



SAFETY DATA SHEET

Disclaimer:

This safety data sheet (SDS) represents a family grouping of all metal mixes that are blended with the same flux. A table is provided within this document that lists all possible 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 general health and safety information provided within is applicable to all products. Review any additional information that may be specific to the country or state where this is used.

User must review the contents of this (SDS) and determine what is applicable to their own country laws under Health and Safety and apply them as necessary. This (SDS) will not reference every countries Health and Safety Laws. It is the user's responsibility to determine what is applicable to them, including but not limited to review of any specific chemical lists and apply the requirements as necessary.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH NC-SMQ75 FLUX VEHICLE

SDS Number: SDS-IN 494

Revised Date: 16 OCTOBER 2018

Product Use: Industrial Use - No-clean solder paste consisting of a flux vehicle blended with a 80-93 % pre-alloyed metal powder. (mixture not defined as an article) *See alloy table for mixtures.

MANUFACTURER:

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2. HAZARDS IDENTIFICATION**PRIMARY ROUTES OF ENTRY:**

⊗Eye ⊗Inhalation ⊗Skin ⊗Ingestion

Carcinogen listed in

NTP IARC* OSHA ⊗Not Listed
* See Section 11

GHS:

Lead containing products



Signal Word: Warning

Hazard statement(s)

H303 May be harmful if swallowed (lead)
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 harmful effects (lead containing product)
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 + 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 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)

All other products (lead-free):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 + 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 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)

Classification:

Acute toxicity,- Category 4 (lead)
Specific target organ toxicity- repeated exposure – Category 2
Carcinogenicity (Category 2) (lead)
Reproductive toxicity (Category 2) (lead)
Acute aquatic toxicity – Category 1 for lead containing products
Chronic aquatic toxicity – Category 1 for lead containing products

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 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: 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.

BISMUTH: May cause kidney damage.

INDIUM: May cause damage to respiratory system.

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 can expose you to chemicals including [lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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)	-
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	-	-
GOLD	*	7440-57-5	N.E.	N.E.	N.E.
ANTIMONY	*	7440-36-0/231-146-5			
		(US)	0.5	0.5	-
		(EU)	0.5	-	-
		(Canada)	N.E.	0.5	1.5
		(Singapore)	0.5	-	-
		(Mexico)	0.5	-	-
		(China)	-	0.5	-
GERMANIUM	*	7440-56-4	N.E.	N.E.	N.E.
BISMUTH	*	7440-69-9 /231-177-4	N.E.	N.E.	N.E.
INDIUM	*	7440-74-8/231-180-0			

			(US)	0.1	0.1	-
			(EU)	N.E.	0.1	0.3
			(Canada)	N.E.	0.1	0.3
			(Singapore)	0.1	-	-
			(Mexico)	0.1	-	0.3
			(China)	-	0.1	0.3
COPPER	*	7440-50-8/231-159-6				
			(US)	0.1 (fume)	0.2 (fume)	-
			(EU)	-	0.2 (fume)	-
			(Singapore)	0.2(fume)	1(dust)	-
			(Mexico)	-	0.2(fume)	2
			(China)	-	0.2(fume)	0.6
					1(dust)	2.5
			(Canada)	-	0.2 (fume)	0.6 (fume)
MANGANESE	(doped)	7439-96-5		1(NIOSH)	0.2	3
			(EU)	-	1(fume)	3(fume)
			(Canada)	-	1(fume)	3(fume)
			(Singapore)	5(dust)	1(fume)	3(fume)
			(Mexico)	-	1(fume)	3(fume)
NICKEL	(doped)	7440-02-0/231-111-4				
			(US)	1	1.5	-
			(Canada)	-	1	2
			(Mexico)	-	1	-
			(Singapore)	1	-	-
			(China)	-	1	2.5
POLYGLYCOL ETHER	5-13	9038-95-3		N.E.	N.E.	N.E.
CARBOXYLIC ACID	0.5-1.0	67762-36-1		N.E.	N.E.	N.E.
MODIFIED CASTER OIL	2.5-3	61788-85-0		N.E.	N.E.	N.E.
CORRECTION: NO ROSIN IS CONTAINED IN THIS PRODUCT AS PREVIOUSLY REPORTED. THERE IS NO CHANGE TO THE ORIGINAL FORMULATION INGREDIENTS REMAIN THE SAME.						
N.E. = Not established *See Alloy Table						

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 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 (such as 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. For other uses use exhaust 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. Latex gloves not recommended
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. Review regulations to determine if any other requirements apply.

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:	4 – 8 (flux)
Vapor Pressure:	Not applicable.	Solubility in Water:	Insoluble (paste)
Vapor Density:	(air=1) Not applicable.	Flash Point:	Not applicable
Evaporation Rate:	N/D	Flammability:	No Information
Vapor Pressure:	N/D	Vapor Density:	N/D
Viscosity:	Not available see product data sheet		
Decomposition Temp:	Not available	Partition coefficient, n-octanol/water:	N/D
Relative Density:	N/D		

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: 2B- reasonably anticipated to be carcinogenic to humans		
	OSHA: 1910-1025		
	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

This product contains ingredients that are harmful to aquatic organisms. Product not tested.

Contains 5.6-11.9% of a substance rated as a severe marine pollutant.

An environmental hazard cannot be eliminated in the event of mishandling, misuse or disposal of this material. Product contains substances that are harmful to the aquatic environment.

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. Product may have some reclaim value. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Contains: 5.6-11.9% of a substance rated as a severe marine pollutant. Product not tested.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements.

FOR GROUND AND AIR SHIPPING:

Not classified as hazardous for motor vehicle, rail car or aircraft when shipped as non-bulk packaging.

NOTE: Review any exceptions for ground and air shipping based on the quantity, 5L or less liquid and 5kg or less solids being shipped. IATA- A197, 49 CFR 171.4

49 CFR 171.4: Single or combination packaging containing a net quantity per single inner packaging of 5L or less for liquids or having a net mass of 5 kg or less of solids are not subject to any other requirements provided the packaging meets the requirements in Section 173.24 and 173.24a (general requirements for proper packaging material)

FOR OCEAN SHIPPING ONLY:

Product contains a chemical that is rated as a severe marine pollutant when transporting by ocean as based on the Annex II of the 1973 International Convention for Prevention of Pollution from Ships, as modified by Protocol of 1978 (MARPOL 73/78).

Classified only as hazardous for ocean shipping because it contains a marine pollutant. This product does not fall under any other hazards that would classify its shipping classification otherwise.

IMDG:

UN 3077, Environmentally Hazardous Substances, Solid, N.O.S., 9, PG III (alkylphenol)

Marine Pollutant: contains a severe marine pollutant.



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.).



WARNING: This product can expose you to chemicals including [lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

SARA 313 Listing - 40 CFR 372.65

Lead CAS# 7439-92-1

Silver CAS# 7440-22-4

Antimony CAS# 7440-36-0

Copper CAS# 7440-50-8

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

All ingredients are listed on the EPA TSCA Inventory.

This product has been classified in accordance with Mexican regulations, NOM-018-STPS-2015 and NOM-101-STPS-2014.

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) (lead)



This product has been classified in accordance with the guidelines set by the Dept. of Industrial Health of the Republic of Singapore.

Regulatory Information China:

GB/T 16483-2008, GB/T 17519-2013, Safety Data Sheets for Chemical Products

GB 30000.2-29-2013, Rules for classification and labeling of chemicals (GHS)

Decree No. 591: Regulations on the Control Over Safety of Hazardous Chemicals.

This product has been classified using the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2007.

For compliance with EU Directive 2011/65/EU, Restriction of Hazardous Substances (RoHS) see Alloy Table.

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

Some ingredients are listed on the Canadian Domestic Substance List. No more than 2.2 % by weight is listed on the Non-domestic substance list.

Japan:

Poisonous and Deleterious Substance Control Law (PDSCL): No ingredients are listed.

Fire Service Law (FSL): Not regulated/not dangerous.

Industrial Safety and Health Law (ISHL): ingredients are listed

PRTR and Promotion of Chemical Management law, Class I Substance: Not applicable.

Waste Disposal and Public Cleaning Law: Specific Harmful Industrial Wastes: Some contents of the family grouping may

contain lead within the solder paste. Review alloy table and product label/ purchased and used.

Class II Designated Chemical Substances: No ingredients are listed.

Ingredients are listed on the Japanese Inventory Chemical Substance List/Industrial Safety and Health Law Substance List.

Review SDS and apply regulations where applicable.

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).

16. OTHER INFORMATION

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

Revised Date: 16 OCTOBER 2018

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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 blend mixed with flux)

Indalloy Metal Mixture	%Tin Sn	%Silver Ag	%Lead Pb	%Antimony Sb	%Indium In	%Copper Cu	%Gold Au	%Germanium Ge	%Bismuth Bi	RoHS* 2/3 Compliance
9 (70Sn/18Pb/12In)	56-65.1	-	14.4-16.7	-	9.6-11	-	-	-	-	NO
42 (46Bi/34Sn/20Pb)	27.2-31.6	-	16-18.6	-	-	-	-	-	36.8-42.8	NO
97 (43Sn/43Pb/14Bi)	34.4-40	-	34.4-40	-	-	-	-	-	11-13	NO
100 (62.6Sn/37Pb/0.4Ag)	50-58.2	0.32-0.37	29.6-34.0	-	-	-	-	-	-	NO
104 (Sn62/36Pb/2Ag)	49.6-57.7	1.6-1.9	28.8-33.5	-	-	-	-	-	-	NO
106 (Sn63/37Pb)	50.4-58.6	-	29.6-34.4	-	-	-	-	-	-	NO
109 (60Sn/40Pb)	48-55.8	-	32-37.2	-	-	-	-	-	-	NO
118 (90Sn/10Pb)	72-83.7	-	8 -9.3	-	-	-	-	-	-	NO
121 (96.5Sn/3.5Ag)	77.2-89.7	2.8-3.3	-	-	-	-	-	-	-	YES
122 (95Sn/5Pb)	76-88	-	4-4.7	-	-	-	-	-	-	NO
127 (60Pb/37Sn/3Ag)	29.6-34.4	2.4-2.8	48-55.8	-	-	-	-	-	-	NO
130 (60Pb/40Sn)	32-37.2	-	48-55.8	-	-	-	-	-	-	NO
131 (97Sn/3Sb)	77.6-90	-	-	2.4-2.8	-	-	-	-	-	YES
132 (95Sn/5Ag)	76-88	4-4.7	-	-	-	-	-	-	-	YES
133 (95Sn/5Sb)	76-88	-	-	4-4.7	-	-	-	-	-	YES

Indalloy Metal Mixture	%Tin Sn	%Silver Ag	%Lead Pb	%Antimony Sb	%Indium In	%Copper Cu	%Gold Au	%Germanium Ge	%Bismuth Bi	RoHS* 2/3 Compliance
133 (95Sn/5Sb) doped w/Nickel	76-88	-	-	4-4.7	-	-	-	-	-	YES
141 (70Pb/30Sn)	24-27.9	-	56-65	-	-	-	-	-	-	NO
143 (90Pb/10Sb)	-	-	72-83.7	8-9.3	-	-	-	-	-	YES+
149 (80Pb/20Sn)	16-18.6	-	64-74.4	-	-	-	-	-	-	NO
151 (92.5Pb/5Sn/2.5Ag)	4-4.7	2-2.3	74-86	-	-	-	-	-	-	YES+
155 (90Pb/5Ag/5Sn)	4-4.7	4-4.7	72-83.7	-	-	-	-	-	-	YES+
156 (90Sn/10Ag)	72-83.7	8.3-9.2	-	-	-	-	-	-	-	YES
159 (90Pb/10Sn)	8-9.3	-	72-83.7	-	-	-	-	-	-	YES+
160 (97Sn/3Cu)	77.6-90.2	-	-	-	-	2.4-2.8	-	-	-	YES
161 (97.5Pb/2.5Ag)	-	2-2.3	78-90.7	-	-	-	-	-	-	YES+
163 (95.5Pb/2.5Ag/2Sn)	1.6-1.9	2-2.3	76.4-88.8	-	-	-	-	-	-	YES+
164 (92.5Pb/5In/2.5Ag)	-	2-2.3	74-86	-	4-4.7	-	-	-	-	YES+
165 (97.5Pb/1.5Ag/1Sn)	0.80-0.93	1.2-1.4	78-90.6	-	-	-	-	-	-	YES+
171 (95Pb/5Sn)	4-4.7	-	76-88	-	-	-	-	-	-	YES+
175 (95Pb/5Ag)	-	4-4.7	76-88	-	-	-	-	-	-	YES+
182 (80Au/20Sn)	16-18.6	-	-	-	-	-	64-74.4	-	-	YES
183 (88Au/12Ge)	-	-	-	-	-	-	70-81.8	9.6-11.2	-	YES

Indalloy Metal Mixture	%Tin Sn	%Silver Ag	%Lead Pb	%Antimony Sb	%Indium In	%Copper Cu	%Gold Au	%Germanium Ge	%Bismuth Bi	RoHS* 2/3 Compliance
209 (65Sn/25Ag/10Sb)	52.0-60.5	20-23.3	-	8.0-9.3	-	-	-	-	-	YES
228 (88Pb/10Sn/2Ag)	8-9.3	1.6-1.9	70-82	-	-	-	-	-	-	YES+
233 (85Pb/10Sb/5Sn)	4-4.7	-	68-79	8-9.3	-	-	-	-	-	YES+
240 (46Sn/46Pb/8Bi)	36.8-42.8	-	36.8-42.8	-	-	-	-	-	6.4-7.4	NO
241 (SAC387) (95.5Sn/3.8Ag/0.7Cu)	76.4-88.8	3-3.5	-	-	-	0.56-0.65	-	-	-	YES
242 (89.5Pb/10.5Sn)	8.4-9.8	-	71.6-83	-	-	-	-	-	-	YES+
244 99.3Sn/0.7Cu	79.4-91.4	-	-	-	-	0.56-0.65	-	-	-	YES
246 (SAC405) (95.5Sn/4Ag/0.5Cu)	76.4-88.8	3.2-3.7	-	-	-	0.4-0.47	-	-	-	YES
254 (86.9Sn/10In/3.1Ag)	69.5-8.80	2.48-2.88	-	-	8.0-9.3	-	-	-	-	YES
255 (55.5Bi/44.5Pb)	-	-	35.6-41.4	-	-	-	-	-	44.4-51.6	NO
256 (SAC305) (96.5Sn/3Ag/0.5Cu)	77.2-89.7	2.4-2.8	-	-	-	0.4-0.47	-	-	-	YES
258 (SACm@105) (98.5Sn/1Ag/0.5Cu) doped with Mn	81.8-90.6	0.83-0.92	-	-	-	0.42-0.46	-	-	-	YES
259 (Sn90/Sb10)	72-83.7	-	-	8-9.3	-	-	-	-	-	YES
281 (58Bi/42Sn)	33.6-39	-	-	-	-	-	-	-	46.4-53.9	YES
282 (57Bi/42Sn/1Ag)	33.6-39	0.8-0.93	-	-	-	-	-	-	45.6-53	YES

Non Standard Alloy Mixtures										
Indalloy Metal Mixture	%Tin Sn	%Silver Ag	%Lead Pb	%Antimony Sb	%Indium In	%Copper Cu	%Gold Au	%Germanium Ge	%Bismuth Bi	RoHS* 2/3 Compliance
NS (Sn96/Ag4)	76.8-89.3	3.2-3.7	-	-	-	-	-	-	-	YES
NS (97Sn/2.5Ag/0.5Cu)	77.6-90.2	2-2.3	-	-	-	0.4-0.47	-	-	-	YES
NS (83.1Bi/11.9Ag/4.3Sn/0.7Sb)	3.6-4	9.9-10.9	-	0.58-0.64	-	-	-	-	69-76.5	YES
NS 83.2Bi/10.51Ag/6.29Sn)	5-5.8	8.4-9.8	-	-	-	-	-	-	66.6-77	YES
NS (85.44Bi/4.67Sn/9.89Ag)	3.88-4.3	8.2-9.1	-	-	-	-	-	-	70.9-78.6	YES
NS (86.2Bi/3.7Sn/ 10.1Ag)	3.1-3.4	8.4-9.3	-	-	-	-	-	-	71.5-79.3	YES
NS (86.24Bi/10.02Ag/3.74Sn)	3-3.4	8-9.3	-	-	-	-	-	-	71.6-79.3	YES
NS (90.8Bi/5.5Ag/3.7Sn)	3.07-3.4	4.57-5.06	-	-	-	-	-	-	75.4-83.5	YES
NS (96Pb/3Sn/1Ag)	2.4-2.79	0.8-0.93	76.8-89.3	-	-	-	-	-	-	YES+
NS (92.2Pb/5Sn/Ag2.5/Cu0.3)	4-4.7	2-2.3	73.8-85.7	-	-	0.24-0.28	-	-	-	YES+
Other										
Range of metal mixtures from 80-95Sn/1-3Ag/2-4Cu Not specifically stated. Some may contain a dopent Co										YES

- **RoHS 2 Compliance (2011/65/EU)**
- **RoHS 3 = products do not contain any listed phthalates**

+ Check any applicable lead exemptions that may apply.