



# SAFETY DATA SHEET

Product Name: Copper Tube products 142

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## Section 1: Product and Company Identification

**Product Names:** 142 Copper Tube Phosphorus-Deoxidized, Arsenical

**Product Use:** Metal tube products – various consumer, construction and manufacturing uses

**Chemical Family:** Copper Alloy

**Product Codes:** UNS C14200

**Supplier:** Small Tube Products  
200 Oliphant Drive,  
PO Box 1017,  
Duncansville, PA, USA  
16635  
Tel: 814-693-6000 (8 am – 5 pm; Mon-Fri; Eastern time zone)  
[www.smalltubeproducts.com](http://www.smalltubeproducts.com)

## Section 2: Hazards Identification

Personal Protection	OSHA (USA)	WHMIS (Canada)	Transport Symbol
	Manufactured article Not hazardous	 Manufactured Article Not controlled	Not Regulated for Transport

**Emergency Overview:** Solid copper tube products do not present an inhalation, ingestion, or contact health hazard. Metallic dust and fumes generated from operations such as cutting, grinding, high temperature processes or other machining, have potential health hazards which are listed in this section.

**Appearance, Color and Odor:** Solid metal tubes and shapes, copper-color, odorless.

USA: As sold, the solid manufactured article is not considered hazardous. Metallic dust or fume, which may be generated during use of these products, is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Canada: As sold, the solid manufactured article is not controlled. Exposure to metallic dust or fume, which may be generated during use of these products, is controlled under WHMIS.

**Potential Health Effects** **ACUTE (short term): see Section 8 for exposure controls**

**Relevant Route(s) of Exposure:** Inhalation of dust or fume, skin and eye contact.

**Inhalation:** Overexposure to dust or fume may cause coughing, shortness of breath, respiratory tract irritation, nasal septum perforation, congestion of the mucous membranes, lung damage and/or metal fume fever. The symptoms of metal fume fever typically appear several hours after exposure and are associated with any combination of the following symptoms; dry throat, cough, chills, fever, headache, chest tightening, shortness of breath, metallic taste, vomiting and fatigue.

**Ingestion:** Ingestion of large amounts of metallic dust may cause a metallic taste, gastro-intestinal discomfort with nausea, vomiting and diarrhea.



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### Section 2: Hazards Identification, continued

**Skin:** Overexposure to this material in the form of dust may cause irritation with dermatitis. Contact with the heated product will cause thermal burns to the skin.

**Eye:** Overexposure to this material in the form of dust may cause irritation as a "foreign object". Fumes may be irritating to the eyes. Repeated occupational exposures to dust and fumes may cause conjunctivitis.

**CHRONIC (long term): see Section 11 for additional toxicological data**

Long-term over-exposures to high concentrations of airborne dust may cause increased mucous flow in the nose and respiratory system. This condition usually disappears after exposure ceases.

Long-term over-exposure by inhalation of metallic dusts and fumes may cause chronic obstructive lung disease, rhinitis and/or bronchitis. Long-term over-exposure by inhalation of dusts may lead to fibrosis.

Prolonged or repeated exposure to copper fume can discolor skin and hair. Long-term over-exposure by ingestion may damage the liver and kidneys.

**Medical Conditions Aggravated by Exposure:**

Overexposure to this material in the form of metallurgical dust is hazardous to health. Pre-existing pulmonary and skin conditions such as emphysema, asthma, bronchitis and dermatitis may be aggravated by exposure to this material. 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.

**Interactions With Other Chemicals:**

See Section 10

**Potential Environmental Effects:**

Prevent the release of waste metals into the environment.

### Section 3: Composition / Information on Ingredients

**Hazardous Ingredients:**

<u>Chemical Name</u>	<u>CAS No.</u>	<u>Wt.%</u>
Copper (includes Ag)	7440-50-8	99.4 - 99.9
Arsenic (As)	7440-38-2	0.15 – 0.50
Phosphorus	7723-14-0	0.015 – 0.040

### Section 4: First Aid Measures

**Inhalation:** If high airborne concentrations are present, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). If symptoms are experienced, remove source of contamination or move victim to fresh air. Obtain medical advice.

**Eye Contact:** Do not allow victim to rub eye(s). Let the eye(s) water naturally for a few minutes. Have victim look right and left, and then up and down. If particle does not dislodge, flush with lukewarm, gently flowing water for 15 minutes or until particle is removed, while holding the eyelid(s) open. If irritation persists, obtain medical attention. DO NOT attempt to manually remove anything stuck to the eye(s).

**Skin Contact:** No health effects expected. If irritation occurs, gently brush away dust particles quickly. Wash gently and thoroughly with lukewarm water and non-abrasive soap for 5 minutes. If irritation persists, obtain medical advice.

**Ingestion:** If dust is swallowed, obtain medical advice or contact a Poison Control Center.



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## Section 5: Fire Fighting Measures

<b>Flammable Properties:</b>	This product is not flammable. Under rare conditions, finely divided powder or dust from machining may be considered to be a fire and explosion hazard in the presence of high temperatures or ignition sources.
<b>Suitable extinguishing Media:</b>	Use water or other extinguishing media appropriate for the surrounding fire.
<b>Unsuitable extinguishing Media:</b>	Not available
<b>Explosion Data</b>	
<b>Sensitivity to Mechanical Impact:</b>	Not sensitive
<b>Sensitivity to Static Discharge:</b>	Not sensitive
<b>Specific Hazards arising from the Chemical:</b>	During a fire, the product may release fumes of the component metals and toxic metal oxide fumes.
<b>Protective Equipment and precautions for firefighters:</b>	As for any fire, evacuate the area and fight the fire from a safe distance. Wear a pressure-demand, self-contained breathing apparatus and full protective gear. Fight fire from a protected location or a safe distance.

## Section 6: Accidental Release Measures

<b>Personal Precautions:</b>	Wear proper personal protective equipment as indicated in Section 8.
<b>Environmental Precautions:</b>	Prevent material from contaminating soil and from entering sewers or waterways.
<b>Methods for Containment:</b>	No special methods required.
<b>Methods for Clean-up:</b>	Scoop or shovel spilled material into an appropriate waste container for recycling or disposal. For dust, use a vacuum with appropriate filters or a wet method to reduce airborne dust during clean-up; do not dry sweep.

## Section 7: Handling and Storage

<b>Storage Conditions:</b>	Product should be stored in a clean, dry area.
<b>Handling Precautions:</b>	Workers should be properly trained in safety procedures for cutting, grinding and other machining operations where these products are used. Wear appropriate personal protective equipment suitable for the type of operation and conforming to workplace requirements.

## Section 8: Exposure Controls/Personal Protection

### Exposure Guidelines

Consult local authorities for acceptable exposure limits.

<u>Ingredient</u>	<u>ACGIH TLV</u> <u>(8-hr. TWA)</u> <u>(mg/m<sup>3</sup>)</u>	<u>U.S. OSHA PEL</u> <u>(8-hr. TWA)</u> <u>(mg/m<sup>3</sup>)</u>
Copper	0.2 (fume) 1 (dust and mist, as Cu)	0.1 (fume as Cu) 1 (dust and mist, as Cu)
Arsenic	0.01; BEI	0.01(29 CFR 1910.1018); OSHA Carcinogen
Other Exposure controls: NIOSH IDLH (Immediately Dangeorous to Life or Health) = 100 mg/m <sup>3</sup> (as Cu) NIOSH REL Copper dust = 1 mg/m <sup>3</sup> TWA		



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### Section 8: Exposure Controls/Personal Protection, continued

#### Exposure Controls

##### Engineering Controls:

Provide local exhaust ventilation or general dilution to maintain exposure levels below the exposure limits. Monitor noise levels to determine the hearing protection requirements.

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection.

#### Personal Protection

##### Eye/Face Protection:

Wear safety glasses with side shields or goggles. Wear equipment appropriate for the type of operation being performed.

##### Skin Protection:

Wear protective gloves and clean body-covering clothing when necessary to prevent exposure to this product. Wear protective equipment appropriate for the type of operation being performed.

##### Respiratory Protection:

When metal dust concentrations in air exceed the occupational exposure guidelines, always wear respiratory protection. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or Canadian Standards Association (CSA) Standard Z94.4-2002 must be followed whenever workplace conditions warrant a respirator's use.

##### NIOSH Respirator Recommendations for Copper fume (as Cu)

Up to 1 mg/m<sup>3</sup>:

(APF = 10) An approved respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. An approved supplied-air respirator.

Up to 2.5 mg/m<sup>3</sup>:

(APF = 25) An approved supplied-air respirator operated in a continuous-flow mode. An approved powered, air-purifying respirator with a high-efficiency particulate filter.

Up to 5 mg/m<sup>3</sup>:

(APF = 50) An approved air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. An approved supplied-air respirator that has a tight-fitting facepiece and is operated in a continuous-flow mode. An approved powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter. An approved self-contained breathing apparatus with a full facepiece. An approved supplied-air respirator with a full facepiece.

Up to 100 mg/m<sup>3</sup>:

(APF = 2000) An approved supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Emergency or planned entry into unknown concentrations or IDLH conditions:

(APF = 10,000) An approved self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. An approved supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Escape:

(APF = 50) An approved air-purifying, full-facepiece respirator with an N100, R100, or P100 filter. An approved escape-type, self-contained breathing apparatus.

##### Other Protective Equipment:

Wear hearing protection appropriate to the noise levels generated during all machine operations.

##### General Hygiene Measures:

Launder contaminated clothing before re-wearing, or discard. Do not eat, drink or smoke in work areas. Wash hands thoroughly after working with this material and before eating, drinking, smoking or using the toilet. Maintain good housekeeping, keep the workplace clean and minimize the generation of airborne dust.



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### Section 9: Physical and Chemical Properties

<b>Physical State:</b>	Solid	<b>Flash Point &amp; method:</b>	Not applicable
<b>Appearance, Color and Odor:</b>	Metal tube, lustrous copper-color, odorless.	<b>Autoignition Temperature:</b>	Not applicable
<b>Odor Threshold:</b>	Not applicable	<b>Flammability Limits in Air:</b>	Not applicable
<b>pH:</b>	Not applicable	<b>Vapour Pressure:</b>	Not applicable
<b>Density:</b>	8.94 g/cm <sup>3</sup> at 20°C (68°F)	<b>Vapour Density:</b>	Not applicable
<b>Partition coefficient:</b>	Not applicable	<b>Evaporation Rate:</b>	Not applicable
<b>Solubility:</b>	Insoluble	<b>Boiling Point/Range:</b>	2595°C (4703°F)
<b>Viscosity:</b>	Not applicable	<b>Melting Point:</b>	1081°C (1978°F)
<b>Decomposition Temperature:</b>	Not available		

### Section 10: Stability and Reactivity

<b>Chemical Stability:</b>	Stable material. May turn green on prolonged contact with air due to formation of cupric carbonate.
<b>Conditions to Avoid:</b>	Extreme heat.
<b>Incompatible Materials:</b>	Chlorine, fluorine, strong oxidising agents, strong acids, strong bases, sodium azide, acetylene.
<b>Hazardous Decomposition Products:</b>	Thermal decomposition may release metal oxide fumes when product is heated above its melting point.
<b>Hazardous Reactions:</b>	Not available

### Section 11: Toxicological Information

#### Acute Toxicity Data

Acute Toxicity Data is not available for this article.

#### Other Toxicity Data

<b>Carcinogenicity:</b>	Copper metal is not considered a human carcinogen by IARC (International Agency for Research on Cancer), ACGIH (American Conference of Governmental Industrial Hygienists), OSHA or NTP (National Toxicology Program). ACGIH has designated metallic Copper as A4 – Not Classifiable as a Human Carcinogen. UNS C14200 contains 0.1 – 0.5% of Arsenic, IARC group 1; ACGIH A1.
<b>Irritation:</b>	Exposure to fine particulate may cause eye, skin and lung irritation and discomfort.
<b>Corrosivity:</b>	Not applicable
<b>Sensitization:</b>	Not applicable
<b>Neurological Effects:</b>	Not applicable
<b>Genetic Effects:</b>	Not available
<b>Reproductive Effects:</b>	Not available
<b>Developmental Effects:</b>	Not available
<b>Target Organ Effects:</b>	From exposures to dust and fume: Upper respiratory system, Eyes, Skin, Liver and Kidney (increased risk to persons with Wilson's Disease).



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### Section 12: Ecological Information

<b>Ecotoxicity:</b>	Copper metal and compounds released into the natural environment have long-term adverse effects on the aquatic environment.
<b>Persistence/Degradability:</b>	Not applicable
<b>Bioaccumulation/Accumulation:</b>	Not available
<b>Mobility:</b>	Not available

### Section 13: Disposal Considerations

<b>Waste Disposal Method:</b>	It is the responsibility of the user to dispose of, or send for metal reclamation, any unused material, residues and containers in accordance with local, regional, national and international regulations. Prevent releases of this material into the environment. Do NOT dump into any sewers, on the ground or into any body of water. Store material for disposal or recycling as indicated in Section 7 Handling and Storage.
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### Section 14: Transport Information

<b>U.S. Hazardous Materials Regulation (DOT 49CFR):</b>	As sold, not regulated for transport.
<b>Canadian Transportation of Dangerous Goods (TDG):</b>	Not regulated for transport.
<b>ICAO/IATA:</b>	Not regulated for transport.

### Section 15: Regulatory Information

<b>USA</b>	<b>TSCA Status:</b> All substances are listed in the TSCA inventory.
	<b>SARA Title III:</b>
	Sec: 311/312: Exposures to dust and fume: Acute; Chronic
	Sec. 313: Copper, Zinc, Arsenic
	CERCLA RQ: Applicable to Copper, Zinc, Arsenic. The RQ for these hazardous substances is limited to those pieces of the metal having a diameter smaller than 100 µm.
<b>Canada</b>	This product has been classified in accordance with the hazard criteria of the <i>Controlled Products Regulations</i> and the SDS contains all the information required by the <i>Controlled Products Regulations</i> .
<b>WHMIS Classification: (for workplace exposures)</b>	As sold, this product is considered a manufactured article and is not controlled by WHMIS. In some workplaces, operations with this product may lead to generation of metallic dust or fume. Exposure to metallic dusts and fumes may have occupational health hazards and is controlled under WHMIS. D2A – Materials causing other toxic effects. – Arsenic; Chronic health effects, IARC Group 1, with repeated exposure by inhalation, to dust and fumes.
<b>New Substance Notification Regulations:</b>	All substances in this product are listed on Canada's Domestic Substances List (DSL).
<b>National Pollutant Release Inventory:</b>	Copper, Arsenic are NPRI reportable substances.



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### Section 16: Other Information

#### Preparation Information:

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**Supplier Note:** This Safety Data Sheet has been prepared for the guidance of plant engineering, operations and management and for persons working with or handling this product.

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