



Meets the Requirements of OSHA Standard 29 CFR 1910.1200 Hazard Communication and EPA Supplier Notification Requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act.

SAFETY DATA SHEET (SDS)

SDS ISCO-004 Rev 1

RENEWAL DATE 01/22

**BISMUTH RED BRASS ALLOY
BISMUTH BRONZE ALLOY**

**Any of the above alloys in INGOT or
INDUCTOMELT® pellet form**

SECTION 1—PRODUCT IDENTIFICATION & COMPANY INFORMATION

PRODUCT NAME

**BISMUTH RED BRASS ALLOY INGOTS or INDUCTOMELT® pellets
BISMUTH BRONZE ALLOY INGOTS or INDUCTOMELT® pellets**

OTHER DESIGNATIONS:

UNS ALLOY Copper Alloy Designations:

C89833

C89836

MANUFACTURER'S NAME

I. Schumann Co LLC

STREET ADDRESS

22500 Alexander Road

EMERGENCY TELEPHONE NO.

440-439-2300

MAILING ADDRESS

22500 Alexander Road

TELEPHONE NO.

440-439-2300

CITY, STATE, ZIP CODE, COUNTRY

Bedford, Ohio 44146 USA

FAX NO.

440-439-0317

E-MAIL ADDRESS/WEBSITE

www.ischumann.com

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Solid metal shapes; no restrictions

SECTION 2—HAZARD IDENTIFICATION

CLASSIFICATION

The INGOTS or INDUCTOMELT® pellets are metallic articles that do not present hazards in their original form.

HAZARD STATEMENT:



WARNING

Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by melting, machining, grinding, welding or thermal cutting of the product may produce airborne contaminants. Consult Sections 3 & 8 for further information.

PRECAUTIONARY STATEMENT:

Do not breathe fumes

Wear protective gloves

Do not eat, drink, or smoke when using this product

SECTION 3—COMPOSITION/INFORMATION ON INGREDIENTS		
CHEMICAL NAME/COMMON NAME/SYNONYM	Wt %	CAS NUMBER
Antimony (Sb) Metal	0.0-0.8	7440-36-0
Cobalt (Co) Metal	0.0-0.2	7440-48-4
Copper (Cu) Metal	85.0-91.0	7440-50-8
Bismuth (Bi) Metal	1.0-3.0	7440-69-9
Iron (Fe) Metal	0.0-0.8	1309-37-1
Lead (Pb) Metal	0.0-0.25	7439-92-1
Nickel (Ni) Metal	0.0-1.0	7440-02-0
Tin (Sn) Metal	2.0-6.5	7440-31-5
Zinc (Zn) Metal	2.0-9.0	7440-66-6
SECTION 4—FIRST AID MEASURES		
EYE CONTACT:	Not applicable to solid articles	
SKIN CONTACT:	No special requirements for solid articles	
INGESTION:	Not applicable	
INHALATION:	Not applicable	
SECTION 5—FIREFIGHTING MEASURES		
FLAMMABLE PROPERTIES:	The product in its present form is noncombustible.	
EXTINGUISHING MEDIA:	Use fire extinguishing materials suitable for the surrounding environment.	
UNUSUAL FIRE AND EXPLOSION HAZARDS:	If the alloys in their molten form come in contact with water, a severe steam reaction will cause the molten metal to be sprayed about the area.	
PROTECTION OF FIREFIGHTERS:	Not applicable	
SECTION 6—ACCIDENTAL RELEASE MEASURES		
Not applicable		
SECTION 7—HANDLING & STORAGE		
RECOMMENDED STORAGE		
No special requirements		
PROCEDURES FOR HANDLING		
Proper hand and foot protection is recommended.		
SECTION 8—EXPOSURE CONTROLS/PERSONAL PROTECTION		
ENGINEERING CONTROLS		
None Required prior to melting. There are no health hazards from the product in solid form.		
SUBSTANCE	ACGIH TLV mg/m³	OSHA PEL mg/m³
Antimony (Sb) Metal	0.5	0.5
Bismuth (Bi) Metal	N/E	N/E
Cobalt (Co) Metal	0.02	0.1
Copper (Cu) Metal	1	1
Iron (Fe) Metal	N/E	N/E
Lead (Pb) Metal	0.5	30µg/m ³ AL 50µg/m ³ PEL (See 29CFR1910.1025)
Nickel (Ni) Metal	1.5 (I)	1
Tin (Sn) Metal	2	2
Zinc (Zn) Metal	N/E	N/E

SUPPLEMENTAL INFORMATION

Fumes from hot processes may contain other compounds with different exposure limits than those listed herein. Dust or fumes generated by machining, grinding, welding or thermal cutting of the INGOT may produce airborne contaminants. Exposure limits for the most common contaminants are offered as reference. Please consult a competent person for guidance on exposure assessment and controls.

SUBSTANCE	ACGIH TLV mg/m ³	OSHA PEL mg/m ³
Antimony (Sb) Compounds	0.5	0.5
Cobalt (Co) Metal Dust and Fume Metal and Inorganic Compounds	N/E 0.02	0.1 N/E
Copper Compounds Fume (Cu) Dusts and Mists (Cu)	0.2 1	0.1 1
Iron Compounds Iron Oxide (Fe ₂ O ₃) Fume Iron Oxide (Fe ₂ O ₃) Respirable	N/E 5 (R)	10 N/E
Lead Compounds Inorganic Compounds (Pb)	0.05	30µg/m ³ AL 50µg/m ³ PEL (See 29CFR1910.1025)
Nickel Compounds (Ni) Insoluble, Inorganic Compounds Soluble, Inorganic Compounds Nickel Oxide	0.2 (I) 0.1 (I) 0.2 (I)	1 1 1
Tin Oxide (Sn)	2	N/E
Zinc Compounds (Zn) Zinc Oxide Total Dust Zinc Oxide Respirable Dust Zinc Oxide Fume	N/E 2 / 10 STEL N/E	15 5 5

TERMS

All exposure limits referenced herein are 8 hour time weighted averages (TWA) unless otherwise noted.

N/E = None Established

C = Ceiling

I = Inhalable fraction

R = Respirable fraction

STEL = Short Term Exposure Limit

TLV = Threshold Limit Value/American Conference of Governmental Industrial Hygienists (ACGIH)

PEL = Permissible Exposure Limit / OSHA

AL = Action Level / OSHA

mg/m³ = milligrams per cubic meter

µg/m³ = micrograms per cubic meter

PERSONAL PROTECTION
 Proper hand and foot protection is recommended.

SECTION 9—PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE /PHYSICAL STATE Solid, Orange-red to brown in color	
ODOR/ODOR THRESHOLD None	VAPOR DENSITY Not applicable
MELTING POINT/FREEZING POINT Approximately 1085°C (1984°F) for copper	SPECIFIC GRAVITY (relative density) 8.96 g/cm ³ for copper (water = 1)
BOILING POINT 2562°C (4644°F) for copper	VAPOR PRESSURE Not applicable
FLASH POINT Not applicable for solid product	EVAPORATION RATE Not applicable
FLAMMABILITY Product not flammable in solid form	SOLUBILITY IN WATER Insoluble
UPPER AND LOWER FLAMMABILITY LIMITS Not applicable for I product in solid form	pH Not applicable
AUTO IGNITION TEMPERATURE Not applicable	VISCOSITY Not applicable
DECOMPOSITION TEMPERATURE Not applicable	PARTITION COEFFICIENT Not applicable

SECTION 10—STABILITY & REACTIVITY

CHEMICAL STABILITY: Product is stable in solid form	
CONDITIONS TO AVOID: None	
REACTIVITY: Not reactive	INCOMPATIBLE MATERIALS: Not applicable to product in solid form.
HAZARDOUS DECOMPOSITION PRODUCTS None	HAZARDOUS POLYMERIZATION Not applicable

SECTION 11—TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS	
EYE CONTACT: None	
SKIN: None	
INGESTION: None	
INHALATION: None	

Carcinogen Classification of Ingredients				
INGREDIENT	OSHA	NTP	IARC	TARGET ORGAN(S)
Cobalt and Compounds	NL	NL	2B	Lung
Lead and Inorganic Compounds	NL	R	2A	Lung, Stomach, Liver, Kidney
Nickel Metal	NL	K	2B	Lung, Nasal passages

TERMS

OSHA—Occupational Safety & Health Administration

Y = Listed as a Human Carcinogen

NTP—National Toxicology Program

K = Known to be a Human Carcinogen

R = Reasonably Anticipated to be a Human Carcinogen (RAHC)

IARC—International Agency for Research on Cancer

1 = Carcinogenic to Humans

2A = Probably Carcinogenic to Humans

2B = Possibly Carcinogenic to Humans

3 = Unclassifiable as to Carcinogenicity in Humans

4 = Probably not Carcinogenic to Humans

Other

NL = Not Listed

SECTION 12— ECOLOGICAL INFORMATION

ECOTOXICITY Not applicable	PERSISTENCE AND DEGRADABILITY Not applicable
--------------------------------------	--

BIOACCUMULATION POTENTIAL Not applicable	MOBILITY IN SOIL Not applicable
--	---

OTHER ADVERSE EFFECTS Not applicable
--

SECTION 13—DISPOSAL CONSIDERATIONS

Recover or recycle if possible. Dispose of according to federal, state and local regulations. Dust collected from machining, welding, etc. may be classified as a hazardous waste. Consult federal, state and local regulations.

SECTION 14—TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION (DOT)-HMR (Hazardous Materials Registration) Not Regulated	CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) Not regulated
--	--

UN SHIPPING NAME Not regulated	UN NUMBER Not regulated
--	-----------------------------------

TRANSPORT HAZARD CLASS Not regulated	PACKING GROUP Not regulated
--	---------------------------------------

ENVIRONMENTAL HAZARDS None	LABEL(S) REQUIRED? No
--------------------------------------	---------------------------------

TRANSPORT IN BULK Not applicable	SPECIAL SHIPPING INFORMATION Not applicable
--	---

SECTION 15—REGULATORY INFORMATION**US-OSHA (Hazard Communication Standard)**

References: 29 CFR 1910.1200 Hazard Communication Standard

The finished product is an article as defined in 29CFR 1910.1200 (c)

29 CFR 1910.1000 Air Contaminants 29CFR1910.1025 Lead

US-EPA (Toxic Substances Control Act-TSCA)

All components of these products are on the TSCA inventory list or are excluded from listing.

US-EPA (SARA Title III)

Releases to the environment of Copper, Lead, Nickel, and Zinc (fume or dust) may be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

This product contains the following EPCRA Section 313 chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372):

CHEMICAL NAME	De minimis, %	Wt %	CAS NUMBER
Copper (Cu) Metal	1.0	75.0-94.0	7440-50-8
Lead (Pb) Metal	0.1	0.0-0.25	7439-92-1
Nickel (Ni) Metal	0.1	0.5-2.0	7440-02-0
Zinc (Zn) Metal	1.0	0.5-17.0	7440-66-6

CANADA-WHMIS (Workplace Hazardous Materials Information System)

This SDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the SDS contains the information required by the CPR

CANADA DSL (Domestic Substances List) Inventory Status

All components of these products are on the DSL Inventory.

CEPA (Canadian Environmental Protection Act)

Lead is on the Toxic Substances List.

EINECS No. (European Inventory of Existing Commercial Chemical Substances)

All components of these products are on the EINECS list.

RoHS (Restriction of Certain Hazardous Substances) Compliance

Products comply with RoHS

CALIFORNIA PROPOSITION 65 Compliance

WARNING: This product contains or produces chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25248.5 et seq.)

US STATE REGULATORY INFORMATION

Some of the components listed in Section 3 may be covered under specific state regulations.

SECTION 16—OTHER INFORMATION

SDS ISSUED BY

EHS Department
of I. Schumann Co LLC, Bedford Ohio

DATE

06/15

NOTE

This data and label information is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if they are appropriate.