



SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier: INDALLOY WITH RSA FLUX

SDS Number: SDS-4115

Revised Date: 16 APRIL 2020

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use: Industrial Use (mixture) - Alloy coated with flux. See alloy table for all metal combinations with flux..

1.3 Details of the supplier of the safety data sheet

MANUFACTURER/SUPPLIER/IMPORTER:

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The Indium Corporation of America®.

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1.4 Emergency Telephone Number

FOR CHEMICAL EMERGENCY ONLY PHONE *:**CHEMTREC 24 hrs.****USA: 1 (800) 424-9300****Outside USA: +1 (703) 527-3887***** Used only for spill/leak/fire/exposure/accident****In China: Emergency 86+ 4008417580****ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation****SECTION 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture**

Skin sensitizer-Category 1B

Respiratory sensitizer-Category 1B

Eye irritation-Category 2A

Carcinogenicity (Category 2) (lead)

Carcinogenicity (Category 1B) (cadmium)

Acute toxicity, Inhalation (Category 2)

Reproductive toxicity (Category 2) (lead) (cadmium)

Specific target organ toxicity-repeated exposure (Category 1)

Acute toxicity, oral (Category 4)

Germ cell mutagenicity (Category 2) (cadmium)

Acute aquatic toxicity – Category 1 for lead / cadmium containing products (H400)

Chronic aquatic toxicity – Category 1 for lead containing products (H410)

*Review the alloy table for applicable information

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Lead/cadmium free products



Warning Word: Warning

Hazard statement(s)

H317 May cause an allergic skin reaction

H319 Causes serious eye irritation

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statement(s)

P233 Keep container tightly closed

P261 Avoid breathing dust/fume/gas/mist/vapours/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 + P364 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)

Lead containing products



Warning Word: Warning

Hazard statement(s)

H302 Harmful if swallowed
 H317 May cause an allergic skin reaction
 H319 Causes serious eye irritation
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H332 Harmful if inhaled
 H351 Suspected of causing cancer
 H361 Suspected of damaging fertility or the unborn child
 H373 May cause damage to organs (blood/kidneys/CNS) through prolonged or repeated exposure
 H410 Very toxic to aquatic life with long lasting harmful effects

Precautionary statement(s)

P233 Keep container tightly closed
 P261 Avoid breathing dust/fume/gas/mist/vapours/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 + P364 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)

Cadmium/lead containing products



Warning Word: Danger

Hazard statement(s)

H301 Toxic if swallowed
 H330 Fatal if inhaled
 H317 May cause an allergic skin reaction
 H319 Causes serious eye irritation
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
 H332 Harmful if inhaled
 H341 Suspected of causing genetic defects
 H350 May cause cancer (cadmium)
 H351 Suspected of causing cancer (lead)
 H361 Suspected of damaging fertility or the unborn child (applicable to lead containing product)
 H372 Causes damage to organs (lungs and kidneys) through prolonged or repeated exposure (cadmium)
 H373 May cause damage to organs through prolonged or repeated exposure (blood/kidneys/CNS) (applicable to lead containing product)
 H410 Very toxic to aquatic life with long lasting harmful effects (lead) (cadmium)

Precautionary statement(s)

P233	Keep container tightly closed
P261	Avoid breathing dust/fume/gas/mist/vapours/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 + P364	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)

Supplemental Information:

EUH208	Contains rosin. May produce an allergic reaction
EUH201A	Warning! Contains lead (applicable only to the products listed that contain lead)
EUH207:	Warning! Contains cadmium. Dangerous fumes are formed during use (applicable only to the products listed that contain cadmium).

Review applicable alloy listing.

PRIMARY ROUTES OF ENTRY:

⊕ Eye ⊕ Inhalation ⊕ Skin ⊕ Ingestion NTP IARC OSHA ⊕ Not Listed

Carcinogen listed in

2.3 OTHER HAZARDS:

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. Molten metal can cause damage to eyes.
- Ingestion:** This product contains metal alloy powder and organic chemicals. May be harmful if swallowed.
- Inhalation:** Heated vapor concentrations may be harmful if inhaled. Prolonged or repeated exposure to smoke or fumes may cause respiratory sensitization. Inhalation of cadmium fume or dust can cause metal fume fever. Inhalation of cadmium may be harmful.
- Skin Contact:** Brief contact may cause slight irritation. Allergic reaction may occur with prolonged exposure to flux. Antimony has been known to cause dermatitis
- Chronic:** Prolonged or repeated overexposure to mist or vapor generated at high temperatures may result in the inhalation of harmful amounts of material.
- TIN:** Over exposure may cause metal fume fever.
- 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 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.
- CADMIUM:** Overexposure can cause damage to the lungs and kidneys. Cadmium is a toxic metal

and ingestion or inhalation of fumes and dust can be harmful. Included effects may be obstructive lung disease such as emphysema, bone demineralization, micro fractures and osteomalacia, gastrointestinal symptoms, rhinitis and discoloration of the teeth.

BISMUTH: May cause kidney damage.

INDIUM: May cause damage to respiratory system. Kidney and liver damage from injection of indium compounds has been reported based on limited animal testing. Target organs: teeth and gums

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #/EINECS#	
LEAD	0 - 97.5	7439-92-1/231-100-4	H302/351/361/373/410
TIN	1.0 - 96.5	7440-31-5/231-141-8	no hazard statements
SILVER	0 – 5.0	7440-22-4/231-131-3	no hazard statements
COPPER	0 - 0.5	7440-50-8	no hazard statements
ANTIMONY	0 - 5.0	7440-36-0/231-146-5	no hazard statements
BISMUTH	0 – 58.0	7440-69-9/231-177-4	no hazard statements
CADMIUM	0 - 18.2	7440-43-9	H301/330/341/350/361/372/410
ZINC	0 - 9.0	7440-66-6	H410
INDIUM	0 - 52.0	7440-74-6/231-180-0	H335
ROSIN	0.96 - 2.88	65997-05-9	H317/319/335
PROPRIETARY	0.04 - 0.12	-	

* See Alloy Table at end of document for breakdown of percentages of alloy mixtures.

<http://www.indium.com>

SECTION 4. FIRST AID MEASURES

4.1 Description of 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.

4.2 Most important symptoms and effects, both acute and delayed:

Skin contact may cause irritation. Long term contact may cause dermatitis. Inhalation of decomposed rosin fume may cause irritation or occupational asthma. Exposure to metal fumes may cause irritation to the respiratory system. Long term exposure by inhalation to metal fumes may cause illness such as metal fume fever. Exposure to lead or cadmium fume may cause harm. Sign of overexposure is anemia. Exposure can cause eye irritation and can cause serious irritation especially during fuming.

4.3 Indication of any immediate medical attention and special treatment needed:

No specific special treatment information is available on this mixture. Review data provided in this document to understand the hazards when working with the product. No other information is available at this time.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media:

Use extinguishers appropriate for the surrounding fire conditions. Water, CO2 or foam media.

5.2 Special hazards arising from the substance or mixture:

May produce toxic fumes of carbon monoxide if burning or metal oxide fumes.

5.3 Advice for Firefighters

Fire fighters must wear approved self-contained breathing apparatus and full protective clothing.

Material product is not classified as flammable.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Keep away from the spill. Remove sources of ignition. Keep exhaust ventilation system running. In the event of a fire evacuate area.

For emergency responders:

Wear safety glasses, gloves when cleaning up any spill. Other equipment may be necessary based on the immediate area and other chemicals unrelated to the product that may be in use. Adequate ventilation should be available.

Keep unnecessary personnel away from area during clean up.

Environmental Precautions: Dispose contaminated cloth rags or paper towels following all applicable governmental regulations. Material may have reclaim value. Material may contain lead or cadmium which is not suited for direct disposal to the environment. Product contains metals and organic chemicals which may not be suited for release to any body of water including drains. Dispose of in accordance with governmental regulations.

Methods and material for containment and cleaning up:

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.

6.2 Reference to other sections: See Section 8 for exposure levels.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions For Safe Handling:

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. Do not eat, drink or smoke when handling this product. Utilize exhaust ventilation when heating product. Emissions may contain metal fumes, rosin and organic compounds.

7.2 Conditions for Safe Storage, including any incompatibilities:

Storage Precautions: Store product in tightly capped original containers in a cool, dry area. Refer to product label and product data sheet for specific storage temperature requirements. Rotate stock to ensure use before expiration date.

7.3 Specific End Use(s): Soldering applications

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

Components	% wt	CAS Registry #/EINECS#	TLV-TWA mg/m ³	TLV-STEL mg/m ³
LEAD	0 -97.5	7439-92-1/231-100-4		
		(UK)	0.15	-
		(France)	0.1	-
		(Spain)	0.15	-
		(Italy)	0.15	-
		(Portugal)	0.05	-
		(Finland)	0.1	-
		(Denmark)	0.05	-
		(Austria)	0.1	0.4
		(Switzerland)	0.1	0.8
		(Poland)	0.05	-
		(Norway)	0.05	-
(Ireland)	0.15	-		
TIN	1 – 96.5	7440-31-5/231-141-8		
		(UK)	2	4
		(Belgium)	2	-

			(Germany)	2	-
			(Netherlands)	2	-
			(Spain)	2	-
			(Poland)	2	
SILVER	0 - 5	7440-22-4/231-131-3			
			(UK)	0.1	0.3
			(Belgium)	0.1	-
			(France)	0.1	-
			(Germany)	0.1	-
			(Netherlands)	0.1	-
			(Spain)	0.1	-
			(Poland)	0.05	-
COPPER	0 – 0.5	7440-50-8 /231-159-6			
			(UK)	0.2 (fume)	0.6(fume)
			(France)	2	0.2(fume)
			(Belgium)	1	-
				0.2(fume)	
			(Spain)	1	-
				0.2(fume)	
			(Portugal)	1	0.2(fume)
			(Netherlands)	0.1	-
			(Finland)	1	-
				0.1	
			(Denmark)	1	-
				0.1	
			(Austria)	1	4
				0.1(fume)	0.4
			(Switzerland)	0.1	0.2
			(Norway)	1	0.1
			(Ireland)	1	2
			(Poland)	0.2	-
ANTIMONY	0 - 5	7440-36-0/231-146-5			
			(UK)	0.5	-
			(France)	0.5	-

		(Belgium)	0.5	-
		(Spain)	0.5	-
		(Portugal)	0.5	-
		(The Netherlands)	0.5	-
		(Finland)	0.5	-
		(Denmark)	0.5	-
		(Austria)	0.5	5
		(Switzerland)	0.5	-
		(Poland)	0.5	-
		(Norway)	0.5	-
		(Ireland)	0.5	-
BISMUTH	0 - 58	7440-69-9/231-177-4	N.E.	N.E.
CADMIUM	0 – 18.2	7440-43-9/231-152-8		
		(UK)	0.025	0.075
		(Belgium)	0.01	-
		(Spain)	0.002	-
		(Portugal)	0.01	-
		(Finland)	0.02	-
		(Austria)	0.03	-
		(Denmark)	0.05	-
		(Poland)	0,01	-
		(Norway)	0.05	0.15
		(Bulgaria)	0.05	-
		(Ireland)	0.025	-
		(Estonia)	0.05	-
		(Greece0	0.025	0.1
		(Hungary)	-	0.015 ceiling
		(Latvia)	0.01	0.05
		(Romania)	0.05	-
		(Russia)	0.01	0.05
		(Slovak Republic)	0.15	0.1
ZINC	0 - 9	7440-66-6	N.E.	N.E.
INDIUM	0 - 52	7440-74-6/231-180-0		

		(UK)	0.1	0.3
		(Belgium)	0.1	-
		(Spain)	0.1	-
		(Portugal)	0.1	-
		(Finland)	0.1	-
		(Denmark)	0.1	-
		(Austria)	0.1	0.2
		(Switzerland)	0.1	-
		(Norway)	0.1	-
		(Ireland)	0.1	0.3
ROSIN	0.96-2.88	65997-05-9		
		(EU)	-	0.15(sensitiser)
PROPRIETARY	0.03-0.09	-	N.E.	N.E.

N.E. = Not established

TWA = time weighted average

STEL = short term exposure limit

*Refer to Alloy Table for additional information on alloy mixtures.

8.2 Exposure Controls:

Engineering Controls: Use only with production equipment with adequate exhaust ventilation and other safety features specifically designed for use with flux coated product. Control concentration of all components with established exposure limits so they are not exceeded. Use exhaust ventilation when heating product. Air emission control equipment may be necessary based on the local governmental requirements for contaminants entering the atmosphere. Emissions may contain metal fume, rosin and other compounds.

Personal Protective Equipment:

Follow requirements for proper equipment as outlined under 2016/425.

Eye/face protection:

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection:

Handle with CEN approved disposable nitrile gloves (minimum layer thickness: 5 mil), EN 374. Gloves must be inspected prior to use. Please observe the instructions regarding permeability and breakthrough time which are provided by suppliers of gloves. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Use EN 407 approved thermal (hot) gloves for any handling of molten metal.

Body Protection:

The type of protective equipment must be selected according to the concentration and amount of any other substances used at the specific workplace. Handling of flux coated parts requires the use of gloves, eye protection and may require additional protection such as lab coat.

Respiratory protection:

Where risk assessment shows respirators are appropriate use a particle respirator type P100 (US) or half face respirator with multi-gas cartridges or type P3 (EN 143) respirator cartridges as a backup to engineering controls.

Work/Hygienic:

Maintain good housekeeping. Clean up spills immediately. Wash hands thoroughly with soap and water immediately upon leaving the work area and before eating. Refrain from eating or smoking in work areas. If applicable in EU, review lead and cadmium worker requirements. Certain work practice and medical monitoring may be required.

Control of environmental exposure:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties of the whole mixture:

Appearance:	Solid metal	Boiling Point/Range:	No data available*
Odor:	Mild.	Melting Point/Freezing Point:	See Alloy Table
Odor Threshold:	No data available*	Evaporation Rate:	No data available- metal
Specific Gravity:	See Alloy Table	pH:	Not applicable to solid metal product
Vapour Pressure:	No data available-not tested	Solubility in Water:	Insoluble
Vapour Density:	(air=1) No data available*	Partition coefficient:	No data available*
Relative Density:	No data available*	Flammability:	Not applicable- not flammable
Flash Point:	Not flammable-metal	Method:	Not applicable-metal
Auto-ignition Temperature:	No data available*	Flammable Limits:	Not flammable
UEL/LEL Limits:	No data available*	Decomposition Temp:	No testing data available*
Viscosity:	No data available-metal	Explosive properties:	Not applicable-metal
Oxidizing Properties:	No data available*		

*Indium Corporation has not conducted any testing on the mixture in order to acquire this data

9.2 Other Information: Above data for the whole mixture.

SECTION 10. STABILITY AND REACTIVITY

10.1 <u>Reactivity:</u>	Stable.
10.2 <u>Chemical Stability:</u>	Stable
10.3 <u>Possibility of Hazardous Reactions:</u>	Not established
10.4 <u>Conditions To Avoid:</u>	Not established
10.5 <u>Incompatible Materials:</u>	Avoid contact with acids, bases or oxidizing agents. Ignites and incandescs on heating with sulfur.

10.6 Hazardous Decomposition / Combustion: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures. Metal oxide fumes.

10.7 Hazardous Polymerization: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects of the solder paste:

Acute toxicity:	Not established	Mutagenicity:	Not established
Irritation:	Not established	Toxicity for Reproduction:	Not Established
Corrosivity:	Not applicable	Absence of specific data:	None available (not tested)
Sensitization:	Not available		

Repeated dose toxicity: Not established

Carcinogenicity: Not established

Likely Routes of Entry: eyes (irritation) /skin (irritation or sensitization) /inhalation (irritation/sensitization) ingestion (may be harmful)

Interactive effects: None known

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation or sensitization by skin and inhalation. May be harmful if inhaled.

11.3 Delayed and immediate effects as well as chronic effects from short and long-term exposure:

Exposure to rosin fume has been known to cause occupational asthma. Exposure to lead fume, if applicable, may cause harm by inhalation and ingestion. Chronic exposures to lead fume, if applicable, can cause potential harm to the developing fetus. Lead exposure can be toxic.

Exposure to cadmium fume is harmful. May cause cancer. Causes damage to organs through prolonged or repeated exposures. Can cause harm if inhaled and may be fatal if inhaled.

Mixture verses substance information: None known

Other Information:

Carcinogenicity Listing:

NTP:Yes, Cadmium is listed as a possible carcinogen (National Toxicity Program),

OSHA:Yes, Cadmium is listed as a possible carcinogen (US Occupational Safety & Health Administration)

IARC:Yes - Cadmium is listed as a possible carcinogen and lead and lead compounds are listed. (International Agency for Research on Cancer).

Copper - LD50 – intraperitoneal mouse 3.5 mg/kg.

Silver – LD50 oral – rat > 5,000 mg/kg

Lead – Suspected human reproductive toxicant. May cause damage to organs through prolonged or repeated exposure. Reproductive toxicity – rat –inhalation, oral/ effects on newborn.

Antimony- LD50 oral-rat 7,000 mg/kg

Cadmium- Inhalation, human, 39 mg/m³, LCLO, Oral, rat, 2330 mg/kg, LD50

Bismuth – LD50 oral-rat >2000 mg/kg

Zinc – LD50 oral-rat >2000 mg/kg

Indium – LD50 oral-rat 7000mg/kg

Tin – LD50 oral rat>2,000 mg/kg

Registry of Toxic Effects of Chemical Substances: RTECS# NL1050000 (indium), VM3500000 (silver), XP7320000 (tin), GL7900000 (fume/copper), CC4025000 (antimony), EU9800000 (cadmium), RTECS NL 1050000 (indium), OF7525000 (lead), EU9800000 (cadmium)

SECTION 12. ECOLOGICAL INFORMATION

Product mixtures not tested.

12.1 Toxicity: No information available

12.2 Persistence and degradability: No information available

12.3 Bioaccumulative potential: No information available

12.4 Mobility in soil: No information available

12.5 Results of PBT and vPvB assessments: No data is available

12.6 Other adverse effects: No information is available for mixture. Avoid release to environment.

Copper – Toxicity to daphnia and other aquatic invertebrates mortality NOEC – Daphnia 0.004 mg/l – 24h.

Lead – Toxicity to fish – mortality LOEC – rainbow trout – 1.19 mg/l – 96h. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Bioaccumulation – Oncorhynchus kisutch – 2 weeks
Bioconcentration factor (BCF): 12

Cadmium: 4.26mg/l LC 50 96h, 0.0004-0.003 mg/l LC50 96h,

Antimony – Toxicity to fish – mortality NOEC (sheepshead minnow) 6.2 mg/l – 96h. Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

Zinc – Toxicity to freshwater fish – LC50 0.439 mg/L 96h semi-static (Pimephales promelas)

Bismuth –EC50-water flea>100mg/l-48h

SECTION 13. DISPOSAL CONSIDERATION

13.1 Waste treatment method: Scrap metal alloy usually has value. Contact a commercial reclaimer for recycling. Otherwise, dispose of in accordance with environmental regulations. Containerize material and classify according to applicable regulations. No pre-treatment on site is recommended. Do not dispose of down any drain or waterway. Utilize the same personal protective equipment as the user when handling for disposal.

RoHS (Restriction of Hazardous Substances): some of the product mixtures are RoHS compliant because they are lead free. Product mixtures do not contain any PBB or PBDB brominated compounds.

RoHS – Note that some of the product mixtures do contain lead or cadmium and are therefore not compliant with RoHS. Users should review their particular use for any applicable exemptions that may apply. Review alloy table for products.

SECTION 14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements.

Not regulated/non - hazardous under US DOT (United States Department of Transportation).
Not regulated/non - hazardous under international shipping requirements (IATA/Ocean).

14.1 UN Number Not applicable

14.2 UN proper shipping name: Not applicable

14.3 <u>Transport hazard class(s):</u>	No Applicable
14.4 <u>Packing group:</u>	Not Applicable
14.5 <u>Environmental hazards:</u>	Not Applicable
14.6 <u>Special precautions for user:</u>	Not Applicable
14.7 <u>Transport in bulk:</u>	Not applicable

SECTION 15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

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).

All ingredients are listed on the USEPA TSCA Inventory.

All ingredients are listed on EINECS. Note Rosin was recently listed under the No Longer Polymer List, Notification of New Chemical Substances in Accordance with Directive 67/548/EEC.

Safety data sheet was developed using EC 1907/2006 amended as of 6 February 2020(EU 2020/171, EU 453/2010, 2015/830 and information as stated under regulation EC No 1272/2008 CLP Regulation, and EU 649/2012 guidance on exports and imports

GHS = Global Harmonized System

CLP= Classification, labeling and packaging

Product does not contain any substances ozone depleting substances and therefore not subject to EC 1005/2009.

15.2 Chemical safety assessment: None performed for mixture.

SECTION 16. OTHER INFORMATION

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of its products for human consumption.

Revised Date:	16 APRIL 2020
Prepared by:	Nancy Swarts, Indium Corporation of America
Approved by:	Nancy Swarts, Indium Corporation of America

Changes provided on this SDS were based on the requirements of EU 2020/171 as of amendments February 6, 2020 regarding EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

The information and recommendations contained herein are, to the best of The Indium Corporation of America's knowledge and belief, accurate and reliable as of the date issued. The Indium Corporation of America does not warrant or guarantee their accuracy or reliability, and The Indium Corporation of America shall not be liable for any loss or damage arising out of the user thereof. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.

ALLOY TABLE

Alloy reported as whole. Flux coating is 1-3%

INDALLOY	RoHS 2/3 Compliance	%TIN Sn	%LEAD Pb	%COPPER Cu	%Indium In	%SILVER Ag	%ANTIMONY Sb	%ZINC Zn	%BISMUTH Bi	%CADMIUM Cd	SPECIFIC GRAVITY	MELTING
1E (52In/48Sn)	Yes	48	-	-	52	-	-	-	-	-	7.30	118C/244F
38 (52.5Bi/32Pb/1 5.5Sn)	No	15.5	32	-	-	-	-	-	52.5	-	9.71	95C/203F
106 (Sn63/Pb37)	No	63	37	-	-	-	-	-	-	-	8.40	183C/361F
121 (96.5Sn/3.5Ag)	Yes	96.5	-	-	-	3.5	-	-	-	-	7.50	221C/430F
132 (95Sn/5Ag)	Yes	95	-	-	-	5	-	-	-	-	7.39	240C/464F
133 (95Sn/5Sb)	Yes	95	-	-	-	-	5	-	-	-	7.25	240C/464F
165 (97.5Pb/1.5Ag/ 1Sn)	No*	1	97.5	-	-	1.5	-	-	-	-	11.28	309C/588F
181 (51.2 Sn/30.6Pb/18. 2Cd)	No	51.2	30.6	-	-	-	-	-	-	18.2	8.45	145C/293F
201 (91Sn/9Zn)	Yes	91	-	-	-	-	-	9	-	-	7.27	199C/390F
246 (95.5Sn/4Ag/0. 5Cu)	Yes	95.5	-	0.5	-	4	-	-	-	-	7.40	225C/437F
256 (SAC305) (96.5Sn/3Ag/0. 5Cu)	Yes	96.5	-	0.5	-	3	-	-	-	-	7.40	220C/428F
281 (Bi58/Sn42)	Yes	42	-	-	-	-	-	-	58	-	8.56	138.3C/281F

RoHS 2 = Restriction of Hazardous Substances under EU Directive 2011/65/EU. *Review for any exemptions that may apply.

RoHS 3 = products do not contain any listed phthalates