

# INDIUM CORPORATION OF AMERICA ®\EUROPE®\ASIA-PACIFIC® INDIUM CORPORATION (SUZHOU) ®

This safety data sheet represents a family grouping of all metal mixes that are blended with the same flux. A table is provided that lists all metal groupings. To better serve all of our customers and reduce paperwork 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.

# SAFETY DATA SHEET

# 1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH INDIUM 6.8 FLUX VEHICLE

MSDS Number: MSDS-989 Revised Date: 21 SEPTEMBER 2009

Product Use: Industrial Use - Water wash solder paste consisting of a flux vehicle blended with an 83-92 %

pre-alloyed metal powder.

#### MANUFACTURER:

In America:

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#### 2. HAZARDS IDENTIFICATION

# **PRIMARY ROUTES OF ENTRY:**

#### **CARCINOGEN LISTED IN:**

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

GHS:



# **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 may contain lead alloy powder and organic chemicals. Harmful if swallowed. May

cause systematic lead poisoning and burns to the digestive tract. Symptoms of lead poisoning include headache, nausea, abdominal pain, muscle and joint pain and damage to the nervous

system, blood system and kidneys.

**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 or 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.

**TIN**: Has been shown to increase incidence of sarcoma in animal tests.

**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.

Warning: This product contains a chemical known to the State of California to cause cancer and/or

birth defects (or other reproductive harm). (Contains trace levels of ethylene oxide, 1, 4 dioxane

and acetaldehyde), lead. Applicable in California.

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.

Components	% wt	CAS Registry #	<b>PEL</b> mg/m³	TLV-TWA mg/m³	TLV-STEL mg/m³		
TIN	*	7440-31-5 (US)	2	2	-		
		(EU)	-	2	4		
		(Canada)	-	2	4		
		(Singapore)	2	-	<del>_</del>		
LEAD	*	7439-92-1 (US)	0.05	0.05	-		
		(EU)	-	0.15	-		
		(Canada)	-	0.05	-		
		(Mexico)	0.15	-	-		
		(Singapore)	0.15	N.E.	N.E.		
		(China)	-	0.05(dust)	-		
			-	0.03(fume)	<u>-</u>		
SILVER	*	7440-22-4(US)	0.01	0.1	-		
		(EU)	-	0.1	-		
		(Canada)	-	0.1	0.3		
		(Mexico)	0.1	-	-		
		(Singapore)	0.1	-	<u>-</u>		
ROSIN	3.0-4.0	65997-05-9 (US)	N.E.	N.E.	N.E.		
		(EU)	0.05	-	0.15 (sensitiser)		
PROPRIETARY	2.0-2.5	- (US)		E			
	2.0-2.5	, ,	_	5	-		
		(Singapore)	5	<del>-</del>	<del>-</del>		
POLYGLYCOL ETHER	1 – 4	9038-95-3	N.E.	N.E.	N.E.		
PROPRIETARY ACTIVATORS	2.0-6.5	-	N.E.	N.E.	N.E.		
Symbol: X <sub>n</sub>	Risk Phrases: R20/21/22, R36/37/38						
N.E. = Not established	* See alloy table						

# **Alloy Table**

#### Metal Mixed with Flux

INDALLOY	%TIN	%LEAD	%SILVER	RoHS* Compliance	
100 Sn62.6/Pb37/Ag 0.4	52.0-57.6	30.7-34.0	0.33-0.37	No	
104 Sn62/Pb36/Ag2	51.9-57.5	29.9-33.2	1.2-1.8	No	
106 Sn63/Pb37	52.3-58	30.7-34	-	No	

# \*RoHS = Restriction on Hazardous Substances (Review directive for applicable exemptions that may apply)

- http://europa.eu.int/comm/environment/waste/weee\_index.tm
- http://www.pbfree.com

# 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 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** Firefighters must wear NIOSH approved self-contained breathing apparatus and full

**Procedures:** 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. 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. Use only with

**Precautions:** 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.

# 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 their exposure levels

are not exceeded. Other applications use proper ventilation.

Personal protection:

**Eyes:** Chemical safety glasses/goggles. Face shield for splash hazards.

**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.

Other: Lab coat, eyewash fountain in work area. Avoid the use of contact lenses in high fume areas.

Work/Hygienic Maintain good housekeeping. Clean up spills immediately. Do not allow rags or

**Practices:** 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. Follow proper

lead work practices if applicable.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:Grey colored paste.Boiling Point:Not applicable.Odor:Mild characteristic odor.Melting Point:Not applicable

Specific Gravity: 1 g/cc pH: 4 - 8

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 / Harmful organic fumes and toxic oxide fumes may form at elevated

Combustion: temperatures.

Hazardous Polymerization: Will not occur.

# 11. TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP: No

**OSHA:** No (29CFR 1910.1025)

**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

This section is subject to future development. Product 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. In Europe follow the Special Waste Regulations.

# 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements. Not regulated (Department of Transportation). North American Emergency Guide Book – Not classified

Non hazardous for shipping.

# 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 hazard criteria of the Mexican regulations NOM-018-STPS-2000 and NOM-010-STPS-1999.

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 using the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2002.

California PROP 65 (Safe Drinking Water Act): Applicable in California WARNING:

This product contains a chemical (s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (lead, trace levels of ethylene oxide, 1,4 dioxane, acetaldehyde)

SARA 313 Listing - 40 CFR 372.65

Lead CAS# 7439-92-1/ Silver CAS#7440-22-4/ Ethylene Oxide CAS#75-21-8 / 1, 4 Dioxane CAS# 123-91-1 / Acetaldehyde CAS# 75-07-0

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

All ingredients are listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

 $X_n$ 

#### **Risk Phrases:**

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

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

#### **Safety Phrases:**

S20/21 When using do not eat, drink or smoke

S23 Do not breathe fumes

S24/25 Avoid contact with skin and eyes

S27 Take off immediately all contaminated clothing

S28 After contact with skin wash immediately with plenty of soap and water

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection

# 16. OTHER INFORMATION

HMIS Hazard Rating: Health: 2

Fire: 1 Reactivity: 0

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