



SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 **Product Identifier:** COPPER METAL

SDS Number: SDS- 4227

Revised Date: 29 DECEMBER 2017

1.2 **Relevant identified uses of the substance or mixture and uses advised against**

Product Use: Industrial Use – copper metal alloy

1.3 **Details of the supplier of the safety data sheet**

MANUFACTURER/SUPPLIER/IMPORTER:

In America:

The Indium Corporation of America
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Safety & SDS Information: nswarts@indium.com
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Asia-Pacific Operations-Singapore
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1.4 Emergency Telephone Number**FOR CHEMICAL EMERGENCY ONLY PHONE *:****CHEMTREC 24 hrs.****USA: 1 (800) 424-9300****Outside USA: +1 (703) 527-3887***** Used only for spill/leak/fire/exposure/accident****ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation****SECTION 2. HAZARDS IDENTIFICATION****PRIMARY ROUTES OF ENTRY:**

Eye
Inhalation
Skin
Ingestion
NTP
IARC
OSHA
Not Listed

Carcinogen listed in**2.1 Classification of substance or mixture: (mixture)****2.2 Label Elements**

Labeling according to Regulation (EC) No. 1272/2008

GHS

Signal Word: None

Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapours/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
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

2.3 OTHER HAZARDS:**POTENTIAL HEALTH EFFECTS:**

Eye Contact: Contact with powdered metal alloy or fume from molten metal may cause irritation. Severe eye irritation/damage may result from hot molten metal being splashed into the eyes. Wear safety glasses and face shield when working with molten metal. Dust may cause irritation.

Ingestion: May be harmful by ingestion.

Inhalation: Inhalation of fume or dust may cause local irritation to the respiratory system. Inhalation of fume or dust may be harmful.

Skin Contact: Normal handling of metal form 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

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	% wt	CAS Registry #/ EINECS#
COPPER	100	7440-50-8/231-159-6

N.E. = Not established

<http://www.indium.com>

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures:

- Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists. Burns require IMMEDIATE medical care.
- Ingestion:** If patient is conscious, ONLY induce vomiting as directed by trained personnel. 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. Burns require medical attention.

4.2 Most important symptoms and effect, both acute and delayed:

Skin contact may cause irritation.
 Eye exposure may cause irritation.
 Burns from molten metal require immediate attention.

4.3 Indication of any immediate medical attention and special treatment needed:

No specific special treatment information is available. Review data provided in this document to understand the hazards when working with the product. No other information is available at this time.
 Seek medical attention if eye irritation continues after flushing .
 If respiratory discomfort is evident seek immediate medical advice.
 Molten metal splash requires immediate medical attention. Seek medical care for burns to skin/eyes.

SECTION 5. FIRE FIGHTING MEASURES

- 5.1 Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. Water, CO2, foam media.

- 5.2 Special hazards arising from the substance or mixture:**
 May produce toxic indium fumes if burning .

- 5.3 Advice for Firefighters** Fire-fighters must wear approved self-contained breathing apparatus and full protective clothing.

Material product is not flammable. However, dust in the air could generate a hazard. No other information is available.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Keep away from the spill. Remove sources of ignition. Keep exhaust ventilation system running. In the event of a fire evacuate area.

For emergency responders:

Wear safety glasses, gloves when cleaning up any spill. Other equipment may be necessary based on the immediate area and other chemicals unrelated to the product that may be in use. Adequate ventilation should be available. Keep unnecessary personnel away from area during clean up. If on floor wear foot protection to avoid any direct contamination to shoes and boots. Avoid conditions that create fumes or fine dust. **DO NOT SWEEP DRY SOLIDS.** Do not raise dust levels. Use an approved respirator with particulate cartridge. Dust type masks are not recommended. Solid metal does not pose a danger and can be picked up and placed into container for re-use or recycling.

Environmental Precautions: Material has reclaim value. Recycle/recover/reuse value. If recycling cannot be done then dispose of material following all applicable governmental regulations. Material is non - hazardous.

Methods and material for containment and cleaning up:

Spill or leak procedures: Clean up by vacuum and not sweeping to avoid dust generation. Place into pail or drum and tightly cap. Recycle. Solid pieces can be picked up and placed into reuse container.

6.2 Reference to other sections: See Section 8 for exposure levels.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment (PPE) when working or handling material. Always thoroughly wash your hands after handling this product. **DO NOT** touch or rub eyes until hands are washed. Do not eat, drink or smoke when handling this product. Utilize exhaust ventilation during handling of this product especially during heating or any application where airborne contamination can occur.

7.2 Conditions for Safe Storage, including any incompatibilities:

Storage Precautions: Store product in tightly capped original containers in a cool, dry area. Refer to product label and product data sheet for specific storage temperature requirements. Rotate stock to ensure use before expiration date.

7.3 Specific End Use(s): Various

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

			<u>TWA</u>	<u>STEL</u>
		<u>CAS#/EINECS#</u>	mg/m ³	mg/m ³
COPPER	*	7440-50-8 /231-159-6		
		(UK)	0.2 (fume)	0.6(fume)
		(France)	2	0.2(fume)
		(Belgium)	1	-

	0.2(fume)	
(Spain)	1	-
	0.2(fume)	
(Portugal)	1	0.2(fume)
(Netherlands)	0.1	-
(Finland)	1	-
	0.1	
(Denmark)	1	-
	0.1	
(Austria)	1	4
	0.1(fume)	0.4
(Switzerland)	0.1	0.2
(Norway)	1	0.1
(Ireland)	1	2
(Poland)	0.2	-

TWA = time weighted average

STEL = short term exposure level

N.E. = Not established

8.2 Exposure Controls:

Engineering Controls: Local and/or Mechanical exhaust ventilation or point source exhaust is required to control any airborne contaminants and to reduce potential exposures to workers. Avoid inhalation of particulate/dust/spray. Use exhaust when there is any doubt in whether the operator/user is getting any exposure. Measurement of exposure may be required.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for splash/grinding/spray/dust hazard/molten metal splash.

Respiratory: An approved air-purifying respirator (half or full face) with a HEPA rated particulate filter or HEPA quality dust mask is required under certain circumstances where airborne concentrations are expected to be elevated. Avoid breathing dust. Keep exposures to as low as possible. Grinding and cutting applications require a full-face respirator for adequate protection. Dust mask is not recommended in high exposure applications or when measurements or concentration levels are unknown. When levels are unknown and dust is evident additional respiratory protection may be required especially in confined areas. Unknown exposure should be measured to determine the proper protection. Respiratory protection not required when handling the solid form and not grinding, cutting, burning is involved.

Skin: Compatible chemical resistant gloves when handling metal during treatment activities. No gloves required for handling the plain metal form..

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume/dust areas. Coverage of hair may be required in dusty 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. Do not wear work clothes into lunchroom areas.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties:**

Appearance:	Reddish/brown metallic solid		
Boiling Point/Range:	2595C (4703F)		
Odor:	Odorless	Melting Point/Freezing Point:	1083C (1981F)
Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	8.94 (H ₂ O=1).	pH:	Not applicable
Vapour Pressure:	0.13 mmHg	Solubility in Water:	Insoluble
Vapour Density:	(air=1) Not applicable.	Partition coefficient:	Not established
Relative Density:	Not established	Flammability:	Not applicable
Flash Point:	Not applicable	Method:	Not applicable
Auto-ignition Temperature:	Not applicable	Flammable Limits:	Limits not established
UEL/LEL Limits:	Not applicable	Decomposition Temp:	Not applicable
Viscosity:	Not established	Explosive properties:	Not applicable
Oxidizing Properties:	Not established	Molecular Weight:	63.54

9.2 Other Information: Above data for the whole mixture.

SECTION 10. STABILITY AND REACTIVITY

- 10.1 Reactivity:** Stable.
- 10.2 Chemical Stability:** Stable air sensitive
- 10.3 Possibility of Hazardous Reactions:** Not established
- 10.4 Conditions To Avoid:** Storage with acetylene, chlorates, chlorine, excessive heat
- 10.5 Incompatible Materials:** Avoid contact with strong acids, bases or oxidizing agents.
- 10.6 Hazardous Decomposition / Combustion:** Harmful toxic oxide fumes may form at elevated temperatures.
- 10.7 Hazardous Polymerization:** Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects:**

<u>Acute toxicity:</u>	Not established	<u>Mutagenicity:</u>	Not established
<u>Irritation:</u>	Not established	<u>Toxicity for Reproduction:</u>	Not Established
<u>Corrosivity:</u>	Not applicable	<u>Absence of specific data:</u>	None available (not tested)
<u>Sensitization:</u>	Not available		
<u>Repeated dose toxicity:</u>	Not established		
<u>Carcinogenicity:</u>	Not established		
<u>Likely Routes of Entry:</u>	eyes(irritation) /inhalation (irritation)		
<u>Interactive effects:</u>	None known		

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation by inhalation. May cause eye irritation.

11.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure:

No information is available at this time.

Mixture verses substance information: None known

Other Information:

Carcinogenicity: NTP: No (National Toxicity Program)
Listing OSHA: No (US Occupational Safety & Health Administration)
IARC: No (U.N. International Agency for Research on Cancer)

See NIOSH RTECS (Registry of Toxic Effects of Chemical Substances) Number: GL 5325000

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity:

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/0.068-0.0156 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.

12.2 Persistence and degradability: No information available

12.3 Bioaccumulative potential: 108

12.4 Mobility in soil: No information available

12.5 Results of PBT and vPvB assessments: No data is available

12.6 Other adverse effects: No information is available. Avoid release to environment.

Copper – Toxicity to daphnia and other aquatic invertebrates mortality NOEC – Daphnia 0.004 mg/l – 24h.

SECTION 13. DISPOSAL CONSIDERATION

13.1 Waste treatment method:

Scrap copper metal has reclaim/recycle value. Contact recycler. Otherwise, dispose of in accordance with environmental regulations. Containerize material and classify according to applicable regulations. No pre-treatment on site is recommended. Do not dispose of down any drain or waterway. Utilize the same personal protective equipment as the user when handling for disposal.

RoHS (Restriction of Hazardous Substances): Compliant with RoHS.

SECTION 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Non - hazardous.

Not regulated/non- hazardous under US DOT (United States Department of Transportation).

Not regulated/non - hazardous under international shipping requirements.

14.1 UN Number None

14.2 <u>UN proper shipping name:</u>	None
14.3 <u>Transport hazard class(s):</u>	None
14.4 <u>Packing group:</u>	None
14.5 <u>Environmental hazards:</u>	None
14.6 <u>Special precautions for user:</u>	None
14.7 <u>Transport in bulk:</u>	Not applicable

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

The information in this Material 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.).

All ingredients are listed on the USEPA TSCA Inventory.

All ingredients are listed on EINECS.

Safety data sheet was developed using EC 1907/2006 amended as of 20 May 2010 EU No 453/2010 and information as stated under regulation EC No 1272/2008 CLP Regulation.

GHS = Global Harmonized System

CLP= Classification, labeling and packaging

Product does not contain any substances ozone depleting substances and therefore not subject to EC 2037/2000.

15.2 Chemical safety assessment: None performed.

SECTION 16. OTHER INFORMATION

NOTE: **The Indium Corporation does not recommend, manufacture, market or endorse any of its products for human consumption.**

Revised Date: 29 DECEMBER 2017

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Changes provided on this SDS were based on the requirements of EU No. 453/2010 of May 20, 2010 regarding amendments to EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

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