



**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 known as WMA-SMQ 69HT. A table is provided 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.

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH WMA-SMQ69HT FLUX VEHICLE

SDS Number: SDS-IN 255

Revised Date: 22 FEBRUARY 2016

Product Use: Industrial Use - Water-soluble mildly activated solder paste consisting of a flux vehicle blended with 83-92 weight percent pre-alloyed metal powder. See alloy table for metal mixes.

MANUFACTURER:

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

√Eye √Inhalation √Skin √Ingestion

NTP

Carcinogen listed in

IARC OSHA √Not Listed

GHS



for lead containing

Signal Word: Warning

Hazard statement(s)

- H303 May be harmful if swallowed (lead)
- H319 Causes serious eye irritation
- H335 May cause respiratory irritation
- H351 Suspected of causing cancer (lead)
- H361 Suspected of damaging fertility or the unborn child (applicable to lead containing product)
- H373 May cause damage to organs through prolonged or repeated exposure (applicable to lead containing product)
- H410 Very toxic to aquatic life with long lasting effects (lead)
- EUH201A Warning! Contains lead (applicable only to the products listed that contain lead) Review listing.

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 in accordance with applicable local/state and federal laws. Recycle when possible.

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact with material at room temperature or fume from material at typical re-flow temperatures over 100°C can cause serious eye irritation.

Ingestion: This product contains metal alloy powder and organic chemicals. May be harmful if swallowed.

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. **ANTIMONY** has been known to cause dermatitis.

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.

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

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.

INDIUM: May cause damage to respiratory system.

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.

WARNING: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (Listed lead and trace levels not intentionally added).

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 of joints in any private or public potable (drinking) water supply system. Keep out of the reach of children.

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
		(Singapore)	2	-	-
		(Canada)	-	2	4
SILVER	*	7440-22-4 (US)	0.01	0.1	-
		(EU)	-	0.1	-
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(Mexico)	0.1	-	-
COPPER	*	7440-50-8 (US)	0.1 (fume)	0.2 (fume)	-
		(EU)	-	0.2 (fume)	-
		(Singapore)	0.2(fume)	1(dust)	-
		(Canada)	-	0.2 (fume)	0.6 (fume)
		(China)	-	0.2(fume)	0.6

		(Mexico)	0.2	-	-
INDIUM	*	7440-74-8 (US)	0.1	0.1	-
		(EU)	-	0.1.	0.3
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(China)	-	0.1	0.3
		(Mexico)	0.1	-	-
ANTIMONY	*	7440-36-0 (US)	0.5	0.5	-
		(EU)	0.5	-	-
		(Canada)	-	0.5	1.5
		(Singapore)	0.5	-	-
		(China)	-	0.5	-
		(Mexico)	0.5	-	-
LEAD	*	7439-92-1 (US)	0.05	0.05	-
		(EU)	-	0.15	-
		(Canada)	-	0.05	-
		(Singapore)	0.15	-	-
		(China)	-	0.05(dust) 0.03(fume)	-
		(Mexico)	0.15	-	-
ALCOHOLS	4.0-8.5	68475-56-9	N.E.	N.E.	N.E.
PROPRIETARY	4.0-8.5	-	N.E.	N.E.	N.E.

N.E. = Not established *See Alloy Table

ALLOY TABLE

%metal mixed with flux

INDALLOY (metal mixture)	RoHS Compliance RoHS 2 (2011/65/EU)	%TIN Sn	%LEAD Pb	%GOLD Au	%COPPER Cu	%SILVER Ag	%INDIUM In	%ANTIMONY Sb
104(Sn62) (62.5Sn/36.1Pb /1.4Ag)	No	51.9-57.5	29.2-33.2	-	-	1.2-1.8	-	-
106 (Sn63) (63Sn/36Pb)	No	52.3-58	30.7-34	-	-	-	-	-
118 (90Sn/10Pb)	No	74.7-82.8	8.3-9.2	-	-	-	-	-
121 (96.5Sn/3.5Ag)	Yes	80.1-88.8	-	-	-	2.9-3.2	-	-
127 60Pb/37Sn/3Ag	No	30.7-34.0	49.8-55.2	-	-	2.5-2.8	-	-
128 (100Sn)	Yes	83-92	-	-	-	-	-	-
130 (60Pb/40Sn)	No	33.2-36.8	49.8-55.2	-	-	-	-	-
131 (97Sn/3Sb)	Yes	80.5-89.2	-	-	-	-	-	2.5-2.8
132 (95Sn/5Ag)	Yes	78.9-87.4	-	-	-	4.2-4.6	-	-
133 (95Sn/5Sb)	Yes	78.9-87.4	-	-	-	-	-	4.2-4.6
143 (90Pb/10Sb)	Yes	-	74.7-82.8	-	-	-	-	8.3-9.2
145 (75Pb/25Sn)	No	20.8-23	62.3-69	-	-	-	-	-
151 (92.5Pb/5Sn/2. 5Ag)	Yes	4.2-4.6	76.8-85.0	-	-	2.0-2.3	-	-
159 (90Pb/10Sn)	Yes	8.3-9.2	74.7-82.8	-	-	-	-	-
160 (97Sn/3Cu)	Yes	80.5-89.2	-	-	2.5-2.8	-	-	-
164 92.5Pb/5In/2.5 Ag	Yes	-	76.8-85.1	-	-	2.1-2.3	4.2-4.6	-

INDALLOY (metal mixture)	RoHS Compliance	%TIN Sn	%LEAD Pb	%GOLD Au	%COPPER Cu	%SILVER Ag	%INDIUM In	%ANTIMONY Sb
165 (97.5Pb/1.5Ag/ 1Sn)	Yes	0.8-0.9	80.9-89.7	-	-	1.2-1.4	-	-
171 (95Pb/5Sn)	Yes	4.2-4.6	78.9-87.4	-	-	-	-	-
182 (80Au/20Sn)	Yes	16.6-18.4	-	66.4-73.6	-	-	-	-
228 88Pb/10Sn/2Ag	Yes	8.3-9.2	73.0-81.0	-	-	1.7-1.8	-	-
233 85Pb/10Sb/5Sn	No	4.2-4.6	70.6-78.2	-	-	-	-	8.3-9.2
241 (SAC387) (95.5Sn/3.8Ag/ 0.7Cu)	Yes	79.3-87.9	-	-	0.58-0.64	3.2-3.5	-	-
254 (86.9Sn/10In/3. 1Ag)	Yes	72-80	-	-	-	2.57-2.85	8.3-9.3	-
NS (90Sn/10Sb)	Yes	74.7-82.8	-	-	-	-	-	8.3-9.2
NS (91.5Sn/8.5Sb)	Yes	75.9-84.2	-	-	-	-	-	7.1-7.8
NS (93.5 Pb/5Sn/1.5Ag)	Yes	4.2-4.6	77.6-86	-	-	1.2-1.4	-	-

RoHS Compliance =Restriction of Hazardous Substances

Review for any applicable exemptions that may apply.

NS= Non Standard Alloy

4. FIRST AID MEASURES

- Eye Contact:** Hold eyelids apart and flush eyes with plenty of tepid 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 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 (such as 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 the permissible exposure levels are not exceeded.
- 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, 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. If using lead containing product always follow proper lead worker policies.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Grey colored paste.	Boiling Point:	Not available.
Odor:	Mild characteristic odor.	Melting Point:	Not available
Specific Gravity:	Not available.	pH:	Not applicable
Vapor Pressure:	Not available.	Solubility in Water:	water soluble (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	
LD50:	Not established.	LC50:	Not established.
Other:	Chronic Toxicity: Lead can cause potential harm to the developing fetus.		
Product mixture not tested.			

12. ECOLOGICAL INFORMATION

Product mixture not tested.

Contains substances that are harmful to the environment. (lead)

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.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements. Not regulated under US DOT (United States Department of Transportation).

Non - hazardous under shipping regulations (USDOT/IATA/IMDG).

North American Emergency Guide Book – Not listed or categorized.

UN – none

Marine Pollutant: No

15. REGULATORY INFORMATION

The information in this 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 hazard criteria of the Canadian Controlled Products Regulation (CPR).



WHMIS: D2A - Materials Causing Other Toxic Effects - Very Toxic Material (Chronic). Otherwise not classified.

This product has been classified in accordance with Mexican regulations; NOM-018-STPS-2000 and NOM-010-STPS-2014.

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: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS).

SARA 313 Listing - 40 CFR 372.65
Silver CAS# 7440-22-4
Antimony CAS# 7440-36-0

Copper CAS# 7440-50-8
Lead CAS# 7439-92-1

All ingredients are listed on the EPA TSCA Inventory.

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

Most of the ingredients are listed on the Canadian Domestic Substance List.

California PROP 65: WARNING: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (Listed lead and trace levels not intentionally added) .

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

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	2
	Fire:	1
	Reactivity:	0

Revised Date: 22 FEBRUARY 2016

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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