



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: COPPER RIBBON COATED WITH METAL ALLOY AND R FLUX COATING

SDS Number: SDS-5101

Revised Date: 10 DECEMBER 2018

Product Use: INDUSTRIAL USE – COPPER METAL RIBBON COATED WITH VARIOUS METAL ALLOYS WITH A FLUX COATING

MANUFACTURER:

In America:

The Indium Corporation of America®.
34 Robinson Rd., 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 China: Emergency 86+ 4008417580

In Europe:

The Indium Corporation of America® (European Operations)
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. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900

In Asia:

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

2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

√ Eye √ Inhalation √ Skin √ Ingestion

CARCINOGEN LISTED IN:

NTP IARC OSHA √ Not Listed

GHS:



Signal Word: Warning

Hazard statement(s)

H335 May cause respiratory irritation (other metals not tin)

Precautionary statement(s)

P233 Keep container tightly closed
 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)
 P501 Dispose of in accordance with applicable local/state and federal regulations. Consider recycling.

Classification:

Respiratory sensitizer-Category 1B

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact with powered 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.

Ingestion: Ingestion of dust may cause nausea. May be harmful.

Inhalation: Inhalation of fume or dust may cause local irritation to the respiratory system. Rosin may cause occupation asthma.

Skin Contact: Normal handling should not cause any adverse health effects. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal. Exposure to copper dust may cause a greenish-black skin discoloration. Rosin may cause irritation or dermatitis.

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.

TIN: Has been shown to increase incidence of sarcoma in animal tests.

SILVER: Chronic skin contact or ingestion of silver powder, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.



WARNING: This product can expose you to chemicals including [trace amounts of lead] which is known to

the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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 #	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
TIN	*	7440-31-5 (US)	2	2	-
		(EU)	-	2	4
		(Canada)	-	2	4
		(Singapore)	2	-	-
SILVER	*	7440-22-4 (US)	0.01	0.1	-
		(EU)	-	0.1	-
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(Mexico)	-	0.1	-
COPPER	99	7440-50-8 (US)	0.1	0.1	-
		(EU)	-	0.1	-
		(Canada)	-	0.2	0.6
		(Singapore)	0.2(fume)	1(dust)	-
		(Mexico)	-	0.2(fume) 1(dust)	2
		(China)	-	1(dust) 0.2(fume)	2.5 0.6
ROSIN	1-3	65997-05-9	N.E	N.E.	N.E
		(EU)	0.05	-	0.15

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

* See alloy table

ALLOY TABLE

Metal Alloy Mixture For Coating

Indalloy	%Tin Sn	%Silver Ag	Specific Gravity	RoHS 2/3* Compliance
121	96.5	3.5	7.50	Yes

*RoHS 2 = Restriction on Hazardous Substances (2011/65/EU) RoHS 3- no phthalates

4. 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.
- 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.

5. FIRE FIGHTING MEASURES

- Flash Point:** Not established. **Method:** Not established.
- Auto-ignition Temperature:** Not established.
- 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.
- 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. Do not sweep. Use a vacuum, place in barrels and return to process if applicable. Otherwise, dispose of following all Federal, State and Local regulations. In the EU refer to the Special Waste 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.
- 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.

Personal protection:

Eyes: Chemical safety glasses/goggles and face shield with molten metal.

Respirator: An authority 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.

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.

Other: Lab coat, safety shower and eye-wash fountain in work area. Avoid the use of contact lenses in high fume 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

Appearance:	Solid metal	Boiling Point:	2595C (copper)
Odor:	Odorless	Melting Point:	1083C (copper)
Specific Gravity:	8.92 (copper)	pH:	Not applicable
Vapor Pressure:	Not applicable.	Solubility in Water:	Insoluble
Vapor Density:	(air=1) Not applicable.		

10. STABILITY AND REACTIVITY

General: Stable.

Conditions to Avoid: Not established.

Incompatible Materials: Avoid contact with mineral acids.

Hazardous Decomposition / Combustion: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: National Toxicity Program (NTP):	No
Occupational Safety & Health Administration (OSHA):	No
U.N. International Agency for Research on Cancer (IARC):	No
LD50:	Not established
LC50:	Not established
Irritancy of Product:	Not established
Mutagenicity:	Not established
Sensitization to Product:	Not established
Teratogenicity:	Not established
Reproductive Toxicity:	No specific data is available
Synergistic Products:	Not established

12. ECOLOGICAL INFORMATION

This section is subject to future development. Product not tested.

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 Special Waste Regulations.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements. Not regulated under US DOT (United States Department of Transportation). Non hazardous for shipping.

North America Emergency Guide Book – Not applicable

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.).

The information in this Safety Data Sheet meets the requirements of the EU under Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 (CHIP 2) Regulation 6.

This product has been classified in accordance with the hazard criteria of the Commission Directive 91/155/EEC and EH40.

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

Canadian WHMIS: D2B Materials Causing Other Toxic Effects –irritant (rosin)



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 under the Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

Regulatory Information China:

GB/T 16483-2008, GB/T 17519-2013, Safety Data Sheets for Chemical Products

GB 30000.2-29-2013, Rules for classification and labeling of chemicals (GHS)

Decree No. 591: Regulations on the Control Over Safety of Hazardous Chemicals.

This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007.

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



WARNING: This product can expose you to chemicals including [trace amounts of lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

SARA 313 Listing - 40 CFR 372.65: Silver CAS# 7440-22-4 Copper CAS# 7440-50-8

All ingredients are listed on the EPA TSCA Inventory.

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	1
	Fire:	0
	Reactivity:	0

Revised Date: 10 DECEMBER 2018

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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