



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

This material 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 MSDS, 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

MSDS Number: MSDS- WS4085

Revised Date: 13 AUGUST 2009

Product Use: INDUSTRIAL USE - WATER WASH SOLDER PASTE

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

✓Eye ✓Inhalation ✓Skin ✓Ingestion NTP

Carcinogen listed in

IARC OSHA ✓Not Listed

GHS:



Warning Word: Warning (lead free with rosin)

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 mild 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). (ethylene oxide, 1, 4 dioxane, acetaldehyde and trace levels of lead.

2. 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
		(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	0.1 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
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 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* 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 (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 (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

RoHS = Restriction of Hazardous Substances (review applicable exemptions)

<http://www.pbfree.com>

http://europa.eu.int/comm/environment/waste/weee_index.tm

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**

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.

Precautions:**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.

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.

Practices:

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.		

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.

North American Emergency Guide Book – Not classified

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.).

The information in this Material Safety Data Sheet meets the requirements of the EU under Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 (CHIP 2) Regulation 6.

This product has been classified in accordance with the hazard criteria of the Commission Directive 91/155/EEC and EH40.

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.

California Prop 65- California Safe Drinking Water Standard: This product may contain a chemical(s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (ethylene oxide, 1, 4 dioxane, acetaldehyde, trace levels of listed metals).

SARA 313 Listing - 40 CFR 372.65 (ethylene oxide, 1, 4 dioxane, acetaldehyde, silver, copper)

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: 1
 Reactivity: 0

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