



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

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH INDIUM9.52 FLUX VEHICLE

SDS Number: SDS-410

Revised Date: 23 MAY 2017

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

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

XEye XInhalation XSkin XIngestion NTP IARC OSHA XNot Listed
 See Section 11

Carcinogen listed in

GHS:
 Lead free products:



Signal Word: Warning

Hazard statement(s)

H317 May cause an allergic skin reaction
 H320 Causes eye irritation
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statement(s)

P233 Keep container tightly closed
 P261 Avoid breathing dust/fume/gas/mist/vapours/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
 H320 Causes 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
 H373 May cause damage to organs through prolonged or repeated exposure
 H410 Very toxic to aquatic life with long lasting effects
 EUH201A Warning! Contains lead. Review listing.

Precautionary statement(s)

P233 Keep container tightly closed

P261	Avoid breathing dust/fume/gas/mist/vapours/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)

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: This product contains alloy powder and organic chemicals. May be harmful if swallowed.

Inhalation: Vapors or fumes from this material at typical re-flow temperatures over 100°C may cause local irritation to the respiratory system. When heated rosin may be a respiratory sensitizer.

Skin Contact: May cause skin irritation. Rosin may cause dermatitis. Antimony may cause dermatitis.

Chronic: **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.

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.

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 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 ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
TIN	*	7440-31-5/231-141-8			
		(US)	2	2	-

			(EU)	-	2	4
			(Canada)	-	2	4
			(Singapore)	2	-	-
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)	-
SILVER	*	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	-	-
ANTIMONY	*	7440-36-0	(US)	0.5	0.5	-
			(EU)	0.5	-	-
			(Canada)	-	0.5	1.5
			(Mexico)	N.E.	0.5	-
			(Singapore)	0.5	-	-
			(China)	-	0.5	-
ROSIN	2.5-3.5	65997-05-9	(US)	N.E.	N.E.	N.E.
			(EU)	0.05	N.E.	0.15 (sensitiser)
PROPRIETARY	5.5-13.5			N.E.	N.E.	N.E.

N.E. = Not established *See Alloy Table

%Metal in flux

Indalloy (Metal)	%TIN Sn	%SILVER Ag	%LEAD Pb	%ANTIMONY Sb	RoHS2 Compliance
104(Sn62) (62.5Sn/36.1Pb/	51.9-57.5	1.2-1.8	29.9-33.2	-	NO

1.4Ag)					
106(Sn63) (63Sn/37Pb)	52.3-58	-	30.7-34	-	NO
121 (96.5Sn/3.5Ag)	80.1-88.8	2.9-3.2	-	-	YES
151 (92.5Pb/5Sn/2.5Ag)	4.15-4.6	2.08-2.3	76.8-85.1	-	YES*
228 (88Pb/10Sn/2Ag)	8.3-9.2	1.7-1.8	73.-81	-	YES*
259 (90Sn/10Sb)	74.7-82.8	-	-	8.3-9.2	YES

RoHS 2 = Restriction of Hazardous Substances EU Directive 2011/65/EU(*review list of applicable exemptions that may apply for lead containing). Solder related products are not specifically addressed in the RoHS Directive which is intended for the end product. However, this is indirectly related. It is the customer's responsibility to comply with the particular laws and regulations.

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.

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. Consult Product Data Sheet for additional information.

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 the exposure levels are not exceeded.

Personal protection:

Eyes: Chemical safety glasses/goggles.

Respirator: An authority 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. Face shield for splash hazards.

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.	Boiling Point:	Not applicable.
Odor:	Mild characteristic odor.	Melting Point:	Not applicable
Specific Gravity:	Not applicable.	pH:	Not applicable
Vapor Pressure:	Not applicable.	Solubility in Water:	Insoluble (paste)
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.

Other: Chronic Toxicity: Prolonged or repeated exposure to rosin flux fume may cause workers to develop occupational asthma. Lead can cause potential harm to the developing fetus.

12. ECOLOGICAL INFORMATION

Product mixture 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 Department of Transportation. Non hazardous under all shipping modes (ground/IATA/Ocean).

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.).

California PROP 65: WARNING:

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

SARA 313 Listing - 40 CFR 372.65

Lead CAS# 7439-92-1

Silver CAS# 7440-22-4

Antimony CAS# 7440-36-0

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

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



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

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

This product has been classified under the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2007.

For Compliance with EU Directive 2011/65/EU, Restriction on Hazardous Substances (RoHS 2) - See Alloy Table.

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: 23 MAY 2017

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