



## SAFETY DATA SHEET

### According to Regulation 2015/830

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

**1.1 Product Identifier:** INDALLOY WITH CORE 230-RC FLUX COATING (LEAD FREE)

**SDS Number:** SDS-6740ELF

**Revised Date:** 18 MAY 2020

**Version:** 1.1

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

**Product Use:** Industrial Use (Mixture) – Flux Coated Metal Preform for industrial applications. Review alloy table for exact product identification.

**Use advised against:** None known

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

##### MANUFACTURER/SUPPLIER/IMPORTER:

###### **In America:**

The Indium Corporation of America®  
34 Robinson Rd., Clinton, New York 13323  
Technical & Safety Information: (315) 853-4900  
Safety & SDS Information: [nswarts@indium.com](mailto:nswarts@indium.com)  
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###### **In China:**

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###### **In Asia:**

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

#### **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**

## **2. HAZARDS IDENTIFICATION**

### **PRIMARY ROUTES OF ENTRY:**

Eye

Inhalation

Skin

Ingestion

NTP

### **Carcinogen listed in**

IARC

OSHA

Not Listed

#### **2.1 Classification: Mixture**

No classification

#### **2.2 Label elements :**

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

No hazard statements

#### **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

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)

#### **Supplemental Information:**

EUH208 Contains rosin. May produce an allergic reaction

#### **2.3 OTHER HAZARDS:**

#### **POTENTIAL HEALTH EFFECTS:**

**Eye Contact:** Contact with metal alloy 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:** This product contains metal alloy which may be harmful if swallowed.

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

**Skin Contact:** Normal handling of solid metal should not cause any adverse health effects. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal. Protect skin when grinding/cutting, may cause irritation.

**Chronic:**

**TIN:** Overexposure may cause metal fume fever.

**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.

**COPPER:** Overexposure to fumes of copper may cause metal fume fever (chills, muscle aches, nausea, fever; dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair.

**NICKEL:** Skin sensitizer and possible carcinogen

**ROSIN FUME:** May cause irritation, sensitization by skin contact or if inhaled.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.2 Mixture:

Chemical Name	CAS No	EC No	Concentration (%w/w)	Classification
Tin	7440-31-5	231-141-8	90 - 99	Not classified
Silver	7440-22-4	231-131-3	0 - 4	Not classified
Copper	7440-50-8	231-159-6	0 – 0.7	Not classified
Rosin Mix	65997-05-9		1 - 5	Not classified
Germanium	7440-56-4	231-164-3	0.0095 – 0.0099	Not classified
Nickel	7440-02-0	231-111-4	0.0475-0.0495	H317, H351, H372
Cobalt	7440-48-4	231-158-0	0.475 – 0.495	H302, H317, H334, H350i, H360F

1 - 5% flux core

Indalloy (metal mix)	% TIN Sn	% SILVER Ag	% COPPER Cu	% COBALT Co	% NICKEL Ni	% GERMANIUM Ge	RoHS 2/3 Compliance
121 (96.5Sn/3.5Ag)	91.7-95.5	3.34-3.47	-	-	-	-	Yes
241 (SAC 387) (95.5Sn/3.8Ag/0.7Cu)	90.7-94.5	3.6-3.8	0.665-0.69	-	-	-	Yes
256 (SAC 305) (96.5Sn/3Ag/0.5Cu)	91.7-95.5	2.85-2.97	0.475-0.495	-	-	-	Yes
263 (SAC0307) (Sn99/0.3Ag/0.7Cu)	94.1-98	0.285-0.297	0.665-0.69	-	-	-	Yes
291 (99.25Sn, 0.7Cu, 0.05Ni, ≤0.01Ge)	94.29-98.26	-	0.665-0.693	-	0.0475 – 0.0495	0.0095- 0.0099	Yes
Non Standard (Sn96/4Ag)	91.2-95	3.8-3.96	-	-	-	-	Yes
Non Standard (99.3Sn/0.7Cu)	94.3-98.3	-	0.665-0.69	-	-	-	Yes
Sn995 (99.5Sn/0.5Co)	94.5-98.5	-	-	0.475-0.495	-	-	Yes

RoHS 2 = Restriction of Hazardous Substances  
 EU Directive 2011/65/EU

RoHS 3- products do not contain any listed phthalates

**4. FIRST AID MEASURES**

4.1 **Description of 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:** 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.

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

Exposure to metal fumes may cause irritation to the respiratory system. Long term exposure by inhalation to metal fumes may cause illness such as metal fume fever. Rosin fume may cause respiratory irritation. May cause occupational asthma.

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

No specific special treatment information is available on this mixture. Review data provided in this document to understand the hazards when working with the product. No other information is available at this time.

## 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 fumes of carbon monoxide if burning or metal oxide fumes.

5.3 **Advice for Firefighters:** Fire fighters must wear approved self-contained breathing apparatus and full protective clothing. Material product is not flammable. Metal dust in air could pose a flammable issue. No other information is available.

## 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. Solid metal can easily be cleaned up. Do not sweep. Vacuum solids and avoid creating dust in air.

**6.2 Environmental Precautions:** Metals are not generally suited for release to any body of water including drains. Avoid release to environment.

**6.3 Methods and material for containment and cleaning up:** Spill or leak procedures: Solid metal can be picked up and placed into metal container. If hot allow to cool, then place into metal container. Recycle metal.

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

## 7. HANDLING AND STORAGE

7.1 **Precautions:** Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment when working or handling product. 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 when heating product. Emissions contain metal fumes.

7.2 **Conditions for Safe Storage, including any incompatibilities:** 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):** Soldering applications and other applications.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control Parameters:

			<u>TWA</u>	<u>STEL</u>
			mg/m3	mg/m3
		<u>CAS#/EINECS#</u>		
<b>TIN</b>	90 - 95.5	7440-31-5/231-141-8		
		(UK)	2	4
		(Belgium)	2	-
		(Germany)	2	-
		(Netherlands)	2	-
		(Spain)	2	-
		(Poland)	2	-
<b>SILVER</b>	3.8 – 3.98	7440-22-4/231-131-3		
		(UK)	0.1	0.3
		(Belgium)	0.1	-
		(France)	0.1	-
		(Germany)	0.1	-
		(Netherlands)	0.1	-
		(Spain)	0.1	-
(Poland)	0.05	-		
<b>COPPER</b>	0 – 0.7	7440-50-8 /231-159-6		
		(UK)	0.2 (fume)	-
		(France)	2	0.2(fume)
		(Belgium)	1	-
		(Spain)	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
				0.2 (fume)	
		(Poland)		0.2	-
<b>GERMANIUM</b>	0.0095 – 0.0099	7440-56-4/231-164-3		N.E.	N.E.
<b>NICKEL</b>	0.0475 – 0.0495	7440-02-0/231-111-4			
		(UK)		0.5	1.5
		(Ireland)		0.5	1.5
<b>COBALT</b>	0.475 – 0.495	7440-48-4/231-158-0			
		(UK)		0.1(powder)	0.3
<b>ROSIN MIX</b>	1 - 5	65997-05-9			
		(EU)	0.05	N.E.	0.15 (sensitizer)

N.E. = Not established

TWA= time weighted average- 8hr. STEL=short term exposure level- 15 minutes

**8.2 Exposure Controls:**

**Engineering Controls:** Use with proper equipment with adequate exhaust ventilation and other safety features specifically designed for use with solder applications or other industrial uses. Control concentration of all components with established exposure limits so they are not exceeded. Use exhaust ventilation when heating product. Air emission control equipment may be necessary based on the local governmental requirements for contaminates entering the atmosphere. Emissions contain metal fumes.

**Personal protection:** Follow requirements for proper equipment as outlined under 2016/425.

**Eye/face protection:**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection:**

Handle with CEN approved disposable nitrile gloves (minimum layer thickness: 5 mil), EN 374 Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Use EN 407 approved thermal (hot) gloves for any handling of molten metal.

**Body Protection:**

The type of protective equipment must be selected according to the concentration and amount of any other substances used at the specific workplace. Handling of flux coated parts requires the use of gloves, eye protection and may require additional protection such as lab coat.

**Respiratory protection:**

Where risk assessment shows respirators are appropriate use a particle respirator type P100 (US) or half face respirator with multi-gas cartridges or type P3 (EN 143) respirator cartridges as a backup to engineering controls.

**Work/Hygienic:**

Maintain good housekeeping. Clean up spills immediately. Wash hands thoroughly with soap and water immediately upon leaving the work area and before eating. Refrain from eating or smoking in work areas. When applicable in US, review, OSHA lead worker requirements. Certain work practice and medical monitoring may be required.

**Control of environmental exposure:**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties:

<b>Appearance:</b>	Solid metal	<b>Boiling Point/Range:</b>	Not determined-solid metal
<b>Odor:</b>	None - metal.	<b>Melting Point/Freezing Point:</b>	See table
<b>Odor Threshold:</b>	Solid metal	<b>Evaporation Rate:</b>	Not applicable-solid metal
<b>Specific Gravity:</b>	See table	<b>pH:</b>	Not applicable-solid metal
<b>Vapour Pressure:</b>	Not applicable.	<b>Solubility in Water:</b>	Insoluble
<b>Vapour Density:</b>	(air=1) Not applicable.	<b>Partition coefficient:</b>	Not established
<b>Relative Density:</b>	Not established	<b>Flammability:</b>	Not applicable-not flammable
<b>Flash Point:</b>	Not flammable-metal	<b>Method:</b>	Not applicable-not flammable
<b>Auto-ignition Temperature:</b>	Not applicable-metal	<b>Flammable Limits:</b>	Limits not established-metal
<b>UEL/LEL Limits:</b>	Not applicable-metal	<b>Decomposition Temp:</b>	Not applicable
<b>Viscosity:</b>	Not applicable-metal	<b>Explosive properties:</b>	Not applicable-solid metal
<b>Oxidizing Properties:</b>	Not established for metal		

9.2 Other Information: Above data for the whole mixture.



## 10. STABILITY AND REACTIVITY

- 10.1 **Reactivity:** Stable.
- 10.2 **Chemical Stability:** Stable
- 10.3 **Possibility of Hazardous Reactions:** Not established. Hazardous Polymerization will not occur
- 10.4 **Conditions To Avoid:** None known
- 10.5 **Incompatible Materials:** Avoid contact with acids, bases or oxidizing agents.
- 10.6 **Hazardous Decomposition /Combustion:** Harmful organic fumes and toxic oxide fumes may form at elevated temperatures. Metal oxide fumes.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects:

<b>Acute toxicity:</b> Not established	<b>Mutagenicity:</b> Not established
<b>Irritation:</b> Contains rosin	<b>Toxicity for Reproduction:</b> Not Established
<b>Corrosivity:</b> Not applicable	<b>Absence of specific data:</b> None available (not tested)
<b>Sensitization:</b> Contains rosin which may cause sensitization.	
<b>Repeated dose toxicity:</b> No information available	
<b>Carcinogenicity:</b> None	
<b>Likely Routes of Entry:</b> eyes (irritation), skin (irritation), inhalation (irritation/harmful), ingestion (may be harmful)	

**Interactive effects:** None known

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

May cause irritation or harm by inhalation.

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

**Mixture verses substance information:** None known

### 11.3 Other Information:

**Carcinogenicity:** NTP: No (National Toxicity Program)  
**Listing** OSHA: No (Occupational Safety and Health Administration)  
 IARC: Yes (International Agency for Research on Cancer)- Group 2B Nickel, Cobalt

Silver – LD50 oral – rat > 5,000 mg/kg

Tin – LD 50 oral-rat >2000 mg/kg

Nickel- LD50- oral rat >9,000 mg/kg

Registry of Toxic Effects of Chemical Substances: RTECS# VM3500000 (silver), XP7320000 (tin),

## 12. ECOLOGICAL INFORMATION

Product mixtures not tested.

12.1 **Toxicity:** No information available

- 12.2 **Persistence and degradability:** No information available
- 12.3 **Bioaccumulative potential:** No information available
- 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 for mixture. Avoid release to environment.

### 13. DISPOSAL CONSIDERATION

- 13.1 **Waste treatment method:** Scrap metal alloy usually has value. Contact a commercial reclaimer for recycling. 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.

### 14. TRANSPORT INFORMATION

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

**UN proper shipping name:** None

**Transport hazard class(s):** None

**Packing group:** None

**Environmental hazards:** None

**Special precautions for user:** None

**Transport in bulk:** Not applicable

### 15. REGULATORY INFORMATION

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

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.).

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 February, 2020 EU No 2015/803 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 ozone depleting substances and therefore not subject to EC 1005/2009.

**RoHS (Restriction of Hazardous Substances):** Product complies

**REACH** – Substances of Very High Concern – complies.

**Chemical safety assessment:** None performed for mixture.

German Water Hazard: WGK product not classified.

## 16. OTHER INFORMATION

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

**Revised Date:** 18 MAY 2020

**Prepared by:** Nancy Swarts, The Indium Corporation of America, nswarts@indium.com

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

Changes provided on this SDS were based on the requirements of EU 2020/171 as of amendments February 6, 2020 regarding EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

The information and recommendations contained herein are, to the best of The Indium Corporation of America's knowledge and belief, accurate and reliable as of the date issued. The Indium Corporation of America does not warrant or guarantee their accuracy or reliability, and The Indium Corporation of America shall not be liable for any loss or damage arising out of the user thereof. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.