SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Identifier:</th>
<th>INDALLOY 256 (SAC305) WITH MD089 FLUX VEHICLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDS Number:</td>
<td>SDS-6213</td>
</tr>
<tr>
<td>Revised Date:</td>
<td>17 OCTOBER 2018</td>
</tr>
<tr>
<td>Product Use:</td>
<td>Industrial Use (mixture) - Solder paste consisting of a flux vehicle blended with 79% weight percent pre-alloyed metal powder for soldering applications.</td>
</tr>
</tbody>
</table>

MANUFACTURER:

**In America:**
The Indium Corporation of America®.
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Information: (315) 853-4900
nswarts@indium.com

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Information: +65 6268-8678

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Suzhou Industrial Park
Suchun Industrial Square
Unit No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900
## 2. HAZARDS IDENTIFICATION

### PRIMARY ROUTES OF ENTRY:

<table>
<thead>
<tr>
<th>Carcinogen listed in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye</td>
</tr>
<tr>
<td>Inhalation</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td>Ingestion</td>
</tr>
<tr>
<td>NTP</td>
</tr>
<tr>
<td>IARC</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>Not Listed</td>
</tr>
</tbody>
</table>

### GHS

**Signal 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
- **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:

- Skin sensitizer-Category 1B
- Respiratory sensitizer-Category 1B

### 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 severe eye irritation.

#### Ingestion:

This product contains metal alloy powders and organic chemicals. May cause irritation, 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. May be harmful if inhaled.

#### Skin Contact:

May cause skin irritation or dermatitis.

#### 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.

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

- **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.
### 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>
</tr>
</thead>
<tbody>
<tr>
<td>TIN</td>
<td>76.2</td>
<td>7440-31-5/231-141-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(US)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(EU)</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td></td>
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<tr>
<td>(Canada)</td>
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<td>2</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Singapore)</td>
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<td>-</td>
<td>-</td>
<td></td>
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<tr>
<td>SILVER</td>
<td>2.4</td>
<td>7440-22-4/231-131-3</td>
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<tr>
<td>(US)</td>
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</tr>
<tr>
<td>(EU)</td>
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<td>0.1</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Canada)</td>
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<td>0.1</td>
<td>0.3</td>
<td></td>
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</tr>
<tr>
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<td>0.1</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Singapore)</td>
<td>0.1</td>
<td>-</td>
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</tr>
<tr>
<td>COPPER</td>
<td>0.4</td>
<td>7440-50-8 (US) 0.1(fume)</td>
<td>0.2 (fume)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>(EU)</td>
<td>-</td>
<td>0.2 (fume)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Canada)</td>
<td>-</td>
<td>0.2 (fume)</td>
<td>0.6 (fume)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Mexico)</td>
<td>-</td>
<td>0.2(fume)</td>
<td>2</td>
<td></td>
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<tr>
<td>(Singapore)</td>
<td>0.2</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(China)</td>
<td>-</td>
<td>1(dust)</td>
<td>2.5</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>ROSIN</td>
<td>7.0-9.0</td>
<td>65997-05-9</td>
<td>N.E.</td>
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<td>N.E.</td>
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<tr>
<td>(EU)</td>
<td>0.05</td>
<td>N.E.</td>
<td>0.15 (sensitizer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROPRIETARY ACTIVATORS</td>
<td>5.0-9.0</td>
<td>-</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
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<tr>
<td>POLYGLYCOL ETHER</td>
<td>5.0-7.0</td>
<td>9038-95-3</td>
<td>N.E.</td>
<td>N.E.</td>
<td>N.E.</td>
</tr>
</tbody>
</table>

N.E. = not established

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**WARNING:** This product can expose you to chemicals including [trace amounts of 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.
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 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 ventilation and other safety features specifically designed for use with solder paste. Control concentration of all components so that the permissible exposure limits are not exceeded. Use proper exhaust ventilation. Keep exposures to as low as possible.
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 (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. Suggest a nitrile type disposable to keep control direct skin contact. Other chemical gloves may be worn. Latex 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

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

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: No  OSHA: No  IARC: No

LD50: Not established.

LC50: Not established.

Other: Chronic Toxicity: Prolonged or repeated exposure to rosin flux fume may cause workers to develop occupational asthma.

12. ECOLOGICAL INFORMATION
Product not tested.
Copper – Toxicity to daphnia and other aquatic invertebrate’s mortality NOEC – Daphnia 0.004 mg/l – 24h.

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 international regulations and requirements. Not regulated under US DOT (United States Department of Transportation).

Non hazardous under all shipping requirements.

Not regulated under IATA.


Marine Pollutant: No

UN – none.

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 [trace amounts of 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
Silver     Copper
All ingredients are listed on the EPA TSCA Inventory.

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 or sensitizer)

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

Most of the ingredients are listed on the Canadian Domestic Substance List.
This product has been classified in accordance with the Mexican regulations: NOM-018-STPS-2015 and
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)

In China:
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
This product has been classified using the Chinese Occupational Limit for Hazardous Agents in the Workplace, GBZ2-2007

16. OTHER INFORMATION

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

Revised Date: 17 OCTOBER 2018
Prepared by: Nancy Swarts, Indium Corporation of America
Approved by: Nancy Swarts, Indium Corporation of America

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Note: This SDS may be translated into an international language. If there is any misinterpretation or misunderstanding of any words or phrases that may occur within any translation the ENGLISH language shall always prevail.