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

CLASSIFICATION: N/A

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.

Section 1: Summary

CONTENT INVENTORY

Threshold Disclosed Per
- Material
- Product

Threshold level
- 100 ppm
- 1,000 ppm
- Per GHS SDS
- Per OSHA MSDS
- Other

Residuals/Impurities
- Considered
- Partially Considered
- Not Considered

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.

INVENTORY AND SCREENING NOTES:
Product chemistry defined in ASTM B88 (http://www.astm.org/cgi-bin/resolver.cgi?B88) and by UNS alloy designations referenced therein (http://unscopperalloys.org/wrought/coppers.php)

VOLATILE ORGANIC COMPOUND (VOC) CONTENT
VOC Content data is not applicable for this product category.

CERTIFICATIONS AND COMPLIANCE
See Section 3 for additional listings.

CONSISTENCY WITH OTHER PROGRAMS
Pre-checked for LEED v4 Material Ingredients, Option 1

Third Party Verified?
- Yes
- No

PREPARER: Self-Prepared
VERIFIER: WAP Sustainability Consulting
VERIFICATION #: 2Pr-5403
SCREENING DATE: 2018-10-26
PUBLISHED DATE: 2018-10-26
EXPIRY DATE: 2021-10-26
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 2.1, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-1-standard

COPPER WATER TUBE - TYPE K, L, OR M - PER ASTM B88

PRODUCT THRESHOLD: 1000 ppm
RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Per ASTM B88, the tubes shall be produced from coppers that conform to the Unified Numbering System (UNS) chemical composition requirements for C12000 or C12200 alloys (see unscopperalloys.org). C12000 and C12200 both characterize copper as "copper + silver". Silver is not intentionally added and may only be present as a residual of the process by which raw material (i.e., copper ore) is refined. However, due to the high value of silver, refining operations prioritize its removal to the highest extent practical.

OTHER PRODUCT NOTES: none

COPPER

ID: 7440-50-8

%: 99.9000
GS: LT-UNK
RC: Both
NANO: No
ROLE: Primary ingredient

HAZARDS:
Agency(ies) with warnings:
None Found

None warnings found on HPD Priority lists

SUBSTANCE NOTES: Per ASTM B88, the tubes shall be produced from coppers that conform to the Unified Numbering System (UNS) chemical composition requirements for C12000 or C12200 alloys (see unscopperalloys.org). The UNS phosphorus range for C12000 is 0.004–0.012. The UNS phosphorus range for C12200 is 0.015–0.040. The GreenScreen Assessment was performed by Rosenblum Environmental Consulting on 2/9/2014, updated on 2/29/2016, and can be found at https://www.pharosproject.net/uploads/files/gs/327570a0dd19e380225448283529221cee78d609.pdf.

PHOSPHORUS

ID: 7723-14-0

%: 0.0040 - 0.0400
GS: BM-2
RC: None
NANO: No
ROLE: Deoxidizer

HAZARDS:
Agency(ies) with warnings:

PHYSICAL HAZARD (REACTIVE)
EU - GHS (H-Statements)
H228 - Flammable solid

MAMMALIAN
US EPA - EPCRA Extremely Hazardous Substances
Extremely Hazardous Substances

SUBSTANCE NOTES: Per ASTM B88, the tubes shall be produced from coppers that conform to the Unified Numbering System (UNS) chemical composition requirements for C12000 or C12200 alloys (see unscopperalloys.org). The UNS phosphorus range for C12000 is 0.004–0.012. The UNS phosphorus range for C12200 is 0.015–0.040. The GreenScreen Assessment was performed by Rosenblum Environmental Consulting on 2/9/2014, updated on 2/29/2016, and can be found at https://www.pharosproject.net/uploads/files/gs/327570a0dd19e380225448283529221cee78d609.pdf.
%: Impurity/Residual  GS: BM-1  RC: None  NANO: No  ROLE: Impurity/Residual

HAZARDS:  AGENCY(IES) WITH WARNINGS:
MULTIPLE  German FEA - Substances Hazardous to Waters  Class 3 - Severe Hazard to Waters

SUBSTANCE NOTES: Per ASTM B88, the tubes shall be produced from coppers that conform to the Unified Numbering System (UNS) chemical composition requirements for C12000 or C12200 alloys (see unscopperalloys.org). C12000 and C12200 both characterize copper as "copper + silver". Silver is not intentionally added and may only be present as a residual of the process by which raw material (i.e., copper ore) is refined. However, due to the high value of silver, refining operations prioritize its removal to the highest extent practical. The GreenScreen Assessment was performed by NSF International on 1/10/2013, revised on 2/19/2015, and can be found at https://www.pharosproject.net/uploads/files/gs/66b94fbbd794b5e37bdeec8d321a3ec47cb6c44b.pdf.
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.

### VOC EMISSIONS

**Inherently non-emitting source per LEED®**

<table>
<thead>
<tr>
<th>CERTIFYING PARTY</th>
<th>ISSUE DATE</th>
<th>EXPIRY DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-declared</td>
<td>2018-10-26</td>
<td>2021-10-26</td>
</tr>
</tbody>
</table>

**APPLICABLE FACILITIES:** All

**CERTIFICATE URL:**

**CERTIFIER OR LAB:** Self-Declared

**CERTIFICATION AND COMPLIANCE NOTES:**

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

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 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.

1. Wet-Pipe Sprinkler Systems
2. Dry-Pipe Sprinkler Systems
3. Preaction Sprinkler Systems
4. Combined Dry-Pipe and Preaction Sprinkler Systems
5. Deluge Fire-Suppression Sprinkler Systems
6. Water Spray Fixed Systems
7. Antifreeze Sprinkler Systems
8. Facility Water Distribution Piping
9. Domestic Water Piping
10. Domestic Water Piping Specialties
11. Sanitary Waste and Vent Piping
12. Sanitary Waste Piping Specialties
13. Facility Storm Drainage Piping
14. Rainwater Leaders
15. Swimming Pool Piping
16. Fountain Piping
17. Processed Water Piping for Laboratory and Healthcare Facilities
18. Facility Fuel-Oil Piping
19. Facility Liquefied-Petroleum Gas Piping
20. Hydronic Piping
21. Steam and Condensate Heating Piping
22. Copper Utility Pipe and Tubing
23. Public Water Utility Distribution Piping
24. Site Water Utility Distribution Piping
25. Site Water Utility Service Laterals
26. Copper Process Pipe and Tubing
**MANUFACTURER INFORMATION**

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

**CONTACT NAME:** Carrie Claytor  
**TITLE:** Director of Health, Environment, and Sustainable Development  
**PHONE:** 2122517220  
**EMAIL:** carrie.claytor@copperalliance.us

**KEY**

OSHA MSDS Occupational Safety and Health Administration Material Safety Data Sheet  
GHS SDS Globally Harmonized System of Classification and Labeling of Chemicals Safety Data Sheet

<table>
<thead>
<tr>
<th>Hazard Types</th>
<th>Description</th>
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<tbody>
<tr>
<td>AQU Aquatic toxicity</td>
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<tr>
<td>CAN Cancer</td>
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<tr>
<td>DEV Developmental toxicity</td>
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<tr>
<td>END Endocrine activity</td>
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<tr>
<td>EYE Eye irritation/corrosivity</td>
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<tr>
<td>GEN Gene mutation</td>
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<tr>
<td>GLO Global warming</td>
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<tr>
<td>MAM Mammalian/systemic/organ toxicity</td>
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<tr>
<td>MUL Multiple hazards</td>
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<tr>
<td>NEU Neurotoxicity</td>
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<tr>
<td>OZ0 Ozone depletion</td>
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<tr>
<td>PBT Persistent Bioaccumulative Toxic</td>
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<tr>
<td>PHY Physical Hazard (reactive)</td>
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<tr>
<td>REP Reproductive toxicity</td>
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<tr>
<td>RES Respiratory sensitization</td>
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<tr>
<td>SKI Skin sensitization/irritation/corrosivity</td>
<td></td>
</tr>
<tr>
<td>LAN Land Toxicity</td>
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<tr>
<td>NF Not found on Priority Hazard Lists</td>
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</tbody>
</table>

**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 (insufficient data to benchmark)

<table>
<thead>
<tr>
<th>Recycled Types</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreC Preconsumer (Post-Industrial)</td>
<td></td>
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<tr>
<td>PostC Postconsumer</td>
<td></td>
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<tr>
<td>Both Both Preconsumer and Postconsumer</td>
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</tr>
<tr>
<td>Unk Inclusion of recycled content is unknown</td>
<td></td>
</tr>
<tr>
<td>None Does not include recycled content</td>
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</tr>
</tbody>
</table>

**Other Terms**

<table>
<thead>
<tr>
<th>Inventory Methods</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nested Method / Material Threshold</td>
<td>Substances listed within each material per threshold indicated per material</td>
</tr>
<tr>
<td>Nested Method / Product Threshold</td>
<td>Substances listed within each material per threshold indicated per product</td>
</tr>
<tr>
<td>Basic Method / Product Threshold</td>
<td>Substances listed individually per threshold indicated per product</td>
</tr>
</tbody>
</table>

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.