Copper Medical Gas Tube per ASTM B819
by Copper Development Association

HPD UNIQUE IDENTIFIER: 28647
CLASSIFICATION: 22 60 00 Gas and Vacuum Systems for Laboratory and Healthcare Facilities

PRODUCT DESCRIPTION: Copper tube for medical gas systems, as manufactured by a Copper Development Association member, per ASTM B819. ASTM B819 establishes the requirements for two wall thickness schedules of specially cleaned, straight lengths of seamless copper tube, identified as Types K and L, suitable for medical gas systems. These materials may be used as finished products or as part of larger products or systems. In the latter case, the materials do not experience any chemical changes; rather, they are physically altered to meet the application requirements. Additional Classifications can be found in Section 5: General Notes.

Section 1: Summary

CONTENT INVENTORY

Inventory Reporting Format
- Nested Materials Method
- Basic Method

Threshold Disclosed Per
- Material
- Product

Threshold Level
- 100 ppm
- 1,000 ppm
- Per GHS SDS
- Other

Residuals/Impurities
- Considered in 1 of 1 Materials

All Substances Above the Threshold Indicated Are:
- Characterized: Yes Ex/SC Yes No
- % weight and role provided for all substances: Yes
- Screened: Yes Ex/SC Yes No
- All substances screened using Priority Hazard Lists with results disclosed: Yes
- Identified: Yes Ex/SC Yes No
- All substances disclosed by Name (Specific or Generic) and Identifier: Yes

CONTENT IN DESCENDING ORDER OF QUANTITY

Summary of product contents and results from screening individual chemical substances against HPD Priority Hazard Lists and the GreenScreen for Safer Chemicals®. The HPD does not assess whether using or handling this product will expose individuals to its chemical substances or any health risk. Refer to Section 2 for further details.

MATERIAL | SUBSTANCE | RESIDUAL OR IMPURITY | GREENSCREEN SCORE | HAZARD TYPE
--- | --- | --- | --- | ---
UNS C12200 COPPER ALLOY | COPPER LT-UNK PHOSPHORUS | BM-2 | MAM | PHY

Number of Greenscreen BM-4/BM3 contents: 0
Contents highest concern GreenScreen Benchmark or List translator Score: LT-UNK
Nanomaterial: No

INVENTORY AND SCREENING NOTES:
Special Conditions applied: [MetalAlloy]. The product formulation was created using the ASTM standard to identify acceptable copper alloys. The formulation of each of these alloys was generated from the UNS designation, as found at www.unscopperalloys.org, duplicated in the Toxnot Shared Materials library. The specific material formulation should be obtained directly from the manufacturer of the product chosen. Metal alloys have different intrinsic characteristics than their alloying elements encapsulated therein, including health and environmental hazards. As such, alloys are generally expected to have different hazards than their alloying elements. All GreenScreen BenchMark scores are supplied by the Pharos database.

VOLATILE ORGANIC COMPOUND (VOC) CONTENT

VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE
See Section 3 for additional listings.

VOC emissions: Inherently non-emitting source per LEED

CONSISTENCY WITH OTHER PROGRAMS
No pre-checks completed or disclosed

Third Party Verified?
- Yes
- No

PREPARER: Self-Prepared
VERIFIER: WAP Sustainability Consulting
VERIFICATION #: zPr-13729
SCREENING DATE: 2021-10-26
PUBLISHED DATE: 2022-06-08
EXPIRY DATE: 2024-10-26

hpdbase.hpd-collaborative.org
Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific threshold(s) and reports detailed health information including hazards. This HPD uses the inventory method indicated above, which is one of three possible methods:

- Basic Inventory method with Product-level threshold.
- Nested Material Inventory method with Product-level threshold.
- Nested Material Inventory method with individual Material-level thresholds.

Definitions and requirements for the three inventory methods and requirements for each data field can be found in the HPD Open Standard version 2.2, available on the HPDC website at: [www.hpd-collaborative.org/hpd-2-2-standard](http://www.hpd-collaborative.org/hpd-2-2-standard)

**UNS C12200 COPPER ALLOY**  
\[ \%: 100.0000 - 100.0000 \]

**PRODUCT THRESHOLD:** Other  
**RESIDUALS AND IMPURITIES CONSIDERED:** Yes  
**MATERIAL TYPE:** Metal

**RESIDUALS AND IMPURITIES NOTES:** Defined by UNS per Metal Alloy special condition

**OTHER MATERIAL NOTES:** This formulation was generated based on the UNS designation for the alloy as found at [www.unscopperalloys.org](http://www.unscopperalloys.org), duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, alloys are generally expected to have different hazards than their alloying elements. This alloy is registered with the U.S. EPA as antimicrobial. This includes O-free Cu which contains P in an amount agreed upon.

### COPPER

**ID:** 7440-50-8

**HAZARD SCREENING METHOD:** Pharos Chemical and Materials Library  
**HAZARD SCREENING DATE:** 2021-10-26 13:01:23

**%:** 99.9000 - 100.0000  
**GS:** LT-UNK  
**RC:** Both  
**NANO:** No  
**SUBSTANCE ROLE:** Alloy element

**HAZARD TYPE**  
**AGENCY AND LIST TITLES**  
**WARNINGS**

None found  
No warnings found on HPD Priority Hazard Lists

**SUBSTANCE NOTES:** This value includes Ag, though it is not intentionally added and may only be present as a residual of the process by which raw material (i.e., Cu ore) is refined. However, due to the high value of Ag, refining operations prioritize its removal to the highest extent practical. Recycled content is expected to be utilized in the production of the product. However, please contact the manufacturer for specific utilization rates. Source of Pre Consumer Recycled Content Products: Recyclable copper materials generated during production which is recycled within the plant where it originates, or bought back from customers or scrap dealers (i.e. punchings from stamping operations, clippings, gates/risers from castings). Source of Post Consumer Recycled Content Products: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

### PHOSPHORUS

**ID:** 7723-14-0

**HAZARD SCREENING METHOD:** Pharos Chemical and Materials Library  
**HAZARD SCREENING DATE:** 2021-10-26 13:01:24

**%:** 0.0150 - 0.0400  
**GS:** BM-2  
**RC:** UNK  
**NANO:** No  
**SUBSTANCE ROLE:** Alloy element

**HAZARD TYPE**  
**AGENCY AND LIST TITLES**  
**WARNINGS**

MAM  
US EPA - EPCRA Extremely Hazardous Substances  
Extremely Hazardous Substances

PHY  
EU - GHS (H-Statements) Annex 6 Table 3-1  
H228 - Flammable solid [Flammable solids - Category 1 or 2]

**SUBSTANCE NOTES:**
### Section 3: Certifications and Compliance

This section lists applicable certification and standards compliance information for VOC emissions and VOC content. Other types of health or environmental performance testing or certifications completed for the product may be provided.

<table>
<thead>
<tr>
<th>VOC EMISSIONS</th>
<th>Inherently non-emitting source per LEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERTIFYING PARTY: Self-declared</td>
<td>ISSUE DATE: 2021-10-26</td>
</tr>
<tr>
<td>APPLICABLE FACILITIES: All</td>
<td>EXPIRY DATE:</td>
</tr>
<tr>
<td>CERTIFICATE URL:</td>
<td>CERTIFIER OR LAB: N/A</td>
</tr>
<tr>
<td>CERTIFICATION AND COMPLIANCE NOTES:</td>
<td></td>
</tr>
</tbody>
</table>

### Section 4: Accessories

This section lists related products or materials that the manufacturer requires or recommends for installation (such as adhesives or fasteners), maintenance, cleaning, or operations. For information relating to the contents of these related products, refer to their applicable Health Product Declarations, if available.

No accessories are required for this product.

### Section 5: General Notes

Substance ranges within the HPD are due to the variability in the UNS formulations. This HPD is meant to provide likely formulations of copper medical gas tubes based on the ASTM B819 standard and lists the copper alloy(s) referenced in that standard. Manufacturers should be contacted to obtain a true disclosure for the product in question. A list of Copper Development Association members can be found at https://www.copper.org/about/cda-members.html. Please see https://www.copper.org/applications/plumbing/cth/ for more information available in the Copper Tube Handbook, a comprehensive resource for engineers, plumbers, HVAC technicians and contractors to obtain information about copper tube, piping and fittings, as well as different joining methods and applications. Related Construction Specifications Institute MasterFormat designations include the following. These are provided as a general guideline; others sections may apply: 22 06 10 Schedules for Plumbing Piping and Pumps, 22 61 13 Compressed Air Piping for Laboratory and Healthcare Facilities, 22 62 13 Vacuum Piping for Laboratory and Healthcare Facilities, 22 63 13 Gas Piping for Laboratory and Healthcare Facilities.
MANUFACTURER INFORMATION

MANUFACTURER: Copper Development Association
ADDRESS: 7918 Jones Branch Dr. #300 McLean VA 22102, USA
WEBSITE: copper.org

CONTACT NAME: Erin Smith
TITLE: Project Manager, Material Stewardship (US)
PHONE: 212-251-7247
EMAIL: sustainability@copperalliance.us

The listed contact is responsible for the validity of this HPD and attests that it is accurate and complete to the best of his or her knowledge.

KEY

Hazard Types

- AQU Aquatic toxicity
- CAN Cancer
- DEV Developmental toxicity
- END Endocrine activity
- EYE Eye irritation/corrosivity
- GEN Gene mutation
- GLO Global warming
- LAN Land toxicity
- MAM Mammalian/systemic/organ toxicity
- MUL Multiple
- NEU Neurotoxicity
- NF Not found on Priority Hazard Lists
- OZO Ozone depletion
- PBT Persistent, bioaccumulative, and toxic
- PHY Physical hazard (flammable or reactive)
- REP Reproductive
- RES Respiratory sensitization
- SKI Skin sensitization/irritation/corrosivity
- UNK Unknown

GreenScreen (GS)

- BM-4 Benchmark 4 (prefer-safer chemical)
- BM-3 Benchmark 3 (use but still opportunity for improvement)
- BM-2 Benchmark 2 (use but search for safer substitutes)
- BM-1 Benchmark 1 (avoid - chemical of high concern)
- BM-U Benchmark Unspecified (due to insufficient data)
- LT-P1 List Translator Possible 1 (Possible Benchmark-1)
- LT-1 List Translator 1 (Likely Benchmark-1)
- LT-UNK List Translator Benchmark Unknown (the chemical is present on at least one GreenScreen Specified List, but the information contained within the list did not result in a clear mapping to a LT-1 or LTP1 score.)
- NoGS No GreenScreen.

Recycled Types

- PreC Pre-consumer recycled content
- PostC Post-consumer recycled content
- UNK Inclusion of recycled content is unknown
- None Does not include recycled content

Other Terms:

- GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

Inventory Methods:

- Nested Method / Material Threshold Substances listed within each material per threshold indicated per material
- Nested Method / Product Threshold Substances listed within each material per threshold indicated per product
- Basic Method / Product Threshold Substances listed individually per threshold indicated per product

Nano Composed of nano scale particles or nanotechnology

Third Party Verified Verification by independent certifier approved by HPDC

Preparer Third party preparer, if not self-prepared by manufacturer

Applicable facilities Manufacturing sites to which testing applies

The Health Product Declaration (HPD) Open Standard provides for the disclosure of product contents and potential associated human and environmental health hazards. Hazard associations are based on the HPD Priority Hazard Lists, the GreenScreen List Translator™, and when available, full GreenScreen® assessments. The HPD Open Standard v2.1 is not:

- a method for the assessment of exposure or risk associated with product handling or use,
- a method for assessing potential health impacts of: (i) substances used or created during the manufacturing process or (ii) substances created after the product is delivered for end use.

Information about life cycle, exposure and/or risk assessments performed on the product may be reported by the manufacturer in appropriate Notes sections, and/or, where applicable, in the Certifications section.

The HPD Open Standard was created and is supported by the Health Product Declaration Collaborative (the HPD Collaborative), a customer-led organization composed of stakeholders throughout the building industry that is committed to the continuous improvement of building products through transparency, openness, and innovation throughout the product supply chain.

The product manufacturer and any applicable independent verifier are solely responsible for the accuracy of statements and claims made in this HPD and for compliance with the HPD standard noted.