



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH LV1000

SDS Number: SDS-57361

Revised Date: 13 DECEMBER 2017

Product Use: Industrial Use - Flux coated preform, ribbon or wire with 0.4-3% flux coating. See alloy table for metal mixtures using the same flux.

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

Indium Corporation of America
Chicago Materials Division
80 Scott Street
Elk Grove Village, Illinois 60007
Information: (847) 439-9135

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. 14-C
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

PRIMARY ROUTES OF ENTRY:

⊕Eye ⊕Inhalation ⊕Skin ⊕Ingestion NTP

Carcinogen listed in

IARC OSHA ⊕Not Listed

GHS:

Lead free products



Signal Word: Warning

Hazard statement(s)

H317 May cause an allergic skin reaction
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H335 May cause respiratory irritation
 EUH208 Contains rosin. May produce an allergic reaction

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)

Lead containing products



Signal Word: Warning

Hazard statement(s)

H303 May be harmful if swallowed
 H317 May cause an allergic skin reaction
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H335 May cause respiratory irritation
 H351 Suspected of causing cancer
 H361 Suspected of damaging fertility or the unborn child
 H373 May cause damage to organs through prolonged or repeated exposure
 H410 Very toxic to aquatic life with long lasting effects
 EUH208 Contains rosin. May produce an allergic reaction

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)

Classification:

Carcinogenicity (Category 2) (lead)

Reproductive toxicity (Category 2) (lead)

Skin sensitizer-Category 1B

Respiratory sensitizer-Category 1B

Eye irritation-Category 2A

Acute aquatic toxicity – Category 1 for lead containing products (H400)

Chronic aquatic toxicity – Category 1 for lead containing products (H410)

POTENTIAL HEALTH EFFECTS:

Eye Contact: Irritating to the eyes and if not removed may result in serious injury. Contact with fume from molten metal may cause irritation.

Ingestion: This product contains metal and organic chemicals. May cause irritation.

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

Skin Contact: May cause skin irritation. Exposure to rosin may cause irritation or dermatitis. ANTIMONY has been known to cause dermatitis.

Chronic:

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.

TIN: Prolonged inhalation of fume may result in lung complications.

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.

LEAD: Prolonged exposure to vapors or fumes at higher temperatures may cause respiratory irritation and systematic lead poisoning. Symptoms of lead poisoning include headache, nausea, abdominal pain, muscle and joint pain and damage to the nervous system, blood system and kidneys.

INDIUM: May cause damage to respiratory system.

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

Warning: Applicable in the State of California: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (lead)

Warning: This product may contain lead. Lead may be harmful to your health. US Federal law prohibits the use of leaded solders in making joints or fittings in any private or public water supply system. Keep out of the reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #/EINECS#	PEL mg/m³	TLV-TWA mg/m³	TLV-STEL mg/m³	
TIN	*	7440-31-5/231-141-8				
			(US)	2	2	-
			(EU)	-	2	4
			(Canada)	-	2	4
			(Singapore)	2	-	-
SILVER	*	7440-22-4/231-131-3				
			(US)	0.01	0.1	-
			(EU)	-	0.1	-
			(Canada)	-	0.1	0.3
			(Singapore)	0.1	-	-
(Mexico)	-	0.1	-			
COPPER	*	7440-50-8/231-159-6				
			(US)	0.1 (fume)	0.2 (fume)	-
			(EU)	-	0.2 (fume)	-
			(Canada)	-	0.2 (fume)	0.6 (fume)
			(Singapore)	0.2(fume)	-	-
			(Mexico)	-	0.2(fume)	2
(China)	-	0.2(fume)	0.6			
LEAD	*	7439-92-1/231-100-4				
			(US)	0.05	0.05	-
			(EU)	-	0.15	-
			(Canada)	0.05	0.05	-
			(Singapore)	0.15	-	-
			(Mexico)	N.E.	0.15	-
			(China)	-	0.05(dust) 0.03(fume)	-
INDIUM	*	7440-74-6/231-180-0				
			(US)	0.1	0.1	-
			(EU)	-	0.1	0.3
			(Canada)	-	0.1	0.3
			(Mexico)	-	0.1	0.3

		(Singapore)	0.1	-	-
		(China)	-	0.1	0.3
ANTIMONY	*	7440-36-0/231-146-5			
		(US)	0.5	0.5	-
		(EU)	0.5	-	-
		(Canada)	N.E.	0.5	1.5
		(Singapore)	0.5	-	-
		(Mexico)	0.5	-	-
		(China)	-	0.5	-
ROSIN MIX	0.5-3.0	65997-05-9 (US)	N.E.	N.E.	N.E.
		(EU)	0.05	N.E.	0.15 (sensitiser)

N.E. = Not established

ALLOY TABLE

0.4-3% flux

<u>Indalloy Mixture</u> <u>(%Metal)</u>	%TIN Sn	%SILVER Ag	%COPPER Cu	%LEAD Pb	%INDIUM In	%ANTIMONY Sb	RoHS 2 Compliance*
7 (50In/50Pb)	-	-	-	48.5-49.8	48.5-49.8	-	No
104 (Sn62/Pb36/Ag2)	60-61.7	1.94-1.99	-	34.9-35.8	-	-	No
106 (Sn63/Pb37)	59.9-62.7	-	-	35-36.8	-	-	No
121 (96.5Sn/3.5Ag)	93.6-96.1	3.4-3.49	-	-	-	-	Yes
159 (90Pb/10Sn)	9.7-9.96	-	-	87.3-89.6	-	-	Yes
241 SAC 387 (95.5Sn/3.8Ag/0.7Cu)	92.6-95.1	3.7-3.78	0.68-0.697	-	-	-	Yes
246 (SAC405) (95.5Sn/4Ag/0.5Cu)	92.6-95	3.88-3.98	0.485-0.498	-	-	-	Yes
256 SAC 305 (96.5Sn/3Ag/0.5Cu)	93.6-96.1	2.91-2.99	0.485-0.498	-	-	-	Yes
<u>Indalloy Mixture</u>	%TIN	%SILVER	%COPPER	%LEAD	%INDIUM	%ANTIMONY	RoHS 2

(%Metal)	Sn	Ag	Cu	Pb	In	Sb	Compliance*
258 (SACM0510) (98.5Sn/0.5Ag/1Cu)	97.5-98	0.485-0.498	0.97-0.996	-	-	-	Yes
259 (90Sn/10Sb)	87.3-89.6	-	-	-	-	9.7-9.96	Yes
(96.3Sn/3.7Ag)	93.4-95.9	3.59-3.69	-	-	-	-	Yes

*RoHS 2 = Restriction of Hazardous Substances (2011/65/EU)

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: 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.

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: Pick up solids and put in container for reuse or recycling. Do not sweep powder or small particulate. Use vacuum. Reduce airborne dust and prevent scattering by moistening with water. Dispose of following all Federal, State and Local regulations.

7. HANDLING AND STORAGE

Handling Keep containers tightly closed when not in use. Use care to avoid spills. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed.

Storage Precautions: Refer to product label for specific storage temperature requirements. Rotate stock to ensure use before expiration date on the label.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation is recommended to keep exposures below established limits and protect operators especially during heating of material.

Personal protection:

Eyes: Chemical safety glasses/goggles. Faceshield for splash hazards or particulate.

Respirator: An authority approved or compliant marked air-purifying respirator with a fume/organic/particulate chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or exceed exposure limits.

Skin: Compatible chemical resistant gloves may be required for certain applications. Hot gloves as needed for melting applications. Nitrile disposable or other chemical resistant gloves. Latex is not recommended for most handling situations.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume or particulate areas.

Work/Hygienic 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. When applicable, follow proper lead work procedures.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	metal	Boiling Point:	Not applicable.
Odor:	Odorless		
Melting Point:	Not available, see product data sheet		
Specific Gravity:	Not available, see product data sheet		
pH:	Not applicable		
Vapor Pressure:	Not available	Solubility in Water:	Insoluble
Vapor Density:	(air=1) Not available.		

10. STABILITY AND REACTIVITY

General:	Stable.
Conditions to Avoid:	Not established.
Incompatible Materials:	Avoid contact with acids, bases or oxidizing agents.
Hazardous Decomposition	Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:	NTP: No		
	OSHA: No		
	IARC: No		
LD50:	Not established.	LC50:	Not established.
Other: Chronic Toxicity: Prolonged or repeated exposure to rosin flux fume may cause workers to develop occupational asthma.			

12. ECOLOGICAL INFORMATION

Product not tested. No information available.

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.

14. TRANSPORT INFORMATION

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

UN – none.

Non hazardous- (ground/IATA/IMDG)

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.).

SARA 313 Listing - 40 CFR 372.65
Silver Copper Lead Antimony

All ingredients are listed on the EPA TSCA Inventory.

EPA Genetic Toxicology Program – Lead CAS# 7439-92-1

California Prop 65 Safe Drinking Water Standard: Warning: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (lead)

Malaysia:

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). (GHS)

In China:

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 using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007.

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

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



D2A-Materials Causing Other Toxic Effects-Very Toxic Material (Chronic) (lead)

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

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	2
	Fire:	1
	Reactivity:	0

Revised Date: 13 DECEMBER 2017

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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.