



## SAFETY DATA SHEET

This safety data sheet represents a family grouping of all metal mixes that are blended with the same flux known as Indium 3.1. A table is provided on page 3 that lists all metal groupings. 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. Unless otherwise stated the health and safety information provided within is applicable to all products.

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** INDALLOY WITH INDIUM 3.1

**SDS Number:** SDS- WS4085

**Revised Date:** 3 DECEMBER 2018

**Product Use:** INDUSTRIAL USE - WATER WASH SOLDER PASTE

#### MANUFACTURER:

##### In America:

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Information: (315) 853-4900  
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**2. HAZARDS IDENTIFICATION****PRIMARY ROUTES OF ENTRY:**

Eye   
  Inhalation   
  Skin   
  Ingestion   
 NTP   
 Carcinogen listed in IARC   
 OSHA   
 Not Listed

GHS:



Signal Word: Warning

**Hazard statement(s)**

H335            May cause respiratory irritation

**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)  
 P501            Dispose of content/containers in accordance with applicable regulations. Do not re-use containers for food stuff.

**Classification:**

Specific organ toxicity, single exposure (respiratory tract irritation)- Category 3

**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 metal alloy powders and organic chemicals.

**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.

**COPPER:** Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever; dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair.

**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.



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

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

**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>COPPER</b>	*	7440-50-8/231-159-6			
		(US)	0.1	0.1 fume	-
		(EU)	-	0.2 fume	-
		(Canada)	-	0.2 fume	0.6
		(Singapore)	0.2 fume	-	-
		(Mexico)	-	0.2 fume	2
(China)	-	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
		(Singapore)	0.5	-	-
		(Mexico)	-	0.5	-
		(China)	-	0.5	-
<b>ROSIN</b>	0.2-4.0	65997-05-9	N.E.	N.E.	N.E.
		(EU)	0.05	-	0.15
<b>ORGANIC AMINE</b>	2-4	(US)	-	5	-
		(Singapore)	5	-	-
<b>PROPRIETARY ACTIVATORS</b>	5.8-9.0	-	N.E.	N.E.	N.E.

N.E. = Not established      \* See alloy table

**ALLOY TABLE**

**%Metal in flux mix (83-92%)**

INDALLOY (METAL)	%TIN Sn	%COPPER Cu	%ANTIMONY Sb	%SILVER Ag	RoHS 2/3* Compliance
121 (96.5Sn/3.5Ag)	80.1-88.8	-	-	2.9-3.2	YES
132 (95Sn/5Ag)	79-87	-	-	4.2-4.6	YES
133 (95Sn/5Sb)	78.9-87.4	-	4.2-4.6	-	YES
241 SAC 387 (95.5Sn/3.8Ag/0.7Cu)	79.3-87.9	0.58-0.64	-	3.2-3.5	YES
244 (99.3Sn/0.7Cu)	82.4-92.4	0.58-0.64	-	-	YES
256 SAC305 (96.5Sn/3Ag/0.5Cu)	80-88.8	0.42-0.46	-	2.5-2.8	YES
Non Standard Alloy 97Sn/2.5Ag/0.5Cu	80.5-89	0.42-0.46	-	2.1-2.3	YES

\*RoHS2 (2011/65/EU) = Restriction of Hazardous Substances (review applicable exemptions)

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

**4. FIRST AID MEASURES**

<b>Eye Contact:</b>	Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention if irritation persists.
<b>Ingestion:</b>	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.
<b>Inhalation:</b>	Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.
<b>Skin Contact:</b>	Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

**5. FIRE FIGHTING MEASURES**

<b>Flash Point:</b>	Not applicable	<b>Method:</b>	Not applicable
<b>Auto-ignition Temperature:</b>	Not established.		
<b>Flammable Limits:</b>	Limits not established		
<b>Extinguishing Media:</b>	Use extinguishers appropriate for the surrounding fire conditions. Foam, dry chemical, water spray.		
<b>Special Fire Fighting Procedures:</b>	Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.		

**6. ACCIDENTAL RELEASE MEASURES**

<b>Spill or Leak Procedures:</b>	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.
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**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 product residue.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>Engineering Controls:</b>	Local exhaust ventilation is necessary to control airborne levels. Use only with production equipment with adequate ventilation and other safety features specifically designed for solder paste.
<b>Personal protection:</b>	
<b>Eyes:</b>	Chemical safety glasses/goggles. Face shield for splash hazards.
<b>Respirator:</b>	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.
<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.

**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 applicable
<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

<b>Carcinogenicity:</b>	<b>NTP:</b> No
	<b>OSHA:</b> No
	<b>IARC:</b> No
	Product is not classified as a carcinogen.

<b>LD50:</b>	Not established.	<b>LC50:</b>	Not established.
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**Other:** Prolonged or repeated exposure to rosin flux may cause workers to develop occupational asthma.

Product contains 0.06-0.13% of a substance classified under GHS as a Category 2 carcinogen and 0.06-0.13% of a substance classified as a Category 1B reproductive toxicant.

## 12. ECOLOGICAL INFORMATION

Product not tested.

## 13. DISPOSAL CONSIDERATION

<b>Waste Disposal Method:</b>	Dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Special Waste Regulations. May have reclaim value.
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## 14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements.

Not classified as hazardous in shipping under regulations.

UN- none

North American Emergency Guide Book – Not classified

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 such as [trace amounts of lead, propylene oxide] which are known to the State of California to cause cancer and [trace amounts of 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, copper, antimony)

All ingredients are 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.

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.

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)

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

Canadian WHMIS: D2B Materials Causing Other Toxic Effects -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 2002/95/EC, Restriction of Hazardous Substances (RoHS) see alloy table.

GB/T 16483-2008, GB/T 17517-2013

**16. OTHER INFORMATION**

<b>HMIS Hazard Rating:</b>	<b>Health:</b>	1
	<b>Fire:</b>	0
	<b>Reactivity:</b>	0
<b>Revised Date:</b>	3 DECEMBER 2018	
<b>Prepared by:</b>	Nancy Swarts, Indium Corporation of America	
<b>Approved by:</b>	Nancy Swarts, Indium Corporation of America	

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