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

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: **INDALLOY WITH FLUXCAKE-301 (CW-301)**

SDS Number: SDS-CW 4327 **Revised Date:** 2 NOVEMBER 2016

Product Use: Industrial Use - Flux cored wire for soldering applications. (See alloy table for metal alloy mix)

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

⊕Eye ⊕Inhalation ⊕Skin ⊕Ingestion

Carcinogen listed in

NTP IARC OSHA ⊕Not Listed

GHS:

lead containing products only

Signal Word: Warning

Hazard statement(s)

H303	May be harmful if swallowed (lead)
H335	May cause respiratory irritation
H351	Suspected of causing cancer (lead)
H361	Suspected of damaging 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)
H410	Very toxic to aquatic life with long lasting effects (lead containing products)
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 + 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 +P 341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351	IF IN EYES: Rinse continuously with water for several minutes (15 mins)
P501	Dispose of contents and containers following applicable regulations.

Classification:

Acute toxicity,- Category 4 (lead)
Specific target organ toxicity- repeated exposure – Category 2
Carcinogenicity (Category 2) (lead)
Reproductive toxicity (Category 2) (lead)
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.

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

Skin Contact: May cause skin irritation.

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.

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.

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

WARNING: Applicable within the State of California Only - 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 of joints in any private or public potable (drinking) 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
		(Singapore)	0.1	-	-
		(Mexico)	0.1	-	0.3
		(China)	0.1	-	0.3
ANTIMONY	*	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	-
RESIN MIX	1.0-5.0	-	N.E.	N.E.	N.E.

N.E. = Not established

* See alloy table

ALLOY TABLE

Metal alloy mixed with resin core (1-5%)

INDALLOY	Lead Pb	Tin Sn	Copper Cu	Antimony Sb	Silver Ag	Indium In	Specific Gravity	RoHS 2 Compliance
104 (Sn62/Pb36/Ag2)	34-35.6	58.9-61	-	-	1.9-1.98	-	8.41	No
106 (Sn63/Pb37)	35-36.6	60-62	-	-	-	-	8.40	No
133 (Sn95/5Sb)	-	90.3-94	-	4.75-4.95	-	-	7.25	Yes
153 Pb85/Sn15	80.8-84	14.3-14.9	-	-	-	-	10.7	Yes*
227 (77.2Sn/20In/2.8Ag)	-	73.3-76.4	-	-	2.66-2.77	19-19.8	7.25	Yes
228 (88Pb/10Sn/2Ag)	83.6 - 87	9.5 - 9.9	-	-	1.9 – 1.98	-	10.75	Yes*
241 (SAC387) (95.5Sn/3.8Ag/0.7Cu)	-	90.7 - 94.5	0.67 - 0.69	-	3.6 - 3.76	-	7.4	Yes
254 (86.7Sn/10In/3.1Ag)	-	82.3-85.8	-	-	2.9-3	9.5-9.9	7.37	Yes
256 (SAC 305) (96.5Sn/3Ag/0.5Cu)	-	91.6-95.5	0.475-0.495	-	2.85-2.97	-	7.40	Yes
Sn 995 (99.5Sn/0.5Cu/<50ppm Co)	-	94.5-98.5	0.475-0.495	-	-	-	7.29	Yes
NON STANDARD ALLOY (96.35Sn/3Ag/0.5Cu/0.15Sb)	-	91.5 - 95.4	0.475-0.495	0.14-0.149	2.85-2.97	-	7.35	Yes

*Review RoHS exemptions (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: Local exhaust ventilation is recommended to keep exposures below established limits and protect operators. Use proper ventilation when working with leaded products.

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 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.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume areas. Follow standard lead work practices when working with lead containing products.

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. Follow applicable lead work practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid metal wire	**Boiling Point:**	Not applicable.
Odor:	Odorless	**Melting Point:**	See table
Specific Gravity:	See table	**pH:**	Not applicable
Vapor Pressure:	Not established	**Solubility in Water:**	Insoluble
Vapor Density:	(air=1) Not applicable.		

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: Yes Lead and lead compounds are listed as possible carcinogens.

LD50: Not established. **LC50:** Not established.

Chronic Toxicity: Lead can cause potential harm to the developing fetus.

12. ECOLOGICAL INFORMATION

Protect 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.

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 (GROUND/IATA/OCEAN).

UN – none
Marine Pollutant: No

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

All ingredients are listed on the EPA TSCA Inventory.

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

Applicable only in the State of California - 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)

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: 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.

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

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).

16. OTHER INFORMATION

HMIS Hazard Rating:	**Health:**	2
	Fire:	1
	Reactivity:	0
Revised Date:	2 NOVEMBER 2016	
Prepared by:	Nancy Swarts, Indium Corporation of America	
Approved by:	Nancy Swarts, Indium Corporation of America	

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