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 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:** 6 JANUARY 2014

Product Use: INDUSTRIAL USE - WATER WASH SOLDER PASTE

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

✓Eye ✓Inhalation ✓Skin ✓Ingestion

Carcinogen listed in

NTP IARC OSHA ✓Not Listed

GHS:

use for antimony containing product

Signal Word: Warning

Hazard statement(s)

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H320	Causes eye irritation
H335	May cause respiratory irritation
H401+H413	Toxic to aquatic life, may cause long lasting harmful effects to aquatic life (antimony)
EUH208	Contains rosin. May produce an allergic reaction

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

Skin irritant – Category 2

Eye irritant – Category 2B

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. Harmful if swallowed. May cause burns to the digestive tract and systematic effects.

Inhalation: Vapors or fumes from this material at typical re-flow temperatures over 100°C may cause local irritation to the respiratory system. Harmful if inhaled. Rosin may cause sensitization by inhalation.

Skin Contact: May cause skin irritation. Allergic reactions are possible, especially with repeated or prolonged exposure.

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.

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

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

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
		(Singapore)	2	-	-
		(Canada)	N.E.	2	4
SILVER	*	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	-	-
COPPER	*	7440-50-8/231-159-6			
		(US)	0.1	0.1fume	-
		(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

ANTIMONY	*	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	-
ROSIN	0.2-4.0	65997-05-9	N.E.	N.E.	N.E.
		(EU)	0.05	-	0.15
ORGANIC AMINE	2-4	(US)	-	5	-
		(Singapore)	5	-	-
PROPRIETARY ACTIVATORS	5.8-9.0		N.E.	N.E.	N.E.

PRODUCT DOES NOT CONTAIN ANY EU REACH SUBSTANCES OF VERY HIGH CONCERN (SVHC)

Symbol: Xi Risk Phrases: R36/37/38, R42/43
N.E. = Not established * See alloy table

ALLOY TABLE

%Metal in flux mix

INDALLOY (METAL)	%TIN Sn	%COPPER Cu	%ANTIMONY Sb	%SILVER Ag	RoHS 2* 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)

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 applicable **Method:** Not applicable

Auto-ignition Temperature: Not established.

Flammable Limits: Limits not established

Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions. Foam, dry chemical, water spray.

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

Handling Precautions: 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.

Storage Precautions: 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

Engineering Controls: 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.

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.

Skin: Compatible chemical resistant gloves such, as nitrile should be worn. Protective outer garment, apron and sleeves as appropriate.

Other: Eyewash fountain or Safety shower and eyewash unit in work area. Avoid the use of contact lenses.

Work/Hygienic Practices: 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

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

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:
NTP: No
OSHA: No
IARC: No
Product is not classified as a carcinogen.

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

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

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.

14. TRANSPORT INFORMATION

Transport in accordance with applicable 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 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 Mexican regulations: NOM – 018-STPS-2000 and NOM-010-STPS-1999.

This product has been classified using the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace GBZ2-2002.

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.

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

SARA 313 Listing - 40 CFR 372.65 (silver, copper, antimony)

All ingredients are listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

XI

Risk Phrases:

R36/37/38 Irritating to eyes, respiratory system and skin

R42/43 May cause sensitization by inhalation and by skin contact

Safety Phrases:

S20/21	When using do not eat, drink or smoke
S23	Do not breathe fumes/gas/vapor/spray
S24/25	Avoid contact with skin and eyes
S7	Keep container tightly closed

16. OTHER INFORMATION

HMIS Hazard Rating:	**Health:**	2
	Fire:	0
	Reactivity:	0
Revised Date:	6 JANUARY 2014	
Prepared by:	Nancy Swarts, Indium Corporation of America	
Approved by:	Nancy Swarts, Indium Corporation of America	

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