



**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. A table is provided starting on page 4 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. Review any additional information that may be specific to the country where this is used.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH SR-075 FLUX VEHICLE

MSDS Number: MSDS-5008

Revised Date: 4 JUNE 2009

Product Use: Industrial Use - No-clean solder paste consisting of a flux vehicle blended with a 83-92 % pre-alloyed metal powder.

MANUFACTURER:

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

⊗Eye ⊗Inhalation ⊗Skin ⊗Ingestion

Carcinogen listed in

NTP IARC* OSHA ⊗Not Listed

GHS:



Warning Word: Danger (lead)

* See Section 11

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 mild skin irritation.
- 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.
- 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.
- TIN: Has been shown to increase incidence of sarcoma in animal tests.

WARNING: This product may contain a chemical(s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (lead)

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.

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)	N.E.	2	4
			(Canada)	N.E.	2	4
			(Singapore)	2	-	-
LEAD	*	7439-92-1/231-100-4	(US)	0.05	0.05	-
			(EU)	N.E.	0.15	N.E.
			(Canada)	0.05	0.05	N.E.
			(Singapore)	0.15	-	-
			(Mexico)	0.15	-	-
			(China)	-	0.05(dust) 0.03(fume)	-
COPPER	*	7440-50-8/231-159-6	(US)	0.1 (fume)	0.2 (fume)	-
			(EU)	-	0.2 (fume)	-
			(Canada)	-	0.2 (fume)	0.6 (fume)
			(Mexico)	-	0.2 (fog)	2 (powder)
			(Singapore)	0.2(fume)	1(dust)	-
			(China)	-	1(dust) 0.2(fume)	2.5 0.6
SILVER	*	7440-22-4/231-131-3	(US)	0.01	0.1	N.E.
			(EU)	N.E.	0.1	N.E.
			(Canada)	N.E.	0.1	0.3
			(Singapore)	0.1	-	-
			(Mexico)	0.1	-	-
POLYGLYCOL ETHER	4.5-5.5	9038-95-3	N.E.	N.E.	N.E.	
CARBOXYLIC ACID	0.5-1.0	-	N.E.	N.E.	N.E.	

PROPRIETARY	3-10.5	-	N.E.	N.E.	N.E.
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Symbol: X_n Risk Phrases: R20/21/22, R36/37/38, R42
 N.E. = Not established *See Alloy Table

Alloy Table

Metal mixed with flux

Indalloy	%Tin Sn	%Silver Ag	%Lead Pb	%Copper Cu	RoHS*
106 (63Sn/37Pb)	52.3-58.0	-	30.7-34.0	-	NO
115 55Sn/44Pb/1Ag	45.7-50.6	0.83-0.92	36.5-40.5	-	NO
121 (96.5ASn/3.5Ag)	80.1-88.8	29.1-3.2	-	-	YES
132 (95Sn/5Ag)	79-87.4	4.2-4.6	-	-	YES
151 (92.5Pb/5Sn/2.5Ag)	4.2-4.6	2.1-2.3	76.8-85.1	-	YES High lead exemption
246 (95.5Sn/4Ag/0.5Cu)	79-88.8	3.3-3.7	-	0.42-0.46	YES

NS = Non Standard Alloy-

***RoHS = Restriction of Hazardous Substances EU Directive 2002/95/EC review any applicable exemptions that may apply.**

Visit:

<http://www.pbfree.com> or <http://www.indium.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 established. **Method:** Not established.

Auto-ignition Temperature: Not established.

Flammable Limits: Limits not established, not flammable. **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 of 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 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 exhaust ventilation and other safety features specifically designed for use with solder paste. Control concentration of all components so that the exposure levels are not exceeded. Use exhaust ventilation.

Personal protection:

Eyes: Chemical safety glasses/goggles.

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, eye-wash 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. When working with lead containing product observe OSHA/EU or other countries established lead work practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Grey colored paste.	Boiling Point:	Not applicable.
Odor:	Mild characteristic odor.	Melting Point:	Not applicable
Specific Gravity:	0.92	pH:	Not applicable
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 / Combustion:	Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:	NTP: No		
	OSHA: No		
	IARC: Yes	Lead and lead compounds are listed as possible carcinogens.	
LD50:	Not established.	LC50:	Not established.
Other:	Chronic Toxicity: Lead can cause potential harm to the developing fetus.		

12. ECOLOGICAL INFORMATION

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.
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14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements. Not regulated under US DOT (United States Department of Transportation). Not 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 Mexican regulations, NOM-018-STPS-2000 and NOM-101-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) (lead)



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.

For compliance with EU Directive 2002/95/EC, Restriction of Hazardous Substances (RoHS) see Alloy Table.

Philippines Inventory of Chemicals and Chemical Substances – 2000 [$< 5\%$ ingredients not listed]

California PROP 65 Safe Drinking Water Standard: WARNING:

This product contains a chemical(s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm).

SARA 313 Listing - 40 CFR 372.65

Lead CAS# 7439-92-1

Silver CAS# 7440-22-4

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

R42 May cause sensitization by inhalation

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
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S28	After contact with skin wash immediately with plenty of soap and water
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
	Physical Hazards:	0

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