



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

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH INDIUM3.1AF FLUX VEHICLE

MSDS Number: MSDS- 4332

Revised Date: 27 APRIL 2010

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:

The Indium Corporation of America
1676 Lincoln Ave., Utica NY 13502
Information: (315) 853-4900
nswarts@indium.com

EMERGENCY PHONE:

CHEMTREC 24 hrs.

USA: 1 (800) 424-9300

Outside USA: 1 (703) 527-3887

In Europe:

Indium Corporation of Europe
7 Newmarket Ct.
Kingston, Milton Keynes, UK, MK 10 OAG
Information: +44 [0] 1908 580400

In China:

Indium Corporation (Suzhou), Co. Ltd.
No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
Unit No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900

In Asia:

Asia-Pacific Operations-Singapore
29 Kian Teck Avenue
Singapore 628908
Information: +65 6268-8678

2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

⊗ Eye

⊗ Inhalation

⊗ Skin

⊗ Ingestion

NTP

Carcinogen listed in

IARC

OSHA

⊗Not 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 contains metal alloy powder and organic chemicals. Harmful if swallowed.
- Inhalation:** Vapors or fumes from this material at typical re-flow temperatures over 100°C may cause local irritation to mucous membranes and the upper respiratory tract. Rosin may cause occupational asthma.
- Skin Contact:** May cause skin irritation or dermatitis.
- Chronic:** **TIN:** Has been shown to increase incidence of sarcoma in animal tests.
- 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 of copper may cause metal fume fever (chills, muscle aches, nausea, fever; dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair.
- Warning:** This product contains chemical (s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (Includes trace levels of ethylene oxide, acetaldehyde 1, 4 dioxane and lead not intentionally added)
- 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 #	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
TIN	*	7440-31-5 (US)	2	2	-
		(EU)	-	2	4
		(Canada)	-	2	4
		(Singapore)	2	-	-
SILVER	*	7440-22-4 (US)	0.01	0.01	N.E.
		(EU)	-	0.1	-
		(Canada)	-	0.1	0.3
		(Mexico)	-	0.1	-
		(Singapore)	0.1	-	-

COPPER	*	7440-50-8 (US)	0.1	0.2	-
		(EU)	-	0.2	2
		(Canada)	-	0.2	0.6
		(Singapore)	0.2	1(dust)	-
		(Mexico)	-	0.2	2
		(China)	-	0.2(fume)	0.6
		-	1(dust)	2.5	
ROSIN	0.2-4.0	65997-05-9	N.E.	N.E.	N.E.
		(EU)	0.05	-	0.15
ORGANIC AMINE	2 - 4	(US)	N.E.	5	N.E.
		(Singapore)	5	-	-
PROPRIETARY ACTIVATORS	5.8 – 9.0	-	N.E.	N.E.	N.E.

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

* See alloy table, pg 7

Symbol: XI

Risk Phrases: R36/37/38, R42/43

N.E. = Not established

EU = European Union Occupational Exposure Limits

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 Procedures:** Firefighters must wear NIOSH approved self-contained breathing apparatus and full 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. Wear proper personal protective equipment during clean up.

7. HANDLING AND STORAGE

Handling Precautions: Keep containers tightly closed when not in use. Use care to avoid spills. Use only with 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 they're permissible exposure levels are not exceeded.

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 (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 Practices: Maintain good housekeeping. Clean up spills immediately. Do not allow rags or 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey colored paste.

Odor: Mild characteristic odor.

Specific Gravity: Not applicable.

Vapor Pressure: Not applicable.

Vapor Density: (air=1) Not applicable.

Boiling Point: Not applicable.

Melting Point: Not applicable

pH: Not applicable

Solubility in Water: Soluble

10. STABILITY AND REACTIVITY

General:	Stable.
Conditions to Avoid:	Not established.
Incompatible Materials:	Avoid contact with acids, bases or oxidizing agents.
Hazardous Decomposition /	Harmful toxic oxide fumes may form at elevated temperatures. CO/CO ₂ /HBr
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:	NTP: No
	OSHA: No
	IARC: No

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).
Non hazardous under shipping regulations.

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 Canadian Controlled Products Regulation (CPR).

Canadian WHMIS:



D2B –Materials Causing Other Toxic Effects (irritant or sensitizer)

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 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.

California PROP 65: WARNING:

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

SARA 313 Listing - 40 CFR 372.65

Ethylene Oxide CAS# 75-21-8

Silver CAS# 7440-22-4

1, 4 Dioxane CAS# 123-91-1

Copper CAS# 7440-50-8

Acetaldehyde CAS# 75-07-0

All ingredients in this product are listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

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Risk Phrases:

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

R42/43 May cause sensitization by inhalation and skin contact

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

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

S62 If swallowed, do not induce vomiting seek medical advice immediately and show container or label

S7 Keep container tightly closed

16. OTHER INFORMATION

HMIS Hazard Rating:

Health:	2
Fire:	1
Reactivity:	0

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Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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Note: This MSDS 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.

ALLOY TABLE

Metal alloy mix with flux

INDALLOY	%TIN Sn	%SILVER Ag	%COPPER Cu	RoHS* Compliance
256 (Sn96.5/Ag3.0/Cu0.5)	80.1- 88.8	2.5-2.8	0.42-0.46	YES
Non Standard (96Sn/4Ag)	79.7- 88.3	3.3-3.7	-	YES
Non Standard 99.3Sn/0.7Cu)	82.4- 91.4	-	0.58-0.64	YES

*RoHS = Restriction of Hazardous Substances EU Directive 2002/95/EC Solder related products are not directly related to the regulations. It is the customer's responsibility to ensure compliance. Review any applicable exemptions that may apply.

<http://www.pbfree.com>

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