



**INDIUM CORPORATION OF AMERICA**  
**®\EUROPE®\ASIA-PACIFIC®\INDIUM CORPORATION (SUZHOU) ®**

This safety data sheet represents a family grouping of all metal mixes that are blended with the same flux. A table is provided that lists all metal groupings. To better serve all of our customers and reduce the paperwork burden Indium Corporation has generated one SDS, for this product, to be used within the United States as well as internationally. Some of the regulatory information contained within may not be applicable to the customer's individual state or country. Some of the metal information may not be applicable to all products. Unless otherwise stated the health and safety information is applicable.

## SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** INDALLOY WITH FLUXCAKE-801 (CW-801)

**SDS Number:** SDS- 4590

**Revised Date:** 9 AUGUST 2016

**Product Use:** Industrial Use - Flux Cored Wire (metal mixture with 1 - 6% flux)  
See alloy table for metal alloy mix.

#### MANUFACTURER:

##### In America:

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## 2. HAZARDS IDENTIFICATION

### PRIMARY ROUTES OF ENTRY:

\*Eye    \*Inhalation    \*Skin    \*Ingestion    NTP

### Carcinogen listed in

IARC    OSHA    \*Not Listed  
See Section 11

GHS



for lead containing

Signal Word: Warning

### Hazard statement(s)

H303	May be harmful if swallowed (lead)
H319	Causes serious eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351	Suspected of causing cancer (lead)
H361	Suspected of damaging fertility or the unborn child (lead)
H373	May cause damage to organs through prolonged or repeated exposure (lead)
H410	Very toxic to aquatic life with long lasting effects (lead)
EUH201A	Warning! Contains lead (applicable only to the products listed that contain lead) Review listing.
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)  
 Specific target organ toxicity-repeated exposure-Category 2 (lead)  
 Acute aquatic toxicity (Category 1) (lead)  
 Chronic aquatic toxicity (Category 1) (lead)  
 Respiratory sensitization- Category 1B

### POTENTIAL HEALTH EFFECTS:

- Eye Contact:** Irritating to the eyes and if not removed promptly Do not allow material to come in contact with eyes. Contact with fume from molten metal may cause irritation.
- Ingestion:** May be harmful if swallowed.
- Inhalation:** Inhalation of fume or dust may cause irritation to the respiratory system. Rosin may cause occupational asthma.
- Skin Contact:** Normal handling of wire is no hazard. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten

metal.

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

**LEAD:** Prolonged exposure to vapors and/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.

**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.

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

**INDIUM:** May cause damage to respiratory system. Kidney and liver damage from injection of indium compounds has been reported based on limited animal testing. Target organs: teeth and gums.

**Warning:** Applicable in the State of California. This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (lead) Prop 65

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

**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/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	2	2	-
		(EU)	-	2	4
		(Canada)	-	2	4
		(Singapore)	2	-	-
<b>LEAD</b>	*	7439-92-1/231-100-4	0.05	0.05	N.E.
		(EU)	N.E.	0.15	N.E.
		(Canada)	N.E.	0.05	N.E.
		(Mexico)	0.15	N.E.	N.E.
		(China)	-	0.05(dust)	-
		(Singapore)	0.15	0.03(fume)	N.E.
<b>COPPER</b>	*	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
<b>SILVER</b>	*	7440-22-4/231-131-3			
		(US)	0.01	0.1	-
		(EU)	-	0.1	-
		(Canada)	-	0.1	0.3
		(Mexico)	-	0.1	-
		(Singapore)	0.1	-	-
<b>INDIUM</b>	*	7440-74-6/231-180-0			
		(US)	0.1	0.1	-
		(EU)	-	0.1	0.3
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(Mexico)	0.1	-	0.3
		(China)	0.1	-	0.3
<b>ANTIMONY</b>	*	7440-36-0/231-146-5			
		(US)	0.5	0.5	-
		(EU)	0.5	-	-
		(Canada)	-	0.5	1.5
		(Mexico)	N.E.	0.5	-
		(Singapore)	0.5	-	-
		(China)	-	0.5	-
<b>ROSIN</b>	0.1 - 2	65997-05-9	N.E	N.E.	N.E
		(EU)	0.05	N.E.	0.15
<b>CARBOXYLIC ACID</b>	0.5 - 2	70248-25-8	N.E.	N.E.	N.E.
<b>PROPRIETARY</b>	0.1 – 2	-	N.E.	N.E.	N.E.
		N.E. = Not established		* See alloy table	

#### 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 applicable
- Flammable Limits:** Not hazardous or flammable.
- Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. Use water spray, carbon dioxide, or foam. Do not allow water run-off to enter sewers or waterways.
- Special Fire Fighting Procedures:** Firefighters wear an approved self-contained breathing apparatus and full protective clothing.

#### 6. ACCIDENTAL RELEASE MEASURES

- Spill or Leak Procedures:** Wear HEPA (high efficiency particulate filter) filter respirator and other personal protective clothing. (See Exposure Controls/Personal Protection Section).  
Clean up spill without generating or dispersing dust into the air. Pick up solid metal wire. Molten metal, wait till cool then pick up. Do not sweep dust vacuum instead.

#### 7. HANDLING AND STORAGE

- Handling Precautions:** Avoid breathing vapors from heated material  
Follow routine safe handling procedures. Use with adequate ventilation.
- Storage Precautions:** Keep away from heat and flame. Store in suitable, tightly sealed, and labeled containers in cool dry, well-ventilated area. Empty containers may be hazardous as they contain product residue.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering Controls:** Local exhaust ventilation is recommended to control any fume or dust air contaminants. Avoid exposure to lead containing fume.
- Personal protection:**
- Eyes:** Chemical safety glasses/goggles and face shield with molten metal.

**Respirator:** A NIOSH approved or EU compliant CE marked air-purifying respirator with a fume/dust HEPA type Chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated.  
 Warning: Air purifying respirators do not protect the worker in oxygen-deficient atmospheres. Follow applicable lead work practices as established under OSHA or other comparable safety standards.

**Skin:** Wear protective gloves, clothing such as lab coat, coveralls, apron and boots.

**Other:** Eye-wash fountain/shower in work area. Avoid the use of contact lenses in high fume and dust areas.

**Work/Hygienic** Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the lead work areas. Wash hands and face thoroughly with soap and water immediately upon leaving the work area and before eating.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Solid, gray metal wire	<b>Boiling Point:</b>	Not available
<b>Odor:</b>	Odorless	<b>Melting Point:</b>	See Table
<b>Specific Gravity:</b>	See Table	<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	Not established	<b>Solubility in Water:</b>	Insoluble
<b>Vapor Density:</b>	(air=1) Not applicable.		

**10. STABILITY AND REACTIVITY**

**General:** Stable.

**Conditions to Avoid:** Not established

**Incompatible Materials:** Not established

**Hazardous Decomposition / Combustion:** Toxic fumes are emitted at elevated temperatures.

**Hazardous Polymerization:** Will not occur.

**11. TOXICOLOGICAL INFORMATION**

**Carcinogenicity:** NTP(National Toxicity Program): No  
 OSHA (Occupational Safety & Health Administration): No  
 IARC (International Agency for Research on Cancer): Yes (Lead and its compounds)

**LD50:** Not established. **LC50:** Not established.  
 Lead can cause potential harm to the developing fetus. Rosin fume has been known to cause 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 under US DOT (United States Department of Transportation). Non hazardous under shipping regulations: IATA/USDOT/IMDG.

UN – none.

#### 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.).

**WARNING:** This product contains a chemical known to the State of California to cause cancer and/or birth defects( or other reproductive harm). (lead). California Prop 65 – Safe Drinking Water Standard.

SARA 313 Listing - 40 CFR 372.65 – Lead Copper Silver Antimony

Ingredient is listed on the EPA TSCA Inventory.

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

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).

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 under the Chinese Occupational Exposure Limit for hazardous Agents in the Workplace, GBZ2-2002.

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

Canadian WHMIS: D2A-Materials Causing Other Toxic Effects-Very Toxic Material (Chronic). (lead)  
D2B –Material Causing Other Toxic Effects – irritation



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**

<b>HMIS Hazard Rating:</b>	<b>Health:</b>	2
	<b>Fire:</b>	0
	<b>Reactivity:</b>	0

**Revised Date:** 9 AUGUST 2016

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

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

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**ALLOY TABLE**

Metal mixture with 1 – 6% flux.

INDALLOY	%LEAD Pb	%TIN Sn	%COPPER Cu	%SILVER Ag	%INDIUM In	%COBALT Co	%ANTIMONY Sb	SG	MELTING POINT	RoHS 2 Compliance
104 Sn62.5/Pb35.1/A g1.4	33-34.7	58.8 - 61.9	-	1.3-1.39	-	-	-	8.4	~354F	NO
106 (Sn63/Pb37)	34.8-36.6	59 - 62.4	-	-	-	-	-	8.4	~361F	NO
116 (Pb50/Sn50)	47-49.5	47-49.5	-	-	-	-	-	8.87	~414F	NO
133 (Sn95/Sb5)	-	89.3- 94	-	-	-	-	4.7 - 4.95	7.25	~464F	YES
227 (Sn77.2/In 20/Ag2.8)	-	72.6- 76.4	-	2.6 - 2.77	18.8 - 19.8	-	-	7.25	~369F	YES
241 SAC387 (Sn95.5/Ag3.8/C u0.7)	-	89.7-94.5	0.66 - 0.69	3.57 - 3.76	-	-	-	7.40	~428F	YES
256 SAC 305 (Sn96.5/3Ag/0.5 Cu)	-	90.7 - 95.5	0.47 - 0.495	2.8 - 2.97	-	-	-	7.40	~428F	YES
Cobalt995 doped with <0.05% Cobalt (99.5Sn/0.5Cu)	-	93.5 - 98.5	0.47 – 0.495	-	-	<0.05	-	7.06	-	YES

Indium Corporation is providing this above RoHS statement as information only. Solder related products are not directly related to the EU Directive. It is the responsibility of the customer to determine compliance with the regulations. Please review any applicable exemptions that may apply.

<http://www.indium.com>