



## SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** COPPER METAL

**SDS Number:** SDS-4227

**Revised Date:** 29 DECEMBER 2017

**Product :** INDUSTRIAL USE - COPPER ALLOY (Cu)

#### MANUFACTURER:

##### In America:

The Indium Corporation of America  
34 Robinson Road, Clinton NY 13323  
Information: (315) 853-4900  
nswarts@indium.com

##### EMERGENCY PHONE:

**CHEMTREC 24 hrs.**  
**USA: 1 (800) 424-9300**  
**Outside USA: +1 (703) 527-3887**

##### In Europe:

Indium Corporation of Europe  
7 Newmarket Ct.  
Kingston, Milton Keynes, UK, MK 10 OAG  
Information: +44 [0] 1908 580400

##### In China:

Indium Corporation (Suzhou) Co., Ltd.  
No. 428 Xinglong Street  
Suzhou Industrial Park  
Suchun Industrial Square  
Unit No. 14C  
Jiangsu Province, China 215126  
Information: 86-512-6283-4900

##### In Asia:

The Indium Corporation of America  
Asia-Pacific Operations-Singapore  
29 Kian Teck Avenue  
Singapore 628908  
Information: +65 6268-8678

## 2. HAZARDS IDENTIFICATION

GHS:

### Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P270	Do not eat, drink or smoke when using this product
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P362 +P364	Take off contaminated clothing and wash before reuse
P301 + P314	IF SWALLOWED: Get medical advice/attention if you feel unwell
P302 +P352	IF ON SKIN: Wash with plenty of soap and water
P304 + 341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + 351	IF IN EYES: Rinse continuously with water for several minutes (15 mins)

### PRIMARY ROUTES OF ENTRY:

### CARCINOGEN LISTED IN:

▲Eye ▲Inhalation ▲Skin ▲Ingestion

NTP IARC OSHA ▲Not Listed

### POTENTIAL HEALTH EFFECTS:

- Eye Contact:** Contact with powdered metal alloy or fume from molten metal may cause irritation. Severe eye damage may result from hot molten metal being splashed into the eyes. Wear safety glasses and face shield when working with molten metal. Dusts are irritating to eyes.
- Ingestion:** May be harmful.
- Inhalation:** Inhalation of fume or dust may cause local irritation to the respiratory system. May be harmful.
- Skin Contact:** Normal handling should not cause any adverse health effects. May cause skin irritation. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal.
- Chronic:** COPPER: Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough weakness, lassitude); metallic or sweet taste; discoloration of skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure
- WARNING:** This product contains a chemical(s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace levels of lead not intentionally added)
- NOTE:** The Indium Corporation does not recommend, manufacturer, market or endorse any of its products for human consumption.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry/ #EINECS#	PEL mg/m <sup>3</sup>	TLV-TWA mg/m <sup>3</sup>	TLV-STEL mg/m <sup>3</sup>
COPPER (Cu)	100	7440-50-8/231-159-6			
		(US)	0.1 (fume)	0.2 (fume)	-
			1(dust)		

(EU)	-	0.2 (fume)	-
(Singapore)	0.2(fume)	1(dust)	-
(Mexico)	-	0.2	2
(Canada)	N.E.	0.2 (fume)	0.6 (fume)

N.E. = Not established      EU = European Union Occupational Exposure Limits

#### 4. FIRST AID MEASURES

**Eye Contact:** Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention if irritation persists.

**Ingestion:** Do not induce vomiting. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.

**Skin Contact:** Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

#### 5. FIRE FIGHTING MEASURES

**Flash Point:** Not combustible, except as a powder.      **Method:** Not established.

**Auto-ignition Temperature:** Not applicable.

**Flammable Limits:** Limits not established. Massive metal is not flammable; however dust or powder may be flammable.

**Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. Use water-spray, alcohol resistant foam, dry chemical or carbon dioxide.

**Special Fire Fighting Procedures:** Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.

#### 6. ACCIDENTAL RELEASE MEASURES

**Spill or Leak Procedures:** Contain spill. If molten, cool to allow metal to solidify. If a solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment including respiratory protection. DO NOT SWEEP. Use a vacuum, place in barrels and return to process if applicable. Use proper ventilation. Do not allow to enter drains, sewers or waterways. Otherwise, dispose of following all Federal, State and Local regulations. Metal may have reclaim value.

#### 7. HANDLING AND STORAGE

**Handling Precautions:** Only dry metals should be added to molten bath. If working with molten metals, or exposed to fume or dust, use appropriate personal protective equipment. Do not eat, drink or smoke.

**Storage Precautions:** Store product in a cool, dry area away from incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering Controls:** Local exhaust ventilation is recommended to control any air contaminants. Control concentration of all components so that their exposure levels are not exceeded. Use ventilation.
- Personal protection:**
- Eyes:** Chemical safety glasses/goggles and face shield with molten metal splash hazard.
- Respirator:** An approved or compliant marked air-purifying respirator with a fume/dust chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated. Additional respiratory protection may be required based on the work performed and the area in which the work is performed.
- Skin:** Gloves-leather or impervious (vinyl) type. Heat resistant gloves if handling hot metal. Safety type boots. Personal protective equipment is recommended when working with molten metal to avoid burns. PVC or other gloves. No gloves required when handling the plain metal form.
- Other:** Lab coat, safety shower and eye-wash fountain in work area. Avoid the use of contact lenses in high Fume/splash areas.
- Work/Hygienic Practices:** Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Reddish/brown metallic solid	<b>Boiling Point:</b>	4,703 F(2595C)
<b>Odor:</b>	Odorless	<b>Melting Point:</b>	1981.4 F (1083C)
<b>Specific Gravity:</b>	8.94	<b>Ph:</b>	Not applicable
<b>Vapor Pressure:</b>	0.13 @1628C	<b>Solubility in Water:</b>	Insoluble
<b>Vapor Density:</b>	(air=1) Not applicable.	<b>Molecular Weight:</b>	63.54

## 10. STABILITY AND REACTIVITY

<b>General:</b>	Stable. Air sensitive
<b>Conditions to Avoid:</b>	Storage with acetylene, chlorates, chlorine, excessive heat
<b>Hazardous Decomposition /</b>	Toxic oxide fumes may form at elevated temperatures
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Carcinogenicity: National Toxicity Program (NTP):</b>	No
<b>Occupational Safety &amp; Health Administration (OSHA):</b>	No
<b>U.N. International Agency for Research on Cancer (IARC):</b>	No

RTECS GL 5325000, for additional information

## 12. ECOLOGICAL INFORMATION

**Biodegradability:** Data not established.

**Aquatic Toxicity:** Data not established.

Freshwater algae: 0.0426-0.0535 mg/l EC50 72h

Freshwater fish: 0.3 mg/l LC50 96h/0.112 mg/l LC50 96h/ 0.052 mg/l LC50 96h/0.0068 – 0.0156 mg/l LC50 96h

Bioaccumulation factor (108)

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Avoid release to the environment.

## 13. DISPOSAL CONSIDERATION

**Waste Disposal Method:** Scrap metal alloy usually has value. Contact a commercial reclaimer for recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Environmental Agency guidelines.

## 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Not regulated under US DOT (United States Department of Transportation).

Not regulated under IATA.

Not regulated under IMDG.

Non-hazardous under shipping requirements.

UN - none

## 15. REGULATORY INFORMATION

The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

WHMIS: not classified.

This product has been classified in accordance with the guidelines set by the Dept. of Industrial Health of the Republic of Singapore.

This product has been classified in accordance with the Mexican guidelines, NOM-018-STPS-2015 and NOM-010-STPS-2014.

In China:

This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007. Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals  
GB 30000.2-29-2013, Rules for classification and labeling of chemicals. (GHS)  
GB/T 16483-2008, GB/T 17517-2013

This product has been classified in accordance with: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS).

California PROP 65 (Safe Drinking Water Standard): WARNING : This product contains a chemical (s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace levels of lead not intentionally added)

SARA 313 Listing – 40 CFR 372.65: Copper

All ingredients are listed on the EPA TSCA Inventory.

All ingredients are listed on the Canadian Domestic Substance List.

## 16. OTHER INFORMATION

<b>HMIS Hazard Rating:</b>	<b>Health:</b>	1
	<b>Fire:</b>	1
	<b>Reactivity:</b>	0

**Revised Date:** 29 DECEMBER 2017

**Prepared by:** Nancy Swarts, Indium Corporation of America

**Approved by:** Nancy Swarts, Indium Corporation of America

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