SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH NC-7 FLUX COATING (lead containing)
SDS Number: SDS-CP 4061L Revised Date: 1 DECEMBER 2020

Product: Industrial Use (mixture) - Flux coated pre-form (solid metal alloy with variable flux coating)
** See alloy table for various combinations of metal alloy with the flux NC-7.

MANUFACTURER:

In America:
The Indium Corporation of America®
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nswarts@indium.com

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Singapore 628908
Information: +65 6268-8678

EMERGENCY PHONE:
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USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887
In China: +86 4001-204937
2. HAZARDS IDENTIFICATION

**PRIMARY ROUTES OF ENTRY:**

- Eye
- Inhalation
- Skin
- Ingestion

**Carcinogen listed in**

- NTP
- IARC
- OSHA
- Not Listed

GHS:

Classification:
Skin sensitization-Category 1B
Respiratory sensitization- Category 1B
Repr. 1A: H360FD; Lact.: H362;STOT RE1,H372

Lead containing

Signal Word: Danger

**Hazard statement(s)**

- H317 May cause an allergic skin reaction
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H360FD May damage fertility or the unborn child
- H362 May cause harm to breast-fed children
- H372 Causes damage to organs through prolonged or repeated exposure

**Precautionary statement(s)**

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P263 Avoid contact during pregnancy/while nursing
- 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
- 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)

**POTENTIAL HEALTH EFFECTS:**

**Eye Contact:** Contact with metal fume from molten metal may cause irritation. Severe eye damage may result from hot molten metal being splashed into the eyes. Wear safety glasses or goggles and face shield for protection from molten metal.

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

**Inhalation:** Vapors or fumes from this material may cause irritation to the respiratory system. When heated rosin may be a respiratory sensitizer. Rosin may cause occupational asthma.

**Skin Contact:** May cause skin irritation. Hot molten metal may cause burns to the skin. Rosin may 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 irritation or damage to respiratory system.

**COPPER:** Overexposure to fumes 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](http://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

<table>
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<tr>
<th>Components</th>
<th>% wt</th>
<th>CAS Registry #/EINECS</th>
<th>PEL mg/m³</th>
<th>TLV-TWA mg/m³</th>
<th>TLV-STEL mg/m³</th>
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INDALLOY WITH NC-7 FLUX (lead containing)

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**ROSIN MIX**  
1.0-5.0  
65997-05-9 (US)  
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<td>N.E.</td>
<td>0.15 (sensitiser)</td>
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</table>

**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.

**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.

TWA = time weighted average - 8hr  
STEL = short term exposure limit - 15 minutes

N.E. = Not established  
EU = European Union Occupational Exposure Limits  
* See alloy table
6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Contain spill. If molten, cool to allow metal to solidify. If metal, wear applicable personal protective equipment and clean up. Do not sweep any powder or any form that may become airborne. Vacuum if necessary. Place into containers and return to process or send to metals reclaimer. Follow the applicable Federal, State and Local regulations.

7. HANDLING AND STORAGE

Handling Precautions: Keep containers tightly closed when not in use. Use only with production equipment specifically designed for use. Wear appropriate personal protective equipment when working or handling material. 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. Consult Product Data Sheet for additional information.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use with adequate ventilation and other safety features specifically designed for use with solder flux materials. Control concentration of all components so that the exposure levels are not exceeded. Conduct monitoring if necessary. Avoid breathing metal fumes.

Personal protection:

- Eyes: Chemical safety glasses/goggles, plus face shield for molten application where there is a splash hazard.
- Respirator: An authority approved or compliant marked air-purifying respirator with a fume/organic chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or exceed exposure limits.
- Skin: Compatible chemical resistant gloves or hot gloves. Additional clothing such as apron and sleeve protectors for splash hazards.
- Other: Lab coat, eyewash fountain in work area. Avoid the use of contact lenses in high fume/splash areas.

Work/Hygienic Practices: Maintain good housekeeping. Clean up spills immediately. 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 using lead containing products use standard lead work procedures to avoid exposure to lead fumes.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Metal with flux coating
- Odor: Mild or None
- Specific Gravity: See table
- Vapor Pressure: Not applicable.
- Vapor Density: (air=1) Not applicable.
- Boiling Point: Not applicable.
- Melting Point: Not applicable
- pH: Not applicable
- Solubility in Water: Insoluble

10. STABILITY AND REACTIVITY

General: Stable.
Conditions to Avoid: Not established.
Incompatible Materials: Avoid contact with mineral acids.
Hazardous Decomposition / Combustion: Harmful toxic oxide fumes may form at elevated temperatures
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION
Carcinogenicity: NTP: Yes
OSHA: Yes
IARC: Yes Lead and lead compounds are listed as possible carcinogens.
LD50: Not established. LC50: Not established.

Other: Chronic Toxicity: Prolonged or repeated exposure to rosin flux fume may cause workers to develop occupational asthma. Lead can cause potential harm to the developing fetus.

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

12. ECOLOGICAL INFORMATION
Product not tested.

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

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 under US Department of Transportation as hazardous. Non-hazardous under air transport. Non-hazardous for all shipping (ground/IATA/Ocean).

UN - none

North American Emergency Response Guidebook: Not Applicable

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).

Canadian WHMIS: D2A-Materials Causing Other Toxic Effects- Very Toxic Material (Chronic) (lead)

![Warning Icon]

Class D 2B Materials Causing Other Toxic Effects (irritant)

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 under the Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.

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).

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 under the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2007.

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

EPA Genetic Toxicology Program – Lead CAS# 7439-92-1
All ingredients are listed on the EPA TSCA Inventory.
Product does not contain any REACH SVHC hexabromocyclododecane (HBCDD).

16. OTHER INFORMATION

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

Revised Date: 1 DECEMBER 2020
Prepared by: Nancy Swarts, Indium Corporation of America
### ALLOY TABLE

Metal mix based on flux variation of 0.5-5%

<table>
<thead>
<tr>
<th>Indalloy (Metal Mix)</th>
<th>Specific Gravity</th>
<th>RoHS 2/3 Compliance***</th>
<th>%TIN Sn</th>
<th>%SILVER Ag</th>
<th>%LEAD Pb</th>
<th>%BISMUTH Bi</th>
<th>%INDIUM In</th>
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RoHS 2= Restriction of Hazardous Substances  
***EU Directive 2011/65/EU (review for any applicable exemptions for high melting lead products above) 
NS = Non Standard Alloy Mixture  
RoHS 3- no phthalates