyes, flush with plenty of water for at least 15 minutes. Get medical attention if irritation persists.

4.1.2 Skin: Wash with soap and water. Get medical attention if irritation develops or persists.

4.1.3 Ingestion: Rinse mouth. If conscious, induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

4.1.4 Inhalation: If exposed to excessive levels of dusts or fumes, move to fresh air and get medical attention if cough or other symptoms develop. If not breathing administer CPR.

4.2 Signs and Symptoms

Irritation of eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis.

ACUTE **"Metal Fume Fever" Symptoms include: irritation of eyes, nose, throat, and skin; flu-like symptoms – sudden or delayed onset of chills, weakness, fatigue, nausea, vomiting, headache, diarrhea, muscular pains; tightness of chest; paralysis; loss of consciousness or death.**

4.3 Note to Physician

Wilson's Disease or G6PD deficiency causes individuals to absorb, retain, and store copper excessively, leading to copper toxicosis.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Fire Fighting / Extinguishing Media: Particulate copper fire utilize: powdered dolomite, sodium chloride, graphite, foam, sand, water spray. Do not use a heavy water stream.

5.2 Fire Fighting Procedures:

5.2.1 Evacuate area and fight fire from a safe distance. As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear. Avoid direct water stream on molten material. Molten state explodes upon contact with water.

5.2.2 Particulate copper powder is a moderate fire hazard. For copper fires do not use water; apply powdered dolomite, sodium chloride, or graphite. Material as shipped does not support combustion. Use fire extinguishing media appropriate for surrounding material.

5.2.3 If allowable, ensure reject fire-fighting water does not enter the environment.

5.3 Fire and Explosion Hazards: Heavy airborne concentrations of fine powder in enclosed spaces may ignite or explode in the presence of an ignition source.

SECTION 5. FIRE FIGHTING MEASURES (Con't)

5.4 Unusual Hazards: Toxic gases and vapors may be released in a fire. In the presence of halogens, copper powder may become explosive with heat, percussion, or light friction. In the presence of wet acetylene and ammonia, copper forms explosive acetylides.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Use clean up measures that avoid dust generation (mist with water, wet vacuum). Wear a NIOSH/MSHA approved respirator if dust will be generated in clean-up. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to environment.

Refer to Section 8. Exposure Controls / Personal Protection

SECTION 7. HANDLING AND STORAGE

7.1 Handling Information
Not hazardous with intended use and / or in stable solid state.

7.2 Storage Information
Do not store near strong acids, bases or oxidizing agents or incompatible materials as described in Section 10.5.

7.3 Other Precaution
Minimize dust/fume generation and accumulation. Provide good ventilation in process area to prevent formation of vapor. Avoid inhalation of dust or fume. Wash hands and exposed skin with mild soap and clean water after handling. Wash excess dust from skin.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Limits
8.1.1 Copper: ACGIH TWA: 1 mg/m^3 (dusts & mists), ACGIH TWA: 0.2 mg/m^3 (fume), OSHA PEL TWA: 1 mg/m^3 (dust), OSHA PEL TWA: 0.1 mg/m^3 (fume).
8.1.2 Tin: NIOSH REL: 2 mg/m^3, OSHA PEL: TWA 2 mg/m^3

8.2 Engineering Controls
If user operations generate dust or fume, use ventilation to keep exposure to airborne contaminants below the exposure limits.

8.3 PPE
8.3.1 Eye Protection: If user operations generate dust or fume use safety glasses with side-shields or goggles.
8.3.2 Skin Protection: Use protective clothing to prevent repeated or prolonged skin contact. Wash hands and exposed areas with mild soap and water.
8.3.3 Respiratory Protection: A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. For concentrations up to 10 times the exposure limit, use NIOSH or MSHA approved half- or full-face, air-purifying respirator. For higher concentrations, consult a professional industrial hygienist.

SECTION 9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Grey to almost silver-white, ductile, malleable, lustrous metal. Solid.
Odor: No odor.
Melting Point: 998° C
Boiling Point: 2562° C
Relative Density/Specific Gravity: 8.90
Vapor Pressure: 1 mm H at 879° C
Solubility in Water: Insoluble
**Data regarding the heat of vaporization, vapor density, odor threshold, pH, freezing point, flash point, evaporation rate, relative density, flammability limits (upper/lower), flammability (solid, gas), partition coefficient: n-octanol/water, auto ignition temperature, decomposition temperature, and viscosity, is not available at this time.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity
No additional information available.

10.2 Chemical Stability
Noncombustible solid in bulk form, but powdered form may ignite.

10.3 Possibility of Hazardous Reactions
Not established.

10.4 Conditions to Avoid
Direct sunlight. Extremely high or low temperatures.

10.5 Incompatible Materials
10.5.1 Copper: Potentially explosive with acetylinic compounds (C_2H_2), 3-bromopropene (BrO_3^-), ethylene oxide (C_2H_4O), lead azide ($Pb(N_3)_2$), fused ammonium nitrate (NH_4NO_3), nitrosyl fluoride (FNO) and iodine pentafluoride (IF_5). Ignites on contact with chlorine (Cl), fluorine (F_2), and hydrazine mononitrate ($H_5N_3O_3$). Reacts violently with sodium azide (NaN_3), halogenates, peroxides - hydrogen peroxide (H_2O_2) & sodium peroxide (Na_2O_2), hydrogen sulfide (H_2S), hydrazoic acid (HN_3), bromates (BrO_3^-), chlorates (ClO_3^-), iodates ($NaIO_3$), chloride (Cl-), hypochlorites (ClO-), potassium oxide (K_2O), potassium hydroxide (KOH), copper nitrate ($Cu(NO_3)_2$), sulfur (S); strong acids, strong bases, oxidizers.

10.5.2 Tin: Chlorine (Cl), turpentine ($C_{10}H_{16}$), acids, alkalis.

10.6 Hazardous Decomposition Products
Toxic metal fumes. Copper oxide.

SECTION 11. TOXICOLOGICAL INFO

11.1 Route(s) of Exposure
Inhalation, eye, and ingestion of dust or fume.

11.2 Effects of Overexposure
Mild to moderate exposure: Ingestion or inhalation may cause irritation of the respiratory tract, moderate stomach irritation, and skin dysfunction including discoloration. Dust or fume may cause eye irritation. Dust may cause skin irritation.

Chronic Exposure: Skin sensitization; neurological damage; respiratory disease; and kidney dysfunction.

Acute Exposure**:** "Metal Fume Fever" due to overexposure to welding gases or lack of oxygen, characterized by metallic taste in mouth.

Target Organs: Eyes, skin, respiratory system, liver, kidneys (increased risk with Wilson's disease).

Medical Conditions Aggravated by Exposure: Wilson's disease

11.3 Signs and Symptoms
Irritation of eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis.

ACUTE "Metal Fume Fever" Symptoms include: irritation of eyes, nose, throat, and skin; flu-like symptoms – sudden or delayed onset of chills, weakness, fatigue, nausea, vomiting, headache, diarrhea, muscular pains; tightness of chest; paralysis; loss of consciousness or death.

11.4 Carcinogenicity

Copper:	**NTP:** No	**IARC:** No	**OSHA:** No
Tin:	**NTP:** No	**IARC:** No	**OSHA:** No

11.5 Toxicology Tests
Copper (7440-50-8)
Test : 1
LD/LC: LD_{50}
Test Type: Acute
Test Route: Intraperitoneal
Test Species: Mouse
Results Amounts: 3.5 mg/kg

Inhalation Toxicity: Scientific evidence does not indicate that exposure to copper dust or fume causes upper respiratory irritation in a manner that is different than that following high dose exposure to other non-specific irritants.

Reproduction: Female rate 22 weeks prior to mating, oral route, dose 1520 ug/kg – specific developmental abnormalities (musculoskeletal system). At 152 mg/kg effects included stunted fetus and central nervous system. Female rats 35 weeks prior to mating, oral route, 1210 ug/kg – effects on fertility (pre- and post-implantation mortality) (RTECS).

Additional Information: There are no human data and inadequate animal data (HSDB) for carcinogenicity.

Tin (7440-31-5)
Not Available.

SECTION 12. ECOLOGICAL INFO*

12.1 Toxicity

Copper (7440-50-8)	
LC50 fishes 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 other aquatic organisms 1	0.0426 - 0.0535 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 other aquatic organisms 2	0.031 - 0.054 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

*Adapted from Freeport-McMoran Cadmium Copper C16200 SDS

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method

Recycle metal to licensed metal recovery agent. Waste should be disposed in accordance with Federal, State, and Local environmental control regulations. Avoid release to the environment.

SECTION 14. TRANSPORT INFORMATION

14.1 USDOT

Not regulated in solid form.

SECTION 15. REGULATORY INFORMATION

15.1 US FEDERAL - REGULATIONS

Federal Drinking Water Standards: Copper: EPA 1300 ug/l
CERCLA: Copper: RQ 5000 lbs, subject to size limitations (see 40 CFR 302.4)
RCRA: Copper: Not listed; **Tin:** Not listed
Clean Water Act: Copper: Designated as a toxic pollutant and is subject to effluent limitations.
SARA Title III – Emission Reporting: Copper is reportable per Section 313.
TSCA: Copper: Listed.
CERCLA Hazardous Substances: No reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches).
Clean Air Act: Copper: Not listed; **Tin:** Not listed

15.2 CANADA - REGULATIONS

Canadian Domestic Substance List: **Copper:** Listed.
Canadian Ingredient Disclosure List:
Copper: Listed.
WHMIS Classification: Copper: Uncontrolled

15.3 EU - REGULATIONS

EINECS (European Inventory of Existing Commercial Chemical Substances): Copper listed on EEC inventory.
RoHS (Restriction of Hazardous Substances Directive 2002/95/EC): Lead in **Tin** subject to monitoring / reporting.

SECTION 16. OTHER INFORMATION

Reason for Revision: Updated exposure limits and formatting.
Prepared By: Environmental Department
IWG Omega Wire, Inc.

Disclaimer: This information is based on available scientific evidence known to IWG Omega Wire, Inc. It is provided solely for compliance to the Hazard Communication Standard. This information is furnished without warranty, expressed or implicit; and is subject to change.