



## SAFETY DATA SHEET

This safety data sheet represents a family grouping of all metal mixes that are blended with the same flux. To better serve all of our customers 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.

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** INDALLOY WITH INDIUM6.3

**SDS Number:** SDS- 4664

**Revised Date:** 29 OCTOBER 2021

Version 1.1

**Product Use:** INDUSTRIAL USE (MIXTURE) - WATER WASH SOLDER PASTE WITH 83-92% METAL ALLOY MIXED WITH FLUX. SEE ALLOY TABLE FOR PRODUCTS.

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## 2. HAZARDS IDENTIFICATION

### PRIMARY ROUTES OF ENTRY:

☒Eye ☒Inhalation ☒Skin

☒Ingestion NTP

IARC

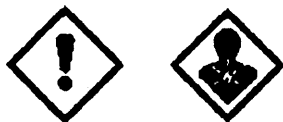
Carcinogen listed in

OSHA ☒Not Listed

\*See Section 11

### GHS

Lead free products:



Signal Word: Warning

### Hazard statement(s)

H316 Causes mild skin irritation

H318 Causes serious eye damage

### Precautionary statement(s)

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+P312 IF SWALLOWED: Call POISON CENTER or doctor/physician if you feel unwell

P302+P352 IF ON SKIN: Wash with plenty of water

P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes (15 mins). Remove contact lenses if present and easy to do - continue rinsing.

P501 Dispose of in accordance with applicable local/state and federal regulations. Recycle when possible.

Lead containing products:

### Classification:

Carcinogen- Category 2

Reproductive toxicity- Category 2

Specific organ toxicity-repeated exposure- Category 2

Acute aquatic toxicity- Category 1

Chronic aquatic toxicity- Category 1

Acute toxicity, serious eye damage- Category 1

Acute toxicity skin irritant- Category 3

Acute toxicity, oral- Category 5



Signal Word: Warning

### Hazard statement(s)

H303 May be harmful if swallowed

H316 Causes mild skin irritation

H318 Causes serious eye damage

H351 Suspected of causing cancer

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

**Precautionary statement(s)**

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+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes (15 mins). Remove contact lenses if present and easy to do - continue rinsing.  
P501 Dispose of in accordance with applicable local/state and federal regulations. Recycle when possible.

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**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 severe eye damage.

**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.

**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.

**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.

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

**BISMUTH:** May cause kidney damage.

Target organs: CNS, blood, kidneys

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



**WARNING:** This product can expose you to chemicals including [lead, trace amounts of propylene oxide] which are known to the State of California to cause cancer and [lead] which can cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**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			
		(US)	2	2	-
		(EU)	-	2	4
		(Singapore)	2	-	-
		(Canada)	N.E.	2	4
<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	N.E.
		(Singapore)	0.1	-	-
<b>LEAD</b>	*	7439-92-1/231-100-4			
		(US)	0.05	0.05	-
		(EU)	-	0.15	-
		(Canada)	0.05	0.05	-
		(Singapore)	0.15	-	-
		(Mexico)	0.15	-	-
		(China)	-	0.05(dust)	-
				0.03(fume)	-
<b>BISMUTH</b>	*	7440-69-9/231-177-4	N.E.	N.E.	N.E.
<b>ALKYL CARBOXYLIC ACID AMIDE</b>	5-8	67700-97-4	N.E.	N.E.	N.E.
<b>CARBOXYLIC ACIDS(C4-11)</b>	2-4	68937-72-4	N.E.	N.E.	N.E.
<b>ETHANOL,2-AMINO, REACTION PRODUCTS WITH AMMONIA</b>	1.0-5.0	68910-05-4	N.E.	N.E.	N.E.

N.E. = Not established

\* See table

**\*ALLOY TABLE****Metal alloy mixed with flux**

<b>ALLOY MIXTURE</b>	<b>% TIN Sn</b>	<b>%SILVER Ag</b>	<b>%BISMUTH Bi</b>	<b>%LEAD Pb</b>	<b>RoHS 2/3 Compliance**</b>
<b>Indalloy 97 (43Sn/43Pb/14Bi)</b>	35.7-40	-	11.6-12.9	35.7-40	No
<b>Indalloy 100 (62.6Sn 37Pb 0.4Ag)</b>	51.9 – 57.6	.33-.37	-	30.7-34.0	No
<b>Indalloy 104 (Sn62/Pb36/Ag2)</b>	51.5-57	1.7-1.8	-	29.9-33	No
<b>Indalloy 106 (Sn63/Pb37)</b>	52.3-58	-	-	30.7-34	No
<b>109 (Sn60/Pb40)</b>	49.8-55.2	-	-	33.2-36.8	No
<b>Indalloy 281 (58Bi/42Sn)</b>	34.9 – 38.6	-	48 – 53.4	-	Yes
<b>Indalloy 282 (57Bi/42Sn/1Ag)</b>	34.9 – 38.6	0.83 – 0.92	47 – 52	-	Yes

\*\*RoHS 2 (2011/65/EU) = Restriction of Hazardous Substances (review applicable exemptions related to lead containing materials)

\*\*RoHS 3- products do not contain any listed phthalates

**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 applicable    **Method:** Not applicable.
- Auto-ignition Temperature:** Not established.
- Flammable Limits:** Limits not established. Not flammable
- Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions, such as water spray, all purpose-type foam, or dry chemical.
- 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:** Wear a respirator and appropriate personal protection (See Exposure Controls/Personal Protective Section). Use spatula, scoop up paste and place in glass or plastic container. Remove traces of paste residue using cloth rags or paper towels moistened with isopropyl alcohol.

Dispose of following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations.

## **7. HANDLING AND STORAGE**

<b>Handling Precautions:</b>	Keep containers tightly closed when not in use. Use care to avoid spills. Avoid breathing vapors from heated material. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation.
<b>Storage Precautions:</b>	Store product in tightly capped original containers in a cool, dry area. Keep away from heat and flame. Store away from incompatible materials. Empty containers may be hazardous as they contain residue.

## **8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>Engineering Controls:</b>	Exhaust ventilation is required to control airborne levels. Use only with production equipment with adequate ventilation and other safety features specifically designed for solder paste. Do not use without proper ventilation.
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### **Personal protection:**

<b>Eyes:</b>	Chemical safety glasses/goggles. Face shield for splash hazards.
<b>Respirator:</b>	An authority approved or compliant marked air-purifying respirator with a fume/organic particulate chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated.
<b>Skin:</b>	Compatible chemical resistant gloves such, as nitrile should be worn. Protective outer garment, apron and sleeves as appropriate.
<b>Other:</b>	Eyewash fountain or safety shower and eyewash unit in work area. Avoid the use of contact lenses.
<b>Work/Hygienic Practices:</b>	Maintain good housekeeping. Clean up spills immediately. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area. Follow standard lead work practices, when applicable.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Grey paste	<b>Boiling Point:</b>	Not established
<b>Odor:</b>	Mild characteristic odor.	<b>Melting Point:</b>	Not available
<b>Specific Gravity:</b>	Not established	<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	Not applicable.	<b>Solubility in Water:</b>	Water Soluble
<b>Vapor Density:</b>	(air=1) Not applicable.		

## **10. STABILITY AND REACTIVITY**

<b>General:</b>	Stable.
<b>Conditions to Avoid:</b>	High temperatures, open flame.
<b>Incompatible Materials:</b>	Not established
<b>Hazardous Decomposition/ Combustion:</b>	Harmful organic fumes and toxic oxide fumes may form at elevated temperatures. (Decomposition products: Carbon dioxide, carbon monoxide)
<b>Hazardous Polymerization:</b>	Will not occur.

**11. TOXICOLOGICAL INFORMATION**

**Carcinogenicity:** NTP: No  
OSHA: CFR1910.1025 (lead)  
IARC: Yes Lead and lead compounds are listed as possible carcinogens.

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

**Other:** Lead can cause potential harm to the developing fetus.

**12. ECOLOGICAL INFORMATION**

Product not tested.

**13. DISPOSAL CONSIDERATION**

**Waste Disposal Method:** Dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Special Waste Regulations. May have reclaim value. Recycle where possible.

**14. TRANSPORT INFORMATION**

Transport in accordance with applicable international regulations and requirements. Not classified as hazardous in shipping under US DOT.

Product is Non - hazardous under all shipping modes.

Not regulated under USDOT/IATA or IMDG.

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.).



**WARNING:** This product can expose you to chemicals including [lead, trace amounts of propylene oxide] which are known to the State of California to cause cancer and [lead] which can cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

SARA 313 Listing - 40 CFR 372.65 (silver, lead, 3.7% proprietary glycol ether)

All ingredients are listed on the EPA TSCA Inventory.

GHS = Globally Harmonized System

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

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

Canadian WHMIS: Class D 2A-Materials Causing Other Toxic Effects-Very Toxic Material (Chronic) (lead)  
Class D 2 – Materials Causing Other Toxic Effects – skin irritant

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

For compliance with EU directive 2011/65/EU, Restriction of Hazardous Substances (RoHS 2) see alloy table.

**16. OTHER INFORMATION**

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

**Revised Date:** 29 OCTOBER 2021**Prepared by:** Marny Kinne, The Indium Corporation of America**Approved by:** Marny Kinne, The Indium Corporation of America

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**Note: This SDS may be translated into an international language. If there is any misinterpretation or misunderstanding of any words or phrases that may occur within any translation the ENGLISH language shall always prevail.**