Copper Water Tube - Type K, L, or M - per ASTM B88
by Copper Development Association

Health Product
Declaration v2.2
created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 28650
CLASSIFICATION: 22 10 00 Plumbing Piping
PRODUCT DESCRIPTION: Copper tube for heating, water distribution, and fuel distribution, as manufactured by a Copper Development Association member, per ASTM B88. ASTM B88 establishes the requirements for seamless copper water tube suitable for general plumbing and similar applications for the conveyance of fluids, commonly used with solder, flared, compression-type, or mechanical fittings. 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 2 of 2 Materials
- Explanation(s) provided for Residuals/Impurities?
  - Yes
  - No

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 ]
UNS C12000 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-13731
SCREENING DATE: 2021-10-26
PUBLISHED DATE: 2022-06-08
EXPIRY DATE: 2024-10-26
Section 2: Content in Descending Order of Quantity

This section lists contents in a product based on specific thresholds 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

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**COPPER**

**UNSC12000 COPPER ALLOY**

<table>
<thead>
<tr>
<th>Product Threshold:</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residuals and Impurities Considered:</td>
<td>Yes</td>
</tr>
<tr>
<td>Material Type:</td>
<td>Metal</td>
</tr>
<tr>
<td>Residuals and Impurities Notes:</td>
<td>Defined by UNS per Metal Alloy special condition</td>
</tr>
</tbody>
</table>

**Other Material Notes:**

This formulation was generated based on the UNS designation for the alloy as found at 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 one in a list of multiple alloys that may be used to meet the product standard and, as such, shall be treated as an alternate of all other alloys listed in this HPD. This alloy is registered with the U.S. EPA as antimicrobial. This includes O-free Cu which contains P in an amount agreed upon.

**PHOSPHORUS**

**UNSC12000 COPPER ALLOY**

<table>
<thead>
<tr>
<th>Product Threshold:</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residuals and Impurities Considered:</td>
<td>Yes</td>
</tr>
<tr>
<td>Material Type:</td>
<td>Metal</td>
</tr>
</tbody>
</table>

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Other material 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).
**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, 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 one in a list of multiple alloys that may be used to meet the product standard and, as such, shall be treated as an alternate of all other alloys listed in this HPD. This alloy is registered with the U.S. EPA as antimicrobial.

### COPPER

**ID:** 7440-50-8

**HAZARD SCREENING METHOD:** Pharos Chemical and Materials Library  
**HAZARD SCREENING DATE:** 2021-10-26 13:15:19

<table>
<thead>
<tr>
<th>%</th>
<th>GS</th>
<th>RC</th>
<th>NANO</th>
<th>SUBSTANCE ROLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.9000 - 100.0000</td>
<td>LT-UNK</td>
<td>Both</td>
<td>No</td>
<td>Alloy element</td>
</tr>
</tbody>
</table>

**HAZARD TYPE**

None found

**AGENCY AND LIST TITLES**

None found

**WARNINGS**

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 13:15:20

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<thead>
<tr>
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<th>RC</th>
<th>NANO</th>
<th>SUBSTANCE ROLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0040 - 0.0120</td>
<td>BM-2</td>
<td>UNK</td>
<td>No</td>
<td>Alloy element</td>
</tr>
</tbody>
</table>

**HAZARD TYPE**

MAM

US EPA - EPCRA Extremely Hazardous Substances

PHY

EU - GHS (H-statements) Annex 6 Table 3-1

<table>
<thead>
<tr>
<th>Agency and List Titles</th>
<th>Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>H228 - Flammable solid [Flammable solids - Category 1 or 2]</td>
<td>Extremely Hazardous Substances</td>
</tr>
</tbody>
</table>

**WARNINGS**

None found
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:</td>
<td>Self-declared</td>
</tr>
<tr>
<td>APPLICABLE FACILITIES:</td>
<td>All</td>
</tr>
<tr>
<td>CERTIFICATE URL:</td>
<td></td>
</tr>
<tr>
<td>ISSUE DATE:</td>
<td>2021-10-26</td>
</tr>
<tr>
<td>EXPIRY DATE:</td>
<td></td>
</tr>
<tr>
<td>CERTIFIER OR LAB:</td>
<td>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 water tubes based on the ASTM B88 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: 21 13 13 Wet-Pipe Sprinkler Systems, 21 13 16 Dry-Pipe Sprinkler Systems, 21 13 19 Preaction Sprinkler Systems, 21 13 23 Combined Dry-Pipe and Preaction Sprinkler Systems, 21 13 26 Deluge Fire-Suppression Sprinkler Systems, 21 13 29 Water Spray Fixed Systems, 21 13 36 Antifreeze Sprinkler Systems, 22 06 10 Schedules for Plumbing Piping and Pumps, 22 11 13 Facility Water Distribution Piping, 22 11 16 Domestic Water Piping, 22 11 19 Domestic Water Piping Specialties, 22 13 16 Sanitary Waste and Vent Piping, 22 13 19 Sanitary Waste Piping Specialties, 22 14 13 Facility Storm Drainage Piping, 22 14 16 Rainwater Leaders, 22 51 13 Swimming Pool Piping, 22 52 13 Fountain Piping, 22 67 13 Processed Water Piping for Laboratory and Healthcare Facilities, 23 11 13 Facility Fuel-Oil Piping, 23 11 23 Facility Natural-Gas Piping, 23 11 26 Facility Liquefied-Petroleum Gas Piping, 23 21 13 Hydronic Piping, 23 22 13 Steam and Condensate Heating Piping, 33 05 17 Copper Utility Pipe and Tubing, 33 14 13 Public Water Utility Distribution Piping, 33 14 16 Site Water Utility Distribution Piping, 33 14 17 Site Water Utility Service Laterals, 40 05 17 Copper Process Pipe and Tubing.
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.