



HPD UNIQUE IDENTIFIER: 1515949056

CLASSIFICATION: N/A

PRODUCT DESCRIPTION: UNS C12200 is a Phosphorus-Deoxidized, High Residual P wrought copper alloy that can be fabricated by blanking, coining, coppersmithing, drawing, etching, forming and bending, heading and upsetting, hot forging and pressing, piercing and punching, roll threading and knurling, shearing, spinning, squeezing and swaging, and stamping, among other fabrication processes. This alloy is used in a variety of applications for its corrosion resistance. This Alloy HPD complies with Option 2 of the Metal Alloys Special Condition, as an HPD whose main purpose is to report on the elemental contents of a metal alloy. MasterFormat is selected as not applicable because this product HPD is created by a metal trade association for a metal alloy that is further fabricated into different product end-use applications. This notation is made in collaboration with HPDC's Hazards Technical Sub-Group to support the Metal Alloy Special Condition.

Section 1: Summary

Basic Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format	Threshold Level	Residuals/Impurities Evaluation	For all contents above the threshold, the manufacturer has:
☐ Nested Materials Method	☐ 100 ppm	☒ Completed	Characterized ☒ Yes ☐ No
☒ Basic Method	☐ 1,000 ppm	☐ Partially Completed	Provided weight and role.
Threshold Disclosed Per	☐ Per GHS SDS	☐ Not Completed	Screened ☒ Yes ☐ No
☐ Material	☒ Other	Explanation(s) provided :	Provided screening results using HPDC-approved methods.
☒ Product		☒ Yes ☐ No	Identified ☒ Yes ☐ No
			Provided name and CAS RN or other identifier.

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.

PRODUCT | MATERIAL OR SUBSTANCE | RESIDUAL OR IMPURITY
GREENSCREEN SCORE | HAZARD TYPE
UNS C12200 COPPER ALLOY | COPPER LT-P1 | MUL | AQU | MAM
PHOSPHORUS BM-2 | MAM | PHY | EYE | AQU | SKI]

Number of Greenscreen BM-4/BM3 contents ... 0
Contents highest-concern GreenScreen score(s) (BM-1, LT-1, LT-P1) ... LT-P1
Nanomaterial ... No
INVENTORY AND SCREENING NOTES:

The formulation of each of these alloys was generated from the UNS designation, as found at www.unscopperalloys.org and alloys.copper.org, and duplicated in the 3E Exchange Passport Library. UNS and EN are composition-based systems of commercial materials that do not articulate a reporting threshold but are the best available options to associate individual systems and is supported by major trade associations. 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. The content reported in this HPD follows the Best Practices for Metal Trade Associations Creating a Metal Alloy HPD and complies with Option 2 of the Metal Alloys Special Condition.

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?	PREPARER: Self-Prepared	SCREENING DATE: 2024-05-20
☒ Yes	VERIFIER: WAP Sustainability Consulting	PUBLISHED DATE: 2024-06-06
☐ No	VERIFICATION #: zPr-20068	EXPIRY DATE: 2027-05-20

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 2.3, available on the HPDC website at: www.hpd-collaborative.org/hpd-2-3-standard

UNS C12200 COPPER ALLOY

PRODUCT THRESHOLD: OtherRESIDUALS AND IMPURITIES EVALUATION COMPLETED: Yes

RESIDUALS AND IMPURITIES NOTES: Residuals and impurities identified in this copper alloy are defined by the specific UNS alloy number. HPD users may obtain a Supplier Certificate of Analysis for specific alloy composition and concentration of alloying elements. HPD authors with a Certificate of Analysis should enter a functional URL to that certificate, e.g., a link posted on your website.

OTHER PRODUCT NOTES: As noted in the HPDC Metal Alloys Special Condition (Version: SCMetalAlloy/2023-07-20): "Metal alloys have different intrinsic characteristics than the metals encapsulated therein. This is due in part to the impact of the alloying process on microstructural features including grain size, inclusions, impurities, second phases, porosity, and segregation, which in turn influences physical properties and surface phenomena.

Similarly, alloys are generally expected to have different hazards than their alloying elements. These differences are driven by the following factors: the elemental composition of the alloy as a metal mixture; the speciation of metals contained within the alloy; and the solubility of, or release of metal ions from, the surface of the alloy... Hazard assessment of metals is unique, in that it evaluates data typically associated with exposure, i.e., information on solubility, bioaccessibility, and bioavailability, in combination with toxicological data to characterize the intrinsic toxicity of metallic substances. This approach recognizes that the metal ion is the toxic moiety responsible for effects observed in vivo, and the metal ion's oxidation state and biological interaction determine the toxicity."

COPPERID: 7440-50-8

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2024-05-20 8:37:11	
%: 99.9000 - 100.0000	GreenScreen: LT-P1	RC: UNK	NANO: No	SUBSTANCE ROLE: Alloy element
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
MUL	German FEA - Substances Hazardous to Waters	Class 3 - Severe Hazard to Waters		
AQU	EU - GHS (H-Statements) Annex 6 Table 3-1	H411 - Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 2]		
MAM	GHS - Japan	H335 - May cause respiratory irritation [Specific target organ toxicity - Single exposure - Category 3]		
MAM	GHS - Japan	H370 - Causes damage to organs [Specific target organs/systemic toxicity following single exposure - Category 1]		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Perkins+Will (P+W)	P&W - Precautionary List Precautionary list of substances recommended for avoidance
RESTRICTED LIST	Green Science Policy Institute (GSPI)	GSPI - Six Classes Precautionary List Antimicrobials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Biological and Environmentally Released Materials
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CP II)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Children's Products

SUBSTANCE NOTES: Recycled content type and source are dependent on the alloy manufacturer/provider. This value includes silver (Ag), though it 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 Ag, refining operations prioritize its removal to the highest extent practical.

PHOSPHORUS

ID: 7723-14-0

HAZARD DATA SOURCE: Pharos Chemical and Materials Library			HAZARD SCREENING DATE: 2024-05-20 8:37:11	
%: 0.0150 - 0.0400	GreenScreen: BM-2	RC: UNK	NANO: No	SUBSTANCE ROLE: Alloy element
HAZARD TYPE	LIST NAME AND SOURCE	WARNINGS		
MAM	US EPA - EPCRA Extremely Hazardous Substances	Extremely Hazardous Substances		
MAM	GHS - New Zealand	Specific target organ toxicity - repeated exposure category 1		
PHY	GHS - New Zealand	Pyrophoric solids category 1		
EYE	GHS - New Zealand	Serious eye damage category 1		
AQU	GHS - New Zealand	Hazardous to the aquatic environment - acute category 1		
AQU	GHS - New Zealand	Hazardous to the aquatic environment - chronic category 1		
MAM	Québec CSST - WHMIS 1988	Class D1A - Very toxic material causing immediate and serious toxic effects		
SKI	GHS - New Zealand	Skin corrosion category 1A		
MAM	GHS - New Zealand	Acute dermal toxicity category 1		
MAM	GHS - New Zealand	Acute inhalation toxicity category 1		
MAM	GHS - New Zealand	Acute oral toxicity category 1		

ADDITIONAL LISTINGS	LIST NAME AND SOURCE	NOTIFICATION
RESTRICTED LIST	Cradle to Cradle Products Innovation Institute (C2CPII)	C2C Certified v4 Product Standard Restricted Substances List (RSL) - Effective July 1, 2022 Cosmetics & Personal Care Products
SUBSTANCE NOTES: Recycled content type and source are dependent on the alloy manufacturer/provider.		

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	
CERTIFYING PARTY: Self-declared	ISSUE DATE: 2024-01-07 00:00:00	CERTIFIER OR LAB: None
APPLICABLE FACILITIES: All	EXPIRY DATE:	
CERTIFICATE URL:		
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

The formulation of each of these alloys was generated from the UNS designation, as found at www.unscopperalloys.org and alloys.copper.org, and duplicated in the 3E Exchange Passport Library. The Copper Alloys Advanced Search (alloys.copper.org), developed by the Copper Development Association, provides additional details and specifications regarding copper alloys, including mechanical and physical properties, fabrication properties, casting characteristics, and applicable specifications. Additionally, a list of Copper Development Association members (and copper alloy manufacturers) can be found at <https://www.copper.org>.

Typical building product applications of this alloy include, but are not limited to: downspouts, flashing, gutters, roofing, air conditioners, air conditioner tubes and condenser sheets, gas lines, heater lines, heater units, and oil burner tubes.

Copper alloys are cited in many ASTM standards, which can be found at <https://www.astm.org/products-services/standards-and-publications.html>. Applicable specifications include:

- ASTM B152/B152M Copper Sheet, Strip, Plate and Rolled Bar
- ASTM B187/B187M Copper Bus Bar, Rod and Shales and General Purpose Rod, Bar and Shapes
- ASTM B956/B956M Welded Copper and Copper-Alloy Condenser and Heat Exchanger Tubes with Integral Fins
- ASME B16.22 Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings
- ASME B16.29 Wrought Copper and Copper Alloy Solder-Joint Drainage Fittings
- ASTM B687 Brass, Copper and Chromium Plated Pipe Nipples
- ASTM B42/ASME SB42 Seamless Copper Pipe, Standard Sizes
- ASME B698 Copper, Copper Alloy Plumbing Pipe and Tube
- ASTM B302 Threadless Copper Pipe
- ASTM B506 Copper Clad Stainless Steel Sheet and Strip for Building Construction
- ASTM B101 Lead-Coated Copper Sheet
- ASTM B370 Copper Sheet and Strip for Building Construction
- ASTM B280 Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
- ASTM B640 Welded Copper and Copper Alloy Tube for Air Conditioning and Refrigeration Service
- ASTM B395/B395M / ASME SB395 U-Bend Seamless Copper and Copper Alloy Heat Exchanger and Condenser Tubes
- ASTM B359/B359M Copper and Copper-Alloy Seamless Condenser and Heat Exchanger Tubes with Integral Fins
- ASTM B543/B543M Welded Copper and Copper Alloy Heat Exchanger Tube
- ASTM B111/B111M Copper and Copper Alloy Seamless Condenser Tubes and Ferrule Stock
- ASTM B272 Copper Flat Products with Finished (Rolled or Drawn) Edges (Flat Wire and Strip)
- ASTM B88 Seamless Copper Water Tube

MANUFACTURER INFORMATION

MANUFACTURER: **Copper Development Association**
ADDRESS: **1660 International Drive**
Suite 600
McLean, Virginia 22102
COUNTRY: **United States**

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

GreenScreen (GS)

BM-4 Benchmark 4 (prefer-safer chemical)	LT-P1 List Translator Possible 1 (Possible Benchmark-1)
BM-3 Benchmark 3 (use but still opportunity for improvement)	LT-1 List Translator 1 (Likely Benchmark-1)
BM-2 Benchmark 2 (use but search for safer substitutes)	LT-UNK List Translator Benchmark Unknown
BM-1 Benchmark 1 (avoid - chemical of high concern)	NoGS No GreenScreen.
BM-U Benchmark Unspecified (due to insufficient data)	

GreenScreen Benchmark scores sometimes also carry subscripts, which provide more context for how the score was determined. These are DG (data gap), TP (transformation product), and CoHC (chemical of high concern). For more information, see 2.2.2.4 GreenScreen® for Safer Chemicals, www.greenscreenchemicals.org, and Best Practices for Hazard Screening on the HPDC website (hpd-collaborative.org).

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

