1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH INDIUM 3.1
SDS Number: SDS- WS4085
Revised Date: 18 NOVEMBER 2015

Product Use: INDUSTRIAL USE - WATER WASH SOLDER PASTE

MANUFACTURER:

In America:
The Indium Corporation of America
1676 Lincoln Ave., Utica NY 13502
Information: (315) 853-4900
nswarts@indium.com

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Information: +44 [0] 1908 580400

EMERGENCY PHONE:
CHEMTREC 24 hrs.
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Outside USA: +1 (703) 527-3887

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No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
Unit No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900

In Asia:
Indium Corporation of America
Asia-Pacific Operations-Singapore
29 Kian Teck Avenue
Singapore 628908
Information: +65 6268-8678
2. HAZARDS IDENTIFICATION

**PRIMARY ROUTES OF ENTRY:**

- Eye
- Inhalation
- Skin
- Ingestion

**Carcinogen listed in**

- NTP
- IARC
- OSHA
- Not Listed

**GHS:**

Signal Word: Warning

**Hazard statement(s):**

- H315  Causes skin irritation
- H320  Causes eye irritation
- H335  May cause respiratory irritation

**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 content/containers in accordance with applicable regulations. Do not re-use containers for food stuff.

Skin irritant – Category 2
Eye irritant – Category 2B

**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 powders and organic chemicals.

**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.

**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.
- **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.
- **TIN:** Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure to tin dusts
and fume results in “stannosis” a mild form of pneumoconiosis.

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

**Warning:** This product contains chemicals known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace levels of lead).

### 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-STEL mg/m³</th>
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<td>7440-31-5/231-141-8</td>
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<td>4</td>
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<td></td>
<td>(Canada) N.E.</td>
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<td>Silver</td>
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<td>Copper</td>
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<td>0.1fume</td>
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<td>(EU) -</td>
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<tr>
<td></td>
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<tr>
<td>Antimony</td>
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<td>7440-36-0/231-146-5</td>
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<tr>
<td>ALLOY TABLE</td>
<td>%Metal in flux mix (83-92%)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>INDALLOY (METAL)</td>
<td>%TIN Sn</td>
<td>%COPPER Cu</td>
<td>%ANTIMONY Sb</td>
<td>%SILVER Ag</td>
<td>RoHS 2* Compliance</td>
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<tr>
<td>121 (96.5Sn/3.5Ag)</td>
<td>80.1-88.8</td>
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<td>-</td>
<td>2.9-3.2</td>
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<td>132 (95Sn/5Ag)</td>
<td>79-87</td>
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<td>4.2-4.6</td>
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<td>133 (95Sn/5Sb)</td>
<td>78.9-87.4</td>
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<td>241 SAC 387 (95.5Sn/3.8Ag/0.7Cu)</td>
<td>79.3-87.9</td>
<td>0.58-0.64</td>
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<td>3.2-3.5</td>
<td>YES</td>
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<td>244 (99.3Sn/0.7Cu)</td>
<td>82.4-92.4</td>
<td>0.58-0.64</td>
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<td>YES</td>
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<tr>
<td>256 SAC305 (96.5Sn/3Ag/0.5Cu)</td>
<td>80-88.8</td>
<td>0.42-0.46</td>
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<td>2.5-2.8</td>
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<td>Non Standard Alloy 97Sn/2.5Ag/0.5Cu</td>
<td>80.5-89</td>
<td>0.42-0.46</td>
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<td>2.1-2.3</td>
<td>YES</td>
</tr>
</tbody>
</table>

RoHS2 (2011/65/EU) = Restriction of Hazardous Substances (review applicable exemptions)

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.

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### 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th><strong>Flash Point:</strong></th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Method:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Auto-ignition Temperature:</strong></td>
<td>Not established.</td>
</tr>
<tr>
<td><strong>Flammable Limits:</strong></td>
<td>Limits not established</td>
</tr>
<tr>
<td><strong>Extinguishing Media:</strong></td>
<td>Use extinguishers appropriate for the surrounding fire conditions. Foam, dry chemical, water spray.</td>
</tr>
<tr>
<td><strong>Special Fire Fighting Procedures:</strong></td>
<td>Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.</td>
</tr>
</tbody>
</table>

### 6. ACCIDENTAL RELEASE MEASURES

**Spill or Leak Procedures:** Wear a respirator and appropriate personal protection (See Exposure Controls/Personal Protective Section). Use spatula, scoop up paste and place in glass or plastic container. Remove traces of paste residue using cloth rags or paper towels moistened with isopropyl alcohol. Dispose of 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. Avoid breathing vapors from heated material. Avoid contact with eyes, skin and clothing. Use with adequate ventilation.

**Storage Precautions:** Store product in tightly capped original containers in a cool, dry area. Keep away from heat and flame. Store away from incompatible materials. Empty containers may be hazardous as they contain product residue.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Local exhaust ventilation is necessary to control airborne levels. Use only with production equipment with adequate ventilation and other safety features specifically designed for solder paste.

**Personal protection:**

- **Eyes:** Chemical safety glasses/goggles. Face shield for splash hazards.
- **Respirator:** An 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.
- **Skin:** Compatible chemical resistant gloves such, as nitrile should be worn. Protective outer garment, apron and sleeves as appropriate.
- **Other:** Eyewash fountain or Safety shower and eyewash unit in work area. Avoid the use of contact lenses.

**Work/Hygienic** Maintain good housekeeping. Clean up spills immediately.
Practices: Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Grey paste</td>
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<tr>
<td>Boiling Point</td>
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<tr>
<td>Odor:</td>
<td>Mild characteristic odor.</td>
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<tr>
<td>Melting Point</td>
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<tr>
<td>Specific Gravity:</td>
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<tr>
<td>pH:</td>
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<tr>
<td>Vapor Pressure:</td>
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<tr>
<td>Solubility in Water:</td>
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<tr>
<td>Vapor Density:</td>
<td>(air=1) Not applicable</td>
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<tr>
<td>Vapor Pressure:</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

General: Stable.
Conditions to Avoid: High temperatures, open flame.
Incompatible Materials: Not established
Hazardous Decomposition / Combustion: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures. (Decomposition products: Carbon dioxide, carbon monoxide)
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: NTP: No
OSHA: No
IARC: No
Product is not classified as a carcinogen.
LD50: Not established. LC50: Not established.
Other: Prolonged or repeated exposure to rosin flux may cause workers to develop occupational asthma.

Product contains 0.06-0.13% of a substance classified under GHS as a Category 2 carcinogen and 0.06-0.13% of a substance classified as a Category 1B reproductive toxicant.

12. ECOLOGICAL INFORMATION

Product not tested.

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Special Waste Regulations. May have reclaim value.

14. TRANSPORT INFORMATION
Transport in accordance with applicable regulations and requirements.

Not classified as hazardous in shipping under regulations.

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 Mexican regulations: NOM – 018-STPS-2000 and NOM-010-STPS-1999.

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

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

Canadian WHMIS: 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.

For compliance with EU directive 2002/95/EC, Restriction of Hazardous Substances (RoHS) see alloy table.

Warning: This product contains chemicals known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace levels of lead).

SARA 313 Listing - 40 CFR 372.65 (silver, copper, antimony)

All ingredients are listed on the EPA TSCA Inventory.
16. OTHER INFORMATION

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

Revised Date: 18 NOVEMBER 2015

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.