

Copper and Copper Alloy Press-Connect Pressure Fittings per ASME B16.51-2018 by Copper Development Association

Health Product Declaration v2.2

created via: HPDC Online Builder

HPD UNIQUE IDENTIFIER: 28643

CLASSIFICATION: 22 10 00 Plumbing Piping

PRODUCT DESCRIPTION: Copper and Copper Alloy Press-Connect Pressure Fittings, as manufactured by a Copper Development Association member, per ASME B16.51-2018, designed for use with seamless copper tube conforming to ASTM B88 (water and general plumbing 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

Nested Method / Product Threshold

CONTENT INVENTORY

Inventory Reporting Format	Threshold Level	Residuals/Impurities	<i>All Substances Above the Threshold Indicated Are:</i>
<input checked="" type="radio"/> Nested Materials Method	<input type="radio"/> 100 ppm	Considered in 10 of 10 Materials	Characterized <input type="radio"/> Yes Ex/SC <input checked="" type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Basic Method	<input type="radio"/> 1,000 ppm	Explanation(s) provided for Residuals/Impurities?	<i>% weight and role provided for all substances.</i>
Threshold Disclosed Per	<input type="radio"/> Per GHS SDS	<input checked="" type="radio"/> Yes <input type="radio"/> No	Screened <input type="radio"/> Yes Ex/SC <input checked="" type="radio"/> Yes <input type="radio"/> No
<input type="radio"/> Material	<input checked="" type="radio"/> Other		<i>All substances screened using Priority Hazard Lists with results disclosed.</i>
<input checked="" type="radio"/> Product			Identified <input type="radio"/> Yes Ex/SC <input checked="" type="radio"/> Yes <input type="radio"/> No
			<i>All substances disclosed by Name (Specific or Generic) and Identifier.</i>

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 C10200 COPPER ALLOY [COPPER LT-UNK] UNS C12000 COPPER ALLOY [COPPER LT-UNK PHOSPHORUS BM-2 | MAM | PHY] UNS C12200 COPPER ALLOY [COPPER LT-UNK PHOSPHORUS BM-2 | MAM | PHY] UNS C23000 COPPER ALLOY [COPPER LT-UNK ZINC LT-P1 | END | MUL | AQU | PHY IRON LT-P1 | END LEAD BM-1 | END | PBT | REP | MUL | CAN | DEV | GEN] UNS C83600 COPPER ALLOY [NICKEL (METALLIC) LT-1 | CAN | RES | MUL | SKI | MAM COPPER LT-UNK LEAD BM-1 | END | PBT | REP | MUL | CAN | DEV | GEN TIN, ORGANIC LT-UNK ZINC LT-P1 | END | MUL | AQU | PHY IRON LT-P1 | END ANTIMONY LT-1 | CAN | AQU SULFUR, ELEMENTAL LT-UNK | SKI PHOSPHORUS BM-2 | MAM | PHY] UNS C83800 COPPER ALLOY [PHOSPHORUS BM-2 | MAM | PHY COPPER LT-UNK ZINC LT-P1 | END | MUL | AQU | PHY LEAD BM-1 | END | PBT | REP | MUL | CAN | DEV | GEN TIN, ORGANIC LT-UNK NICKEL (METALLIC) LT-1 | CAN | RES | MUL | SKI | MAM IRON LT-P1 | END ANTIMONY LT-1 | CAN | AQU SULFUR, ELEMENTAL LT-UNK | SKI] UNS C84400 COPPER ALLOY [COPPER LT-UNK ZINC LT-P1 | END | MUL | AQU | PHY LEAD BM-1 | END | PBT | REP | MUL | CAN | DEV | GEN TIN, ORGANIC LT-UNK NICKEL (METALLIC) LT-1 | CAN | RES | MUL | SKI | MAM IRON LT-P1 | END ANTIMONY LT-1 | CAN | AQU SULFUR, ELEMENTAL LT-UNK | SKI PHOSPHORUS BM-2 | MAM | PHY] UNS C87850 COPPER ALLOY [TIN, ORGANIC LT-UNK COPPER LT-UNK ZINC LT-P1 | END | MUL | AQU | PHY SILICON LT-UNK NICKEL (METALLIC) LT-1 | CAN | RES | MUL | SKI | MAM PHOSPHORUS BM-2 | MAM | PHY ANTIMONY LT-1 | CAN | AQU IRON

Number of Greenscreen BM-4/BM3 contents ... 1
 Contents highest concern GreenScreen Benchmark or List translator Score ... BM-1
 Nanomaterial ... No

INVENTORY AND SCREENING NOTES:

Special Conditions applied: [Metal/Alloy]. 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.

LT-P1 | END LEAD BM-1 | END | PBT | REP | MUL | CAN | DEV | GEN
MANGANESE LT-P1 | END | MUL | REP] UNS C89833 COPPER ALLOY
[COPPER LT-UNK TIN, ORGANIC LT-UNK] ELASTOMER SEAL [BICYCLO(2.2.1)HEPT-2-ENE, 5-ETHYLIDENE-, POLYMER WITH ETHENE AND 1-PROPENE LT-UNK CARBON BLACK BM-1 | CAN RESIDUAL OILS, PETROLEUM, HYDROTREATED LT-1 | CAN | PBT | MUL CALCIUM CARBONATE BM-3]

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-13458

SCREENING DATE: 2021-10-14

PUBLISHED DATE: 2022-06-08

EXPIRY DATE: 2024-10-14

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

UNS C10200 COPPER ALLOY

#: 96.7200 - 97.9600

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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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 is a high conductivity Cu which has, in the annealed condition a minimum conductivity of 100% IACS.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library

HAZARD SCREENING DATE: 2021-10-14 7:38:17

#: 0.0000 - 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

UNS C12000 COPPER ALLOY

#: 96.7200 - 97.9600

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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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: **2021-10-14 7:38:12**%: **0.0000 - 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: 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: 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: **2021-10-14 7:38:13**%: **0.0000 - 0.0120** 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)	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES:

UNS C12200 COPPER ALLOY%: **96.7200 - 97.9600**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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:13**%: **0.0000 - 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: 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: 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: **2021-10-14 7:38:14**%: **0.0000 - 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)	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES:

UNS C23000 COPPER ALLOY%: **96.7200 - 97.9600**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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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. Cu + Sum of Named Elements 99.8% min.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:14**%: **0.0000 - 86.0000** 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: 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

ZINC

ID: 7440-66-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:15**

#: **0.0000 - 16.0000** GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
AQU	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
PHY	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]

SUBSTANCE NOTES: Zn is the remainder after all the other alloying elements are included.

IRON

ID: 7439-89-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:15**

#: **0.0000 - 0.0500** GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: This is a residual element in the alloy.

LEAD

ID: 7439-92-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:16**

#: **0.0000 - 0.0500** GS: **BM-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
REP	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list

PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
CAN	CA EPA - Prop 65	Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
DEV	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CAN	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CAN	IARC	Group 2a - Agent is probably Carcinogenic to humans
DEV	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
PBT	US EPA - Toxics Release Inventory PBTs	PBT
DEV	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REP	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REP	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
GEN	MAK	Germ Cell Mutagen 3a
REP	CA EPA - Prop 65	Reproductive Toxicity - Female
REP	CA EPA - Prop 65	Reproductive Toxicity - Male
REP	GHS - New Zealand	6.8A - Known or presumed human reproductive or developmental toxicants
REP	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child [Reproductive toxicity - Category 1A or 1B]
CAN	GHS - Korea	H350 - May cause cancer [Carcinogenicity - Category 1]
DEV	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children [Reproductive toxicity, effects on or via lactation]
REP	GHS - Korea	H360 - May damage fertility or the unborn child [Reproductive toxicity - Category 1]
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1A]
DEV	GHS - Australia	H360Df - May damage the unborn child. Suspected of damaging fertility [Reproductive toxicity - Category 1A or 1B]

SUBSTANCE NOTES: This is a residual element in the alloy.

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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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. In determining Cu min., Cu may be calculated as Cu + Ni. For continuous castings, P shall be 1.5% max. Cu + Sum of Named Elements 99.3% min.

NICKEL (METALLIC)

ID: 7440-02-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:18**

#: **0.0000 - 1.0000** GS: **LT-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	CA EPA - Prop 65	Carcinogen
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
SKI	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction [Skin sensitization - Category 1]
CAN	EU - GHS (H-Statements)	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]

SUBSTANCE NOTES: This value includes Co, 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 Co, refining operations prioritize its removal to the highest extent practical. This is a residual element in the alloy.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:16**

#: **0.0000 - 86.0000** 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: 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

LEAD

ID: 7439-92-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:12**

%: **0.0000 - 6.0000** GS: **BM-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
REP	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
CAN	CA EPA - Prop 65	Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
DEV	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CAN	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CAN	IARC	Group 2a - Agent is probably Carcinogenic to humans
DEV	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
PBT	US EPA - Toxics Release Inventory PBTs	PBT
DEV	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REP	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REP	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
GEN	MAK	Germ Cell Mutagen 3a
REP	CA EPA - Prop 65	Reproductive Toxicity - Female
REP	CA EPA - Prop 65	Reproductive Toxicity - Male

REP	GHS - New Zealand	6.8A - Known or presumed human reproductive or developmental toxicants
REP	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child [Reproductive toxicity - Category 1A or 1B]
CAN	GHS - Korea	H350 - May cause cancer [Carcinogenicity - Category 1]
DEV	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children [Reproductive toxicity, effects on or via lactation]
REP	GHS - Korea	H360 - May damage fertility or the unborn child [Reproductive toxicity - Category 1]
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1A]
DEV	GHS - Australia	H360Df - May damage the unborn child. Suspected of damaging fertility [Reproductive toxicity - Category 1A or 1B]

SUBSTANCE NOTES:

TIN, ORGANIC

ID: 7440-31-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:17**

#: **0.0000 - 6.0000** GS: **LT-UNK** RC: **UNK** 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:

ZINC

ID: 7440-66-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:18**

#: **0.0000 - 6.0000** GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
AQU	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
PHY	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]

SUBSTANCE NOTES:

IRON

ID: 7439-89-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:19**%: **0.0000 - 0.3000** GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: This is a residual element in the alloy.

ANTIMONY

ID: 7440-36-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:22**%: **0.0000 - 0.2500** GS: **LT-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
AQU	EU - GHS (H-Statements)	H411 - Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

SULFUR, ELEMENTAL

ID: 7704-34-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:22**%: **0.0000 - 0.0800** GS: **LT-UNK** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
SKI	EU - GHS (H-Statements)	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

PHOSPHORUS

ID: 7723-14-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:22**%: **0.0000 - 0.0500** 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)	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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. In determining Cu min., Cu may be calculated as Cu + Ni. For continuous castings, P shall be 1.5% max. Cu + Sum of Named Elements 99.3% min.

PHOSPHORUS

ID: 7723-14-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: 2021-09-10 9:52:10

#: 0.0000 - 0.0300 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)	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: 2021-10-14 7:38:23

#: 0.0000 - 83.0000 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: 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

ZINC

ID: 7440-66-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: 2021-10-14 7:38:23

#: 0.0000 - 8.0000 GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
AQU	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
PHY	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]

SUBSTANCE NOTES:

LEAD

ID: 7439-92-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:24**

%: **0.0000 - 7.0000**

GS: **BM-1**

RC: **UNK**

NANO: **No**

SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
REP	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
CAN	CA EPA - Prop 65	Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
DEV	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CAN	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CAN	IARC	Group 2a - Agent is probably Carcinogenic to humans
DEV	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT

PBT	US EPA - Toxics Release Inventory PBTs	PBT
DEV	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REP	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REP	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
GEN	MAK	Germ Cell Mutagen 3a
REP	CA EPA - Prop 65	Reproductive Toxicity - Female
REP	CA EPA - Prop 65	Reproductive Toxicity - Male
REP	GHS - New Zealand	6.8A - Known or presumed human reproductive or developmental toxicants
REP	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child [Reproductive toxicity - Category 1A or 1B]
CAN	GHS - Korea	H350 - May cause cancer [Carcinogenicity - Category 1]
DEV	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children [Reproductive toxicity, effects on or via lactation]
REP	GHS - Korea	H360 - May damage fertility or the unborn child [Reproductive toxicity - Category 1]
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1A]
DEV	GHS - Australia	H360Df - May damage the unborn child. Suspected of damaging fertility [Reproductive toxicity - Category 1A or 1B]

SUBSTANCE NOTES:

TIN, ORGANIC

ID: 7440-31-5

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-10-14 7:38:25	
%: 0.0000 - 4.2000 GS: LT-UNK RC: UNK 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:

NICKEL (METALLIC)

ID: 7440-02-0

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-10-14 7:38:25
%: 0.0000 - 1.0000 GS: LT-1 RC: UNK NANO: No SUBSTANCE ROLE: Alloy element	

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	CA EPA - Prop 65	Carcinogen
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
SKI	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction [Skin sensitization - Category 1]
CAN	EU - GHS (H-Statements)	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]

SUBSTANCE NOTES: This value includes Co, 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 Co, refining operations prioritize its removal to the highest extent practical. This is a residual element in the alloy.

IRON

ID: 7439-89-6

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-10-14 7:38:26	
%: 0.0000 - 0.3000 GS: LT-P1 RC: UNK NANO: No SUBSTANCE ROLE: Alloy element		
HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: This is a residual element in the alloy.

ANTIMONY

ID: 7440-36-0

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-09-10 9:52:04
%: 0.0000 - 0.2500 GS: LT-1 RC: UNK NANO: No SUBSTANCE ROLE: Alloy element	

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
AQU	EU - GHS (H-Statements)	H411 - Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

SULFUR, ELEMENTAL

ID: 7704-34-9

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-09-10 9:51:51
%: 0.0000 - 0.0800 GS: LT-UNK RC: UNK NANO: No SUBSTANCE ROLE: Alloy element	

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
SKI	EU - GHS (H-Statements)	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

UNS C84400 COPPER ALLOY

%: 96.7200 - 97.9600

PRODUCT THRESHOLD: Other	RESIDUALS AND IMPURITIES CONSIDERED: Yes	MATERIAL TYPE: Metal
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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, individual substance-level hazards may not apply when alloyed. 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. In determining Cu min., Cu may be calculated as Cu + Ni. For continuous castings, P shall be 1.5% max. Cu + Sum of Named Elements 99.3% min.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-09-10 9:52:15
%: 0.0000 - 82.0000 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: 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

ZINC

ID: 7440-66-6

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library	HAZARD SCREENING DATE: 2021-09-10 9:52:30
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#: 0.0000 - 10.0000

GS: LT-P1

RC: UNK

NANO: No

SUBSTANCE ROLE: Alloy element

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
AQU	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
PHY	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]

SUBSTANCE NOTES:

LEAD

ID: 7439-92-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:53:09**

#: 0.0000 - 8.0000

GS: BM-1

RC: UNK

NANO: No

SUBSTANCE ROLE: Alloy element

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
REP	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
CAN	CA EPA - Prop 65	Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
DEV	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CAN	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CAN	IARC	Group 2a - Agent is probably Carcinogenic to humans
DEV	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
PBT	US EPA - Toxics Release Inventory PBTs	PBT

DEV	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REP	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REP	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
GEN	MAK	Germ Cell Mutagen 3a
REP	CA EPA - Prop 65	Reproductive Toxicity - Female
REP	CA EPA - Prop 65	Reproductive Toxicity - Male
REP	GHS - New Zealand	6.8A - Known or presumed human reproductive or developmental toxicants
REP	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child [Reproductive toxicity - Category 1A or 1B]
CAN	GHS - Korea	H350 - May cause cancer [Carcinogenicity - Category 1]
DEV	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children [Reproductive toxicity, effects on or via lactation]
REP	GHS - Korea	H360 - May damage fertility or the unborn child [Reproductive toxicity - Category 1]
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1A]
DEV	GHS - Australia	H360Df - May damage the unborn child. Suspected of damaging fertility [Reproductive toxicity - Category 1A or 1B]

SUBSTANCE NOTES:

TIN, ORGANIC

ID: 7440-31-5

HAZARD SCREENING METHOD:	Pharos Chemical and Materials Library	HAZARD SCREENING DATE:	2021-09-10 9:53:34		
%:	0.0000 - 3.5000	GS:	LT-UNK	RC:	UNK
				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:

NICKEL (METALLIC)

ID: 7440-02-0

HAZARD SCREENING METHOD:	Pharos Chemical and Materials Library	HAZARD SCREENING DATE:	2021-09-10 9:53:18		
%:	0.0000 - 1.0000	GS:	LT-1	RC:	UNK
				NANO:	No
				SUBSTANCE ROLE:	Alloy element

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	CA EPA - Prop 65	Carcinogen
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
SKI	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction [Skin sensitization - Category 1]
CAN	EU - GHS (H-Statements)	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]

SUBSTANCE NOTES: This value includes Co, 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 Co, refining operations prioritize its removal to the highest extent practical. This is a residual element in the alloy.

IRON

ID: 7439-89-6

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2021-09-10 9:53:26		
#: 0.0000 - 0.4000	GS: LT-P1	RC: UNK	NANO: No	SUBSTANCE ROLE: Alloy element
HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS		
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor		

SUBSTANCE NOTES: This is a residual element in the alloy.

ANTIMONY

ID: 7440-36-0

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2021-09-10 9:54:09		
#: 0.0000 - 0.2500	GS: LT-1	RC: UNK	NANO: No	SUBSTANCE ROLE: Alloy element

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
AQU	EU - GHS (H-Statements)	H411 - Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

SULFUR, ELEMENTAL

ID: 7704-34-9

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:15**
 %: **0.0000 - 0.0800** GS: **LT-UNK** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
SKI	EU - GHS (H-Statements)	H315 - Causes skin irritation [Skin corrosion/irritation - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

PHOSPHORUS

ID: 7723-14-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:54:20**
 %: **0.0000 - 0.0200** 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)	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

UNS C87850 COPPER ALLOY

%: **96.7200 - 97.9600**

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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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. Cu + Sum of Named Elements 99.5% min.

TIN, ORGANIC

ID: 7440-31-5

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:38:11**
 %: **0.0000 - 0.3000** GS: **LT-UNK** RC: **UNK** 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 is a residual element in the alloy.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:20**

#: **0.0000 - 78.0000** 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: 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

ZINC

ID: 7440-66-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:54:23**

#: **0.0000 - 23.2500** GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
AQU	EU - GHS (H-Statements)	H400 - Very toxic to aquatic life [Hazardous to the aquatic environment (acute) - Category 1]
AQU	EU - GHS (H-Statements)	H410 - Very toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 1]
PHY	EU - GHS (H-Statements)	H250 - Catches fire spontaneously if exposed to air [Pyrophoric liquids; Pyrophoric solids - Category 1]
PHY	EU - GHS (H-Statements)	H260 - In contact with water releases flammable gases which may ignite spontaneously [Substances and mixtures which, in contact with water, emit flammable gases - Category 1]

SUBSTANCE NOTES: Zn is the remainder after all the other alloying elements are included.

SILICON

ID: 7440-21-3

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:24**

#: **0.0000 - 3.4000** GS: **LT-UNK** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

NICKEL (METALLIC)

ID: 7440-02-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:28**%: **0.0000 - 0.2000** GS: **LT-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	MAK	Carcinogen Group 1 - Substances that cause cancer in man
CAN	IARC	Group 1 - Agent is Carcinogenic to humans
CAN	CA EPA - Prop 65	Carcinogen
CAN	US NIH - Report on Carcinogens	Known to be a human Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
RES	AOEC - Asthmagens	Asthmagen (Rs) - sensitizer-induced
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
RES	MAK	Sensitizing Substance Sah - Danger of airway & skin sensitization
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters
SKI	EU - GHS (H-Statements)	H317 - May cause an allergic skin reaction [Skin sensitization - Category 1]
CAN	EU - GHS (H-Statements)	H351 - Suspected of causing cancer [Carcinogenicity - Category 2]
MAM	EU - GHS (H-Statements)	H372 - Causes damage to organs through prolonged or repeated exposure [Specific target organ toxicity - repeated exposure - Category 1]

SUBSTANCE NOTES: This value includes Co, 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 Co, refining operations prioritize its removal to the highest extent practical. This is a residual element in the alloy.

PHOSPHORUS

ID: 7723-14-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:31**%: **0.0000 - 0.2000** 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)	H228 - Flammable solid [Flammable solids - Category 1 or 2]

SUBSTANCE NOTES:

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:34**%: **0.0000 - 0.1000** GS: **LT-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
AQU	EU - GHS (H-Statements)	H411 - Toxic to aquatic life with long lasting effects [Hazardous to the aquatic environment (chronic) - Category 2]

SUBSTANCE NOTES: This is a residual element in the alloy.

IRON

ID: 7439-89-6

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:38**%: **0.0000 - 0.1000** GS: **LT-P1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor

SUBSTANCE NOTES: This is a residual element in the alloy.

LEAD

ID: 7439-92-1

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-09-10 9:55:45**%: **0.0000 - 0.1000** GS: **BM-1** RC: **UNK** NANO: **No** SUBSTANCE ROLE: **Alloy element**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor
PBT	OSPAR - Priority PBTs & EDs & equivalent concern	PBT - Chemical for Priority Action
REP	EU - SVHC Authorisation List	Toxic to reproduction - Candidate list
PBT	OR DEQ - Priority Persistent Pollutants	Priority Persistent Pollutant - Tier 1
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
CAN	CA EPA - Prop 65	Carcinogen
CAN	IARC	Group 2b - Possibly carcinogenic to humans
CAN	MAK	Carcinogen Group 2 - Considered to be carcinogenic for man
CAN	US NIH - Report on Carcinogens	Reasonably Anticipated to be Human Carcinogen
DEV	G&L - Neurotoxic Chemicals	Developmental Neurotoxicant
CAN	US EPA - IRIS Carcinogens	(1986) Group B2 - Probable human Carcinogen
CAN	IARC	Group 2a - Agent is probably Carcinogenic to humans

DEV	CA EPA - Prop 65	Developmental toxicity
PBT	US EPA - Priority PBTs (NWMP)	Priority PBT
PBT	WA DoE - PBT	PBT
PBT	US EPA - Toxics Release Inventory PBTs	PBT
DEV	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Developmental Toxicity
REP	US NIH - Reproductive & Developmental Monographs	Clear Evidence of Adverse Effects - Reproductive Toxicity
REP	EU - REACH Annex XVII CMRs	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans
REP	EU - Annex VI CMRs	Reproductive Toxicity - Category 1A
GEN	MAK	Germ Cell Mutagen 3a
REP	CA EPA - Prop 65	Reproductive Toxicity - Female
REP	CA EPA - Prop 65	Reproductive Toxicity - Male
REP	GHS - New Zealand	6.8A - Known or presumed human reproductive or developmental toxicants
REP	EU - GHS (H-Statements)	H360FD - May damage fertility. May damage the unborn child [Reproductive toxicity - Category 1A or 1B]
CAN	GHS - Korea	H350 - May cause cancer [Carcinogenicity - Category 1]
DEV	EU - GHS (H-Statements)	H362 - May cause harm to breast-fed children [Reproductive toxicity, effects on or via lactation]
REP	GHS - Korea	H360 - May damage fertility or the unborn child [Reproductive toxicity - Category 1]
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1A]
DEV	GHS - Australia	H360Df - May damage the unborn child. Suspected of damaging fertility [Reproductive toxicity - Category 1A or 1B]

SUBSTANCE NOTES: This is a residual element in the alloy.

MANGANESE

ID: 7439-96-5

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library		HAZARD SCREENING DATE: 2021-09-10 9:55:48	
#: 0.0000 - 0.1000	GS: LT-P1	RC: UNK	NANO: No SUBSTANCE ROLE: Alloy element
HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS	
END	TEDX - Potential Endocrine Disruptors	Potential Endocrine Disruptor	
MUL	German FEA - Substances Hazardous to Waters	Class 2 - Hazard to Waters	
REP	GHS - Japan	H360 - May damage fertility or the unborn child [Toxic to reproduction - Category 1B]	

SUBSTANCE NOTES: This is a residual element in the alloy.

UNS C89833 COPPER ALLOY

%: 96.7200 - 97.9600

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, duplicated in the Toxnot Shared Materials library. Metal alloys have different intrinsic characteristics than their alloying elements, including health and environmental hazards. As such, individual substance-level hazards may not apply when alloyed. 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. Cu + Sum of Named Elements 99.3% min.

COPPER

ID: 7440-50-8

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2021-09-10 9:55:51

%: 0.0000 - 91.0000 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: 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: 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: Scrap copper wires, cables, tubes, busbar, and strip, plate, and sheet products (e.g., roofing, cladding, gutters, flashing).

TIN, ORGANIC

ID: 7440-31-5

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2021-09-10 9:45:04

%: 0.0000 - 6.0000 GS: LT-UNK RC: UNK 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:

ELASTOMER SEAL

%: 2.0400 - 3.2800

PRODUCT THRESHOLD: Other

RESIDUALS AND IMPURITIES CONSIDERED: No

MATERIAL TYPE: Polymeric Material

RESIDUALS AND IMPURITIES NOTES: In order to receive an accurate list of residuals and impurities found in the elastomer seal, the exact supplier of the fitting should be contacted.

OTHER MATERIAL NOTES: This material is a generic representation of a typical elastomer seal that could be used. However, the specific formulation and the presence of various residuals and impurities will vary by supplier so this formulation may not be representative of the product chosen. For an exact disclosure, please reach out to the supplier directly.

BICYCLO(2.2.1)HEPT-2-ENE, 5-ETHYLIDENE-, POLYMER WITH ETHENE AND 1-PROPENE

ID: 25038-36-2

HAZARD SCREENING METHOD: Pharos Chemical and Materials Library HAZARD SCREENING DATE: 2021-10-14 7:38:01

%: 50.0000 - 100.0000 GS: LT-UNK RC: UNK NANO: No SUBSTANCE ROLE: Polymer species

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: This is a typical example of the type of elastomer seal that is used in this application, but users should contact the manufacturer of the specific part utilized for full formulation details of the elastomer seal.

CARBON BLACK

ID: 1333-86-4

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:46:42**

#: 20.0000 - 50.0000 GS: **BM-1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Pigment**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	US CDC - Occupational Carcinogens	Occupational Carcinogen
CAN	MAK	Carcinogen Group 3B - Evidence of carcinogenic effects but not sufficient for classification
CAN	CA EPA - Prop 65	Carcinogen - specific to chemical form or exposure route
CAN	IARC	Group 2B - Possibly carcinogenic to humans - inhaled from occupational sources

SUBSTANCE NOTES: This is a typical additive found in elastomer seals used in this application, but users should contact the manufacturer of the specific part utilized for full formulation details of the elastomer seal.

RESIDUAL OILS, PETROLEUM, HYDROTREATED

ID: 64742-57-0

HAZARD SCREENING METHOD: **Pharos Chemical and Materials Library** HAZARD SCREENING DATE: **2021-10-14 7:47:38**

#: 0.0000 - 5.0000 GS: **LT-1** RC: **None** NANO: **No** SUBSTANCE ROLE: **Lubricant**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
CAN	EU - REACH Annex XVII CMRs	Carcinogen Category 2 - Substances which should be regarded as if they are Carcinogenic to man
CAN	EU - Annex VI CMRs	Carcinogen Category 1B - Presumed Carcinogen based on animal evidence
PBT	EC - CEPA DSL	Persistent, Bioaccumulative and inherently Toxic (PBiTH) to humans
MUL	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant
CAN	EU - GHS (H-Statements)	H350 - May cause cancer [Carcinogenicity - Category 1A or 1B]
CAN	GHS - Australia	H350 - May cause cancer [Carcinogenicity - Category 1A or 1B]

SUBSTANCE NOTES: This is a typical additive found in elastomer seals used in this application, but users should contact the manufacturer of the specific part utilized for full formulation details of the elastomer seal.

CALCIUM CARBONATE

ID: 471-34-1

%: **0.0000 - 5.0000**GS: **BM-3**RC: **None**NANO: **No**SUBSTANCE ROLE: **Filler**

HAZARD TYPE	AGENCY AND LIST TITLES	WARNINGS
None found		No warnings found on HPD Priority Hazard Lists

SUBSTANCE NOTES: This is a typical additive found in elastomer seals used in this application, but users should contact the manufacturer of the specific part utilized for full formulation details of the elastomer seal.

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: 2021-12-13	EXPIRY DATE:	CERTIFIER OR LAB: N/A
APPLICABLE FACILITIES: N/A			
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

Substance ranges within the HPD are due to the variability in the UNS formulations. Material ranges are due to the variations in fittings sizes and configurations. This HPD is meant to provide likely formulations of press-connect pressure fittings based on the ASME B16.51-2018 standard and lists the copper alloys referenced in that standard.

The standard also specifies that other wrought copper alloys shall be permitted, provided their chemical composition contains a minimum of 84% copper and a maximum of 16% zinc (potable water applications additionally shall contain <0.25% lead), and provided the fittings produced from the copper alloy meet all the mechanical and corrosion-resistant properties for the end purposes of the fittings. It further specifies that cast copper alloys shall be permitted, provided the fittings produced meet mechanical and corrosion-resistant properties needed for potable water applications. 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/cdamembers.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 (CSI) MasterFormat ® designations include the following. These are provided as a general guideline; other 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 06 20 Schedules for HVAC Piping and Pumps, 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.

MANUFACTURER INFORMATION

MANUFACTURER: Copper Development Association
ADDRESS: 7919 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	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-1 List Translator 1 (Likely Benchmark-1)
BM-3 Benchmark 3 (use but still opportunity for improvement)	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.)
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)	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.