	# Safety Data Sheet
MANUFACTURER	24-Hour *Emergency* Telephone Number
Cambridge Lee Industries LLC 86 Tube Drive Reading, PA 19605	Gregory F. Creswell, CSP Director, EHS – Cambridge Lee Industries LLC (484) 637-6369 - mobile
Telephone Number: (610) 926-4141	NOTE: Emergency numbers should be used only in the event of chemical emergencies involving spills, leaks, fire, exposure, or in the event of an accident involving chemicals.
All non-emergency questions should be directed to the EHS Department at 610-926-7368 or email to GCreswell@camlee.com	
Date Issued: 19 June 2015	**SDS Prepared By:** Gregory F. Creswell, CSP Director, EHS

Section I – PRODUCT IDENTIFICATION	
CHEMICAL NAME: CDA 147 Sulfur Copper	CHEMICAL FAMILY: Metals
TRADE NAMES: Copper tubing (all sizes and wall thicknesses)	FORMULA: The hazardous constituents are given below for each alloy.

Section II – Hazard Identification	
Classification or the substance or mixture:	Not classified under any GHS hazard class
Label elements:	Not applicable (not classified)
Other hazards:	No know health hazards from copper tube in solid form. Under normal conditions of use, the solid article does not release more than very small quantities of hazardous substances and does not pose a physical hazard or health risk to employees.
	Metallic fumes may be released from heating copper tube above its melting point. May pose an inhalation hazard if exposed above the recommended limits.
	May pose an inhalation hazard if exposed to metal dust from machining operations such as grinding or cutting such as filings or dust.
	Metallic copper may be moderately irritating to the gastrointestinal tract if ingested which is not a primary route of exposure.
Other hazard classifications:	As sold, the solid article is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

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Section III – Hazard Identification

HAZARDOUS CONSTITUENTS FOR WHICH PELs or TLVs EXIST		ALLOYS	PERCENT	CAS NUMBER	EXPOSURE LIMITS (mg/m^3)	
					OSHA[1] PEL	ACGIH[2] TLV
Element	**PEL/ TLV Established for**					
Copper	Dust		99.9%	7440-50-8	1 mg/m^3	1 mg/m^3
	Fume		99.9%	7440-50-8	0.1 mg/m^3	0.2 mg/m^3

SUMMARY: These products may contain small amounts (<1%) of various chemicals in addition to those listed. These small quantities are frequently referred to as "trace" or "residual" elements that generally originate in the raw materials used.

NOTE: No permissible exposure limits (PELs) or threshold limit values (TLVs) exist for these specific alloys. Values shown are applicable to component elements. Various combinations of the above components may appear in grades supplied. More specific information on a particular grade may be obtained by contacting Cambridge Lee Industries LLC.

[1] OSHA Permissible Exposure Limits (PELs) are 8-hour Time-Weighted Average (TWA) concentrations unless otherwise noted.

[2] Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is a 15minute TWA exposure that should not be exceeded at any time during a workday, even if the 8-hour TWA is within the TLV-TWA.

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

Cambridge Lee Industries LLC considers this product in the solid form to be nonhazardous. However, operations such as abrading, burning, welding, sawing, brazing, grinding, cutting, polishing, and machining that results in the creation of dust or elevated temperatures may cause eye, skin, and respiratory tract irritation.

Section IV – First Aid Measures		
Primary entry routes	**Inhalation**: If symptoms are experienced, remove source of contamination or move person to fresh air. Get medical advice / attention if you are concerned with potential overexposure. **Ingestion**: Call a Poison Control Center or seek medical treatment. **Skin Contact**: Wash with plenty of water. If skin irritation occurs, seek medical treatment. **Eye Contact**: Flush with water for 15 minutes holding the eyelid(s) open. DO NOT rub eye(s). If irritation persists, seek medical treatment. DO NOT attempt to manually remove any particles stuck in the eye(s).	
Effects of overexposure	Acute	**Inhalation:** Possible metal fume fever. Symptoms are chills, fever, aching muscles, dry mouth and throat, headache, nausea, vomiting or diarrhea. Onset may be delayed several hours. **Ingestion:** Swallowing metallic dust may case gastrointestinal discomfort with nausea, vomiting and diarrhea. **Skin Contact:** Overexposure to this material in the form of metal fragments or dust may cause mechanical irritation or dermatitis. Contact with the heated product will cause thermal burns. **Eye Contact:** Overexposure to this material in the form of metal fragments may cause mechanical irritation as a foreign object. Fumes may be irritating to the eyes. Repeated occupational exposures to dust and fumes may cause conjunctivitis.
Effects of overexposure	Chronic	No long term effects known.
Carcinogenic references	None known	
Medical conditions aggravated by exposure	Individuals with "Wilson's disease", a rare condition that interferes with the body's ability to eliminate copper, should consult a physician before exposures to copper dusts and fumes. Preexisting pulmonary and skin conditions may be aggravated by prolonged exposure to dust and chips.	

Section V – Firefighting Measures	
Extinguishing media	Use water or other extinguishing media appropriate for the surrounding fire. Do not apply water to hot or molten metal.
Explosion hazard	Fine copper powder is a moderate fire hazard. In the presence of halogenates, copper powder may be explosive with heat, percussion or friction.
Special hazards	Not flammable. Solid forms of copper such as tubing, cathode or billets will not burn or support combustion or decompose to toxic gases.

Advice for firefighters	As for any fire, evacuate the area and fight the fire from a safe distance. Wear necessary protective equipment as with any other firefighting activity.
Section VI – Accidental Release Measures	
Spills or leaks	Scoop or shovel spilled material into an appropriate waste container for recycling or disposal. For dust, use a vacuum cleaner with appropriate filters or a wet method to reduce potential airborne dust during clean-up.
Section VII – HANDLING AND STORAGE	
Handling	Refer to applicable regulatory standards for safety in welding, cutting and other operations where potential exposure to copper dust, vapors and fumes are emitted. Workers should be adequately trained in safety procedures for cutting, welding, grinding or other machine operations where copper is utilized. Wear appropriate Personal Protective Equipment (PPE) suitable for the type of operation and workplace requirements. Avoid operations that generate fumes and dust.
Storage	Product should be in a clean dry area.
Section VIII – Exposure Controls / Personal Protection	
Engineering controls	General ventilation is usually adequate. In workplaces where fumes or dusts are generated, provide local exhaust ventilation to reduce potential overexposure. Monitor workplace air to ensure adequate ventilation and controls. If engineering controls and work practices are not effective, suitable Personal Protective Equipment (PPE) must be utilized to protect employees.
Respiratory protection	Not required under normal conditions of use or handling. For dust or fumes - Use appropriate NIOSH – or MSHA – approved respirators if engineering controls are infeasible or insufficient.
	A respiratory protection program that meets the regulator requirements of OSHA 29 CFR 1910.134 must be followed whenever workplace conditions warrant respiratory protection usage.
Skin protection	Wear coveralls, gloves, safety shoes, etc., as needed and as appropriate to the conditions of handling and use.
Eye protection	Use safety goggles or glasses with side shields as needed, particularly during machining, grinding or any operation that may create dust.
Ventilation	Local exhaust ventilation should be used to control exposure to airborne dust or fume whenever possible.

Section IX – PHYSICAL DATA	
Appearance:	Solid
Odor:	Odorless

Color:	Bright, reddish yellow (copper) color
pH:	None available
Melting Point:	1083°C (1981°F)
Boiling Point:	2595°C
Flash Point:	Not applicable
Flammability:	Not flammable
Vapor Pressure:	1mm@1628°C
Relative Density:	8.91 – 8.94 g/cm3 at 20°C (68°F)
Specific Gravity:	8.96
Solubility:	Insoluble

Section X – REACTIVITY DATA	
Reactivity	Not reactive under normal conditions of use.
Chemical stability	Normally stable. May turn green on prolonged contact with air.
Possibility of hazardous Reactions	Finely divided metal dust from grindings or cutting may explode in contact with strong oxidizing agents. (e.g. chlorates, ammonium nitrate)
Incompatibility	Chlorine, fluorine, strong oxidizing agents (chlorates, bromates, iodates, ammonium nitrate), strong acids (nitric acid), strong bases, sodium azide, acetylene. Contact with incompatible materials may increase risk of explosion.
Decomposition	Thermal decomposition may release metal oxide fumes when the product is heated above its melting point.

Section XI – TOXICOLOGY DATA	
Likely routes of exposure	No known health hazards from copper tube in solid form.
Inhalation	Data not available. Inhalation of metal fume from high heat processes may cause a condition known as metal fume fever. Symptoms of metal fume fever include dryness and irritation of the throat, metallic taste, tightness of the chest and cough. Symptoms may occur and be delayed several hours following exposure.
Ingestion	Data not available. Ingestion of copper particulates is expected to cause nausea and vomiting.
Skin contact	Data not available. Prolonged exposure to copper dust may cause a green discoloration to the skin, hair, nails and teeth.
Sensitization	Not known to cause respiratory or dermal sensitization.

Section XII – ECOLOGICAL DATA
Copper metal is not classified as an environmentally hazardous substance. In natural environments, copper will slowly be transformed into copper compounds, some of which can cause ecotoxic effects. Do not release metal fragments, dust or solid metal to the environment.

Section XIII – DISPOSAL	
Disposal	Copper tube is recyclable. It is the responsibility of the user to dispose of, or send for metal reclamation, any unused material, residues and containers in accordance with applicable Federal, State and Local regulations.
Disposal regulatory requirements	Follow applicable Federal, State and Local regulations. Do NOT discard into any sewer, on the ground or into any body of water. Store materials for disposal or recycling as indicated in Section 7, Handling and Storage.
Container cleaning and disposal requirements	Follow applicable Federal, State and Local regulations. Observe safe handling precautions.

Section XIV – SHIPPING INFORMATION: DOT TRANSPORTATION DATA (49 CFR 172.101)	
Proper Shipping Name	Copper tubing
Hazard Class	Not regulated
UN. No.	Not regulated
Packing Group	Not regulated
Special Information	

Section XV – REGULATORY INFORMATION	
Components	
TSCA	All ingredients are on the TSCA Inventory or are exempt from TSDA Inventory requirements.
SUBJ. TO SEC. 313 RPT	Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 requires reporting of information relating to the release of certain chemicals to the environment. The following Alloys contain one or more chemicals which may be subject to the reporting requirements. Refer to 40 CFR Part 372 to determine if your facility is subject to these reporting requirements. This information may not be deleted from the Safety Data Sheet and must be copied and redistributed whenever this material is redistributed. This requirement is imposed by Federal regulation. SARA listed forms of copper are considered present as shipped in solid metal forms; however operations such as abrading, burning, welding, sawing, brazing, grinding, cutting, polishing, and machining may generate forms subject to the reporting requirements. Refer to Section XVI for chemicals subject to the reporting requirements of Section 313.

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Section XVI – ADDITIONAL INFORMATION

Prepared By: Cambridge Lee Industries LLC –
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Director EHS

Legend to abbreviations

ACGIH – American Conference of Governmental Industrial Hygienist
ANSI – American National Standards Institute
GHS – Globally Harmonized System for Classification and Labeling
NIOSH – National Institute for Occupational Health Administration
OEL – Occupational Exposure Limit
OSHA – Occupational Safety & Health Administration
TWA – Time Weighted Average
TLV – Threshold Limit Value
WHMIS – Workplace Hazardous Materials Information System

Disclaimer: Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. This information relates to the specific material designed and may not be valid for such material used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date complied. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's completeness of such information for their particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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