



THE INDIUM CORPORATION OF AMERICA®\EUROPE®\ASIA-PACIFIC®  
 INDIUM CORPORATION (SUZHOU)®  
**SAFETY DATA SHEET**

Some of the regulatory information contained within may not be applicable to the customer's individual state or country. Unless otherwise stated the health and safety information provided within is applicable to all.

## 1. PRODUCT AND COMPANY IDENTIFICATION

**General Product Class Identifier:** INDALLOY WITH INDIUM8.9HFA

(View product table for individual product descriptions)

**SDS Number:** SDS-5050X

**Revised Date:** 14 FEBRUARY 2017

**Product Use:** Industrial Use -No-clean solder paste consisting of a flux vehicle blended with an 83-92 % pre-alloyed metal powder used for solder applications. Review alloy table for metal mixtures with the same flux.

**FOR CHEMICAL EMERGENCY ONLY PHONE \*:**

**CHEMTREC 24 hrs.**

**USA: 1 (800) 424-9300**

**Outside USA: +1 (703) 527-3887**

**\* Used only for transportation spill/leak/fire/exposure/accident**

**ALL OTHER INQUIRIES: TOLL FREE: 1-800-448-9240 Indium Corporation**

### MANUFACTURER:

**In America:**

The Indium Corporation of America  
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 Safety Information: (315) 853-4900  
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**In China:**

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 Suchun Industrial Square  
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 Information: (86) 512-6283-4900

<http://www.indium.com>

## 2. HAZARDS IDENTIFICATION

### GHS



Signal Word: Warning

#### Hazard statement(s)

- H315 Causes skin irritation
- H317 May cause an allergic skin reaction
- H319 Causes serious eye irritation
- 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 +P 314 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:

- Eye
- Inhalation
- Skin
- Ingestion

#### CARCINOGEN LISTED IN:

- NTP
- IARC
- OSHA
- Not Listed

#### POTENTIAL HEALTH EFFECTS:

- Eye Contact:** Contact with material at room temperature or fume from material at typical re-flow temperatures over 100°C may cause eye irritation.
- Ingestion:** Irritating to digestive tract.
- Inhalation:** Vapors or fumes from this material at typical re-flow temperatures over 100°C may cause local irritation to the respiratory system. Rosin fume may cause occupational asthma.
- Skin Contact:** May cause skin irritation. Rosin and antimony may cause dermatitis.

**Chronic:**

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

**TIN:** Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure to tin dusts and fume may result in “stannosis” a mild form of pneumoconiosis.

**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.

**WARNING:** Applicable only in the State of California: 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, manufacture, 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>	
<b>TIN</b>	*	7440-31-5/231-141-8				
			(US)	2	2	-
			(EU)	-	2	4
			(Canada)	-	2	4
			(Singapore)	2	-	-
<b>SILVER</b>	*	7440-22-4/231-131-3				
			(US)	0.01	0.1	-
			(EU)	-	0.1	-
			(Canada)	N.E.	0.1	0.3
			(Singapore)	0.1	-	-
			(Mexico)	0.1	-	-
<b>COPPER</b>	*	7440-50-8/231-159-6				
			(US)	0.1	0.2	-
			(EU)	-	0.2 (fume)	2(dust)
			(Canada)	-	0.2	0.6
			(Singapore)	0.2(fume)	1(dust)	-
			(Mexico)	0.2	-	2

		(China)	-	0.2(fume)	0.6(fume)
<b>ANTIMONY</b>	*	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	-
<b>BISMUTH</b>	*	7440-69-9/231-177-4	N.E.	N.E.	N.E.
<b>ROSIN</b>	4.0-7.0	65997-05-9 (US)	N.E.	N.E.	N.E.
		(EU)	0.05	-	0.15 (sensitiser)
<b>POLYGLYCOL ETHER</b>	3.0-5.0	9038-95-3	N.E.	N.E.	N.E.
<b>NON HAZARDOUS PROPRIETARY</b>	1.0-6.0	-	N.E.	N.E.	N.E.

N.E. = Not established      \* See Alloy Table

**ALLOY TABLE (DATA)**

**%Metal Mix in Flux**

Indalloy Mixture (%Metal)	%TIN Sn	%SILVER Ag	%COPPER Cu	%ANTIMONY Sb	%BISMUTH Bi	RoHS* 2 Compliance
121 (96.5Sn/3.5Ag)	80-88.8	2.9-3.2	-	-	-	YES
133 (95Sn/5Sb)	79--87	-	-	4.2-4.6	-	YES
241 (SAC 387) (95.5Sn/3.8Ag/0.7Cu)	79.2-87.9	3.2-3.5	0.58-0.64	-	-	YES
256 (SAC 305) (96.5Sn/3Ag/0.5Cu)	80.1-88.8	2.5-2.8	0.42-0.46	-	-	YES
258 (SAC105)	81.8-90.6	0.83-0.92	0.42-0.46	-	-	YES

(98.5Sn/1Ag/0.5Cu) Doped with Mn 100-500 ppm						
259 90Sn/10Sb	74.7-82.8	-	-	8.3-9.2	-	YES
263 (SAC0307) (99Sn/0.3Ag/0.7Cu)	82-91	0.25-0.28	0.58-0.64	-	-	YES
Non Standard Alloy Mix 99.2Sn/0.5Cu/0.3Bi	82.3-91.3	-	0.42-0.46	-	0.25-0.28	YES

**\*RoHS2 = 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:** Using a spatula, scoop up paste and place in a plastic or glass jar and tightly cap. Remove traces of paste residue using cloth rags or paper towels moistened with ethyl or isopropyl alcohol. Dispose contaminated cloth rags or paper towels following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations. Material may have reclaim value.

#### 7. HANDLING AND STORAGE

- Handling Precautions:** Keep containers tightly closed when not in use. Use care to avoid spills. Use only with production equipment specifically designed for use with solder paste. Wear appropriate

personal protective equipment when working or handling solder paste. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed.

**Storage Precautions:** Store product in tightly capped original containers in a cool, dry area. 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:** Use only with production equipment (stencil printers and re-flow furnaces) with adequate ventilation and other safety features specifically designed for use with solder paste. Control concentration of all components so that exposure levels are not exceeded.

### Personal protection:

**Eyes:** Chemical safety glasses/goggles. Face shield for splash hazards.

**Respirator:** An approved or compliant marked air-purifying respirator with a fume/organic chemical cartridge is recommended under certain circumstances (i.e. when re-flowing manually on a plate instead of a ventilated re-flow furnace) where airborne concentrations are expected to be elevated or exceed exposure limits.

**Skin:** Compatible chemical resistant gloves. Nitrile disposable glove or other rubber glove. Latex not recommended.

**Other:** Lab coat, eyewash fountain in work area. Avoid the use of contact lenses in high fume areas.

**Work/Hygienic Practices:** Maintain good housekeeping. Clean up spills immediately. DO NOT allow rags or paper towels contaminated with solder paste to accumulate in the work area. 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:** Grey colored paste.

**Odor:** Mild characteristic odor.

**Specific Gravity:** 1 g/cc

**Vapor Pressure:** Not applicable.

**Vapor Density:** (air=1) Not applicable.

**Flammability:** Not applicable

**Decomposition temp:** Not available

**Evaporation rate:** Not applicable

**Boiling Point:** Not applicable.

**Melting Point:** Not applicable

**pH:** 4 -8 (flux)

**Solubility in Water:** Insoluble (paste)

**Flash Point:** Not flammable

**Auto-ignition temp:** Not applicable

**Viscosity:** Consult product data sheet

## 10. STABILITY AND REACTIVITY

**General:** Stable.

**Conditions to Avoid:** Not established.

**Incompatible Materials:** Avoid contact with acids, bases or oxidizing agents.

**Hazardous Decomposition / Combustion:** 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..

## 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 regulations and requirements. Not regulated (US Department of Transportation).

Not hazardous under shipping regulations.(ground/IATA/IMDG)

UN – none.

Marine pollutant: No

North American Emergency Guide Book – Not applicable

## 15. REGULATORY INFORMATION

GHS= Globally Harmonized System

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.).

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)

SARA 313 Listing - 40 CFR 372.65  
Silver / Copper/ Antimony

All ingredients are listed on the EPA TSCA Inventory.

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 (skin irritation/skin sensitization)

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).

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

This product SDS includes exposure information in accordance with 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.

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

## 16. OTHER INFORMATION

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

**Revised Date:** 14 FEBRUARY 2017

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

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

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