



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

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 paperwork 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. Unless otherwise stated the health and safety information provided within is applicable to all products.

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** INDALLOY WITH ACID CORE FLUX

**SDS Number:** SDS- 4610

**Revised Date:** 9 OCTOBER 2013

**Product Use:** Industrial Use - Flux Cored Wire and other designs for soldering applications

### MANUFACTURER:

#### In America:

The Indium Corporation of America  
 1676 Lincoln Ave., Utica NY 13502  
 Information: (315) 853-4900  
[nswarts@indium.com](mailto:nswarts@indium.com)

Chicago Material Division  
 Indium Corporation of America  
 80 Scott St.  
 Elk Grove Village, Illinois 60007  
 (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 Asia:

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

#### EMERGENCY PHONE:

**CHEMTREC 24 hrs.**

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

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

#### 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

## 2. HAZARDS IDENTIFICATION

### PRIMARY ROUTES OF ENTRY:

\*Eye

\*Inhalation

\*Skin

\*Ingestion

NTP

### Carcinogen listed in

IARC

OSHA

\*Not Listed

See Section 11

General GHS: Not all of the below information is applicable to all of the product metal mixtures. Review the label for the product being used.



ADD TO LEAD CONTAINING PRODUCTS



ADD TO ANTIMONY CONTAINING PRODUCT

Signal Word: Warning

### Hazard statement(s)

H303	May be harmful if swallowed
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H351	Suspected of causing cancer (lead)
H360	May damage fertility or the unborn child (applicable to lead containing product)
H373	May cause damage to organs through prolonged or repeated exposure (applicable to lead containing product)
H400+H413	Very toxic to aquatic life, may cause long lasting harmful effects to aquatic life (lead containing product)
H401+H413	Toxic to aquatic life, may cause long lasting harmful effects to aquatic life (antimony)
EUH201A	Warning! Contains lead (applicable only to the products listed that contain lead) Review listing.

### 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	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)

**POTENTIAL HEALTH EFFECTS:**

In General: Normal handling of wire should not cause any adverse health effects.

**Eye Contact:** Irritating to the eyes and if not removed promptly, may result in serious injury. 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. If, applicable, may cause 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.

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

**Skin Contact:** Normal handling should not cause any adverse health effects. May cause skin irritation. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal. Antimony can cause irritation or dermatitis.

**Chronic:**

**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.

**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.

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

**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.

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

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

**Warning:** This product contains 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>
LEAD	*	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)	-
				0.03(fume)	
		(Singapore)	0.15	N.E.	N.E.
<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>TIN</b>	*	7440-31-5/231-141-8			
		(US)	2	2	-
		(EU)	-	2	4
		(Canada)	-	2	4
		(Singapore)	2	-	-
<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)
		(Mexico)	-	0.2(fume)	2
		(Singapore)	0.2	-	-
		(China)	-	1(dust)	2.5
				0.2(fume)	0.6
<b>ANTIMONY</b>	*	7440-36-0/231-146-5			
		(US)	0.5	0.5	-
		(EU)	0.5	-	-
		(Canada)	-	0.5	1.5
		(Mexico)	-	0.5	-
		(Singapore)	0.5	-	-

			(China)	-	0.5	-
<b>AMMONIUM CHLORIDE</b>	0.1 -1	12125-02-9/235-186-4	(US)	N.E	10(fume)	20(fume)
			(Canada)	-	10(fume)	20(fume)
			(EU)	-	10(fume)	20(fume)
			(Singapore)	10(fume)	-	20(fume)
			(Mexico)	-	10(fume)	20(fume)
<b>PROPRIETARY</b>	1.5 - 5	-	-	N.E.	N.E.	N.E.

Symbol: X<sub>n</sub> Risk Phrases: R20/21/22, R36/37/38 (SEE SECTION 15)  
 N.E. = Not established \* See Alloy Table  
 SDS has been updated to more closely fit the ingredients %. The formulation ingredients have not changed.  
**Product does not contain any EU REACH Substances of Very High Concern (SVHC)**

#### 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 applicable

**Flammable Limits:** Not 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. Vacuum solids instead of sweeping. Reduce airborne dust and prevent scattering by moistening with water. Place spilt material in a container and dispose of in accordance with applicable regulations.

## 7. HANDLING AND STORAGE

**Handling** Avoid breathing vapors from heated material. Avoid contact with eyes, skin and clothing.  
**Precautions:** Follow routine safe handling procedures. Use with adequate ventilation.

**Storage Precautions:** Keep away from heat and flame. Store in suitable, tightly capped, 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. Regular shower facilities and industry laundry service may be required. When working with lead containing product follow proper lead work practices.

**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/mild	<b>Melting Point:</b>	Varies
<b>Specific Gravity:</b>	Varies	<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.

<b>Conditions to Avoid:</b>	Not established
<b>Incompatible Materials:</b>	Not established
<b>Hazardous Decomposition / Combustion:</b>	Toxic fumes are emitted at elevated temperatures.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Carcinogenicity:</b>	<b>NTP(National Toxicity Program):</b>	No	
	<b>OSHA (Occupational Safety &amp; Health Administration):</b>	No	
	<b>IARC (International Agency for Research on Cancer):</b>	Yes (Lead and its compounds)	
<b>LD50:</b>	Not established.	<b>LC50:</b>	Not established.
Lead can cause potential harm to the developing fetus.			

## 12. ECOLOGICAL INFORMATION

Product not tested  
Some products contain lead or antimony and a substance that is harmful to the aquatic environment.

## 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 for shipping.

UN – none  
Marine Pollutant: No

## 15. REGULATORY INFORMATION

The information in this Material 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.).

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

WHMIS: 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.

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

SARA 313 Listing - 40 CFR 372.65 – Lead, Antimony and Silver

Ingredient is listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

X<sub>n</sub>

**Risk Phrases:**

- |           |  |
|-----------|--|
| R20/22    | Harmful by inhalation and if swallowed   |
| R36/37/38 | Irritating to eyes, respiratory system and skin  |
| R50/53    | Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment (lead) |
| R51/53    | Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment (antimony)  |
| R33       | Danger of cumulative effects (lead)  |
| R40       | Limited evidence of carcinogenic effect (lead)   |
| R48       | Danger of serious damage to health by prolonged exposure (lead)  |
| R61       | May cause harm to the unborn child (lead)  |

**Safety Phrases:**

- |           |   |
|-----------|---|
| S20/21    | When using do not eat, drink or smoke                             |
| S23       | Do not breathe fumes  |
| S24/25    | Avoid contact with skin and eyes                                  |
| S36/37/39 | Wear suitable protective clothing, gloves and eye/face protection |

## 16. OTHER INFORMATION

<b>HMIS Hazard Rating:</b>	<b>Health:</b>	2
	<b>Fire:</b>	1
	<b>Reactivity:</b>	0

**Revised Date:** 9 OCTOBER 2013

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

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

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**ALLOY TABLE**

% Metal mixed with 2 - 6% flux

Product Identifier	% Tin Sn	% Lead Pb	% Silver Ag	% Copper Cu	% Antimony Sb	RoHS Compliance
Indalloy 116 (50Sn/50Pb)	46.5 - 49	46.5 - 49	-	-	-	No
Indalloy 121 (96.5Sn/3.5Ag)	90.7 - 94.6	-	3.36 - 3.4	-	-	Yes
Indalloy 161 (97.5Pb/2.5Ag)	-	91.7-95.6	2.35—2.45	-	-	Yes**
Indalloy 256 (SAC 305) (96.5Sn/3Ag/0.5Cu)	90.5-94.5	-	2.82-2.94	0.47-0.49	-	Yes
NON STANDARD MIX (91.5Sn/8.5Sb)	86 - 89.7	-	-	-	8 - 8.33	Yes
NON STANDARD MIX (96Sn/4Ag)	90 - 94	-	3.8 – 3.9	-	-	Yes

\*\* High lead exemptions , if taking the exemption