

**CLASSIFICATION:** N/A

**PRODUCT DESCRIPTION:** Free-cutting brass, as manufactured by a Copper Development Association member, per ASTM B16. ASTM B16 establishes the requirements for free-cutting brass rod, bar, wire, and shapes of any specified cross section produced from copper alloy Unified Numbering System (UNS) Nos. C36000 or C36010 suitable for high-speed screw machining applications and moderate thread rolling. This HPD focuses on C36000 brass as a raw material.

## Section 1: Summary

## Basic Method / Product Threshold

### 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  
 Per OSHA MSDS  
 Other

#### Residuals/Impurities

- Considered  
 Partially Considered  
 Not Considered

Explanation(s) provided for Residuals/Impurities?

- Yes  No

*Are All Substances Above the Threshold Indicated:*

**Characterized**  Yes  No

*Percent Weight and Role Provided?*

**Screened**  Yes  No

*Using Priority Hazard Lists with Results Disclosed?*

**Identified**  Yes  No

*Name and Identifier Provided?*

### 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

**FREE-CUTTING BRASS ROD, BAR AND SHAPES PER ASTM B16** [ **COPPER**

**LT-UNK** **ZINC** **LT-P1** | AQU | PHY | END | MUL **LEAD** **LT-1** | DEL | CAN | PBT |

REP | MUL | END | GEN *IRON* **LT-P1** | END ]

Number of Greenscreen BM-4/BM3 contents ... 0

Contents highest concern GreenScreen Benchmark or List translator Score ... LT-1

Nanomaterial ... No

#### INVENTORY AND SCREENING NOTES:

Product chemistry defined in ASTM B16 (<http://www.astm.org/cgi-bin/resolver.cgi?B16>) and by UNS alloy designations referenced therein (<http://unscopperalloys.org/wrought/brasses.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.

VOC emissions: Inherently non-emitting source per LEED®

#### 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 #: zPr-6683

SCREENING DATE: 2018-12-13

PUBLISHED DATE: 2018-12-13

EXPIRY DATE: 2021-12-13



# 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](http://www.hpd-collaborative.org/hpd-2-1-standard)

## FREE-CUTTING BRASS ROD, BAR AND SHAPES PER ASTM B16

PRODUCT THRESHOLD: 1000 ppm

RESIDUALS AND IMPURITIES CONSIDERED: Yes

RESIDUALS AND IMPURITIES NOTES: Per ASTM B16, the products shall be a cast billet of copper conforming to the Unified Numbering System (UNS) chemical composition requirements for C36000 alloy (see [unscopperalloys.org](http://unscopperalloys.org)), and of such purity and soundness as to be suitable for hot extrusion into rod, bar, wire, and shaped products. The UNS requirements for iron are constrained to a maximum allowable level in C36000, indicating it is not intentionally added.

OTHER PRODUCT NOTES: none

### COPPER

ID: 7440-50-8

#: 60.0000 - 63.0000 GS: LT-UNK RC: Both NANO: No ROLE: Primary ingredient

HAZARDS:

AGENCY(IES) WITH WARNINGS:

None Found

No warnings found on HPD Priority lists

SUBSTANCE NOTES: Per ASTM B16, the products shall be a cast billet of copper conforming to the Unified Numbering System (UNS) chemical composition requirements for C36000 alloy (see [unscopperalloys.org](http://unscopperalloys.org)), and of such purity and soundness as to be suitable for hot extrusion into rod, bar, wire, and shaped products. Pre Consumer Recycled Content Products: Recyclable copper and brass materials generated during production which is recycled within the plant where it originates, or bought back from customers or scrap dealers (e.g., chips, turnings, and solids from machining operations) Post Consumer Recycled Content Products: Scrap brass pipes, shell casings, and uniform products from large-scale demolition (e.g., water meters, fittings, and fixtures)

### ZINC

ID: 7440-66-6

#: 34.0000 - 37.5000 GS: LT-P1 RC: Both NANO: No ROLE: Corrosion resistance, mechanical and physical properties

HAZARDS:

AGENCY(IES) WITH WARNINGS:

ACUTE AQUATIC

EU - GHS (H-Statements)

H400 - Very toxic to aquatic life

CHRON AQUATIC

EU - GHS (H-Statements)

H410 - Very toxic to aquatic life with long lasting effects

PHYSICAL HAZARD (REACTIVE)

EU - GHS (H-Statements)

H250 - Catches fire spontaneously if exposed to air

PHYSICAL HAZARD (REACTIVE)

EU - GHS (H-Statements)

H260 - In contact with water releases flammable gases which may ignite spontaneously

ENDOCRINE

TEDX - Potential Endocrine Disruptors

Potential Endocrine Disruptor

MULTIPLE

German FEA - Substances Hazardous to Waters

Class 2 - Hazard to Waters

SUBSTANCE NOTES: Per ASTM B16, the products shall be a cast billet of copper conforming to the Unified Numbering System (UNS) chemical composition requirements for C36000 alloy (see [unscopperalloys.org](http://unscopperalloys.org)), and of such purity and soundness as to be suitable for hot extrusion into rod, bar, wire, and shaped products. Pre Consumer Recycled Content Products: Recyclable zinc and brass materials generated during production which is recycled within the plant where it originates, or bought back from customers or scrap dealers (e.g., chips, turnings, and solids from machining operations) Post Consumer Recycled Content Products: Scrap brass pipes, shell casings, and uniform products from large-scale demolition (e.g., water meters, fittings, and fixtures)

**LEAD**

ID: 7439-92-1

HAZARDS:	AGENCY(IES) WITH WARNINGS:	
%: <b>2.5000 - 3.0000</b>	GS: <b>LT-1</b>	RC: <b>Both</b>
		NANO: <b>No</b>
		ROLE: <b>Machinability improvement</b>
DEVELOPMENTAL	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CANCER	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CANCER	IARC	Group 2A - Agent is probably Carcinogenic to humans
CANCER	IARC	Group 2B - Possibly carcinogenic to humans
CANCER	CA EPA - Prop 65	Carcinogen
DEVELOPMENTAL	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Female
REPRODUCTIVE	CA EPA - Prop 65	Reproductive Toxicity - Male
CANCER	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
PBT	US EPA - Toxics Release Inventory PBTs	PBT
REPRODUCTIVE	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
DEVELOPMENTAL	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REPRODUCTIVE	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REPRODUCTIVE	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child
DEVELOPMENTAL	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children
REPRODUCTIVE	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
MULTIPLE	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
ENDOCRINE	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
CANCER	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man

CANCER	Korea - GHS	Carcinogenicity - Category 1 [H350 - May cause cancer]
REPRODUCTIVE	Korea - GHS	Reproductive toxicity - Category 1 [H360 - May damage fertility or the unborn child]
REPRODUCTIVE	New Zealand - GHS	6.8A - Known or presumed human reproductive or developmental toxicants
REPRODUCTIVE	Japan - GHS	Toxic to reproduction - Category 1A
GENE MUTATION	MAK	Germ Cell Mutagen 3a
REPRODUCTIVE	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
DEVELOPMENTAL	Australia - GHS	H360Df - May damage the unborn child. Suspected of damaging fertility

SUBSTANCE NOTES: Per ASTM B16, the products shall be a cast billet of copper conforming to the Unified Numbering System (UNS) chemical composition requirements for C36000 alloy (see unscopperalloys.org), and of such purity and soundness as to be suitable for hot extrusion into rod, bar, wire, and shaped products. Pre Consumer Recycled Content Products: Recyclable lead and brass materials generated during production which is recycled within the plant where it originates, or bought back from customers or scrap dealers (e.g., chips, turnings, and solids from machining operations) Post Consumer Recycled Content Products: Scrap brass pipes, shell casings, and uniform products from large-scale demolition (e.g., water meters, fittings, and fixtures)

## IRON

ID: 7439-89-6

#: **Impurity/Residual**      GS: **LT-P1**      RC: **None**      NANO: **No**      ROLE: **Impurity/Residual**

HAZARDS:

AGENCY(IES) WITH WARNINGS:

ENDOCRINE

TEDX - Potential Endocrine Disruptors

Potential Endocrine Disruptor

SUBSTANCE NOTES: Per ASTM B16, the products shall be a cast billet of copper conforming to the Unified Numbering System (UNS) chemical composition requirements for C36000 alloy (see unscopperalloys.org), and of such purity and soundness as to be suitable for hot extrusion into rod, bar, wire, and shaped products. The UNS requirements for iron are constrained to a maximum allowable level in C36000, indicating it is not intentionally added.

## 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: **2018-**

EXPIRY DATE:

CERTIFIER OR LAB: **Self-declared**

APPLICABLE FACILITIES: **All**

**12-13**

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

A list of Copper Development Association members can be found at <https://www.copper.org/about/cda-members.html>. With the maximum machinability rating of 100, high yield strength, good corrosion resistance and high scrap value, brass rod is the premier material for precision parts machined from bar stock. The high-speed machining capabilities of brass rod enable full utilization of advanced production technology, which allows manufacturers to increase productivity and profitability. Brass rod is made almost entirely from recycled content and most post-processing brass scrap holds 75 to 90 percent of its original value. The high scrap value of brass creates recycling incentives which support sustainable development and allow manufacturers to recoup raw material costs. Additional information is available at [www.highspeedmachiningbrass.com](http://www.highspeedmachiningbrass.com).



## MANUFACTURER INFORMATION

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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

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**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

### Hazard Types

**AQU** Aquatic toxicity

**CAN** Cancer

**DEV** Developmental toxicity

**END** Endocrine activity

**EYE** Eye irritation/corrosivity

**GEN** Gene mutation

**GLO** Global warming

**MAM** Mammalian/systemic/organ toxicity

**MUL** Multiple hazards

**NEU** Neurotoxicity

**OZO** Ozone depletion

**PBT** Persistent Bioaccumulative Toxic

**PHY** Physical Hazard (reactive)

**REP** Reproductive toxicity

**RES** Respiratory sensitization

**SKI** Skin sensitization/irritation/corrosivity

**LAN** Land Toxicity

**NF** Not found on Priority Hazard Lists

### 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)

**LT-P1** List Translator Possible Benchmark 1

**LT-1** List Translator Likely Benchmark 1

**LT-UNK** List Translator Benchmark Unknown (insufficient information from List Translator lists to benchmark)

**NoGS** Unknown (no data on List Translator Lists)

### Recycled Types

**PreC** Preconsumer (Post-Industrial)

**PostC** Postconsumer

**Both** Both Preconsumer and Postconsumer

**Unk** Inclusion of recycled content is unknown

**None** Does not include recycled content

### Other Terms

#### 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.*