SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH NC-SMQ92V FLUX VEHICLE
SDS Number: SDS-IN 650
Revised Date: 4 JANUARY 2018

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

MANUFACTURER:

In America:
The Indium Corporation of America
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Suchun Industrial Square
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Jiangsu Province, China 215126
Information: (86) 512-6283-4900
2. HAZARDS IDENTIFICATION

**PRIMARY ROUTES OF ENTRY:**

<table>
<thead>
<tr>
<th>Eye</th>
<th>Inhalation</th>
<th>Skin</th>
<th>Ingestion</th>
<th>Carcinogen listed in</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>NTP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IARC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OSHA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>XNot Listed</td>
</tr>
</tbody>
</table>

GHS – lead containing products

![Safety symbols]

**Signal Word:** Warning

**Hazard statement(s):**

- **H303** May be harmful if swallowed
- **H317** May cause an allergic skin reaction
- **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled
- **H335** May cause respiratory irritation
- **H351** Suspected of causing cancer (lead)
- **H361** Suspected of damaging fertility or the unborn child
- **H373** May cause damage to organs through prolonged or repeated exposure
- **H410** Very toxic to aquatic life with long lasting effects
- **EUH201A** Warning! Contains lead (applicable only to the products listed that contain lead) Review listing.
- **EUH208** Contains rosin. May produce an allergic reaction

**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 + 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)

**Classification:**

- 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
- Respiratory sensitizer- Category1B
- Skin sensitizer- Category1B
- Specific target organ toxicity, single exposure, respiratory tract-Category 3
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 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. When heated rosin may be a respiratory sensitizer.

Skin Contact: May cause mild skin irritation. 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.

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

WARNING: This product contains a chemical 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 contains 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.

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3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<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-STE L mg/m³</th>
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</thead>
<tbody>
<tr>
<td>TIN</td>
<td>*</td>
<td>7440-31-5/231-141-8</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(US)</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
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<td></td>
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<td>(EU)</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td>(Singapore)</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LEAD</td>
<td>*</td>
<td>7439-92-1/231-100-4</td>
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<td>0.05</td>
<td>-</td>
</tr>
<tr>
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<td></td>
<td>(US)</td>
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<td>0.05</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(EU)</td>
<td>-</td>
<td>0.15</td>
<td>-</td>
</tr>
</tbody>
</table>
(Canada) 0.05 0.05 -
(Singapore) 0.15 - -
(Mexico) N.E. 0.15 -
(China) - 0.05(dust) 0.03(fume)

ROSIN
3.0-4.0 65997-05-9 (US) N.E. N.E. N.E.
(EU) 0.05  N.E.  0.15 (sensitiser)

POLYGLYCOL ETHER
2 – 5 9038-95-3 N.E. N.E. N.E.

PROPRIETARY
3.0-8.0 N.E. N.E. N.E.

N.E. = Not established  * See Alloy Table

### ALLOY TABLE

<table>
<thead>
<tr>
<th>Indalloy</th>
<th>%TIN</th>
<th>%LEAD</th>
<th>RoHS 2 Compliance</th>
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</thead>
<tbody>
<tr>
<td>106</td>
<td>52.3-58</td>
<td>30.7-34</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metal mixed with Flux</th>
</tr>
</thead>
</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.
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. Consult Product Data Sheet for additional information.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use only with production equipment (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 exposure levels are not exceeded. Avoid exposure to lead fumes.

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, eyewash 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. Follow applicable lead work practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey colored paste.
Odor: Mild characteristic odor.
Boiling Point: Not applicable.
Melting Point: Not applicable.
Specific Gravity: Not applicable.  
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. TOXICOLOGY

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

12. ECOLOGICAL INFORMATION

Product not tested.
Biodegradability: Data not established.
Aquatic Toxicity: Data not established.

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. Non hazardous material under shipping regulations.

USDOT/IATA/IMDG- non hazardous

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).
D2B 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 in accordance with the Mexican Standards: NOM-010-STPS-2015 and NOM-018-STPS-2014.

This product has been classified under the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2007.
Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals
GB 30000.2-29-2013, Rules for classification and labeling of chemicals. (GHS)
GB/T 16483-2008, GB/T 17517-2013

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).


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

All ingredients are listed on the EPA TSCA Inventory.

Malaysia:
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). (GHS)
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>HMIS Hazard Rating:</th>
<th>Health: 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fire: 1</td>
</tr>
<tr>
<td></td>
<td>Reactivity: 0</td>
</tr>
</tbody>
</table>

Revised Date: 4 JANUARY 2018

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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