SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Sn-3Ag-0.8Cu-3.0Bi-0.02Ni
SDS Number: SDS-10020 Revised Date: 15 JULY 2020
Product Use: Industrial Use - Alloy Metal Mix with Tin as the base.

MANUFACTURER:

In America:
The Indium Corporation of America®
34 Robinson Rd., Clinton, New York 13323
Information: (315) 853-4900
nswarts@indium.com

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Outside USA: +1 (703) 527-3887
China: Emergency 86+ 4008417580

In Europe:
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7 Newmarket Ct.
Kingston, Milton Keynes, UK, MK 10 OAG
Information: +44 [0] 1908 580400

In China:
Indium Corporation (Suzhou), Co., Ltd.
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:
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Asia-Pacific Operations-Singapore
29 Kian Teck Avenue
Singapore 628908
Information: +65 6268-8678

http://www.indium.com
2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:  
⊕Eye  ⊕Inhalation  ⊕Skin  ⊕Ingestion  

Carcinogen listed in  
NTP*  IARC  OSHA  ⊕Not Listed

GHS:  
No pictogram  
No hazard statements- no known significant effects  
Tin metal is not classified as hazardous or dangerous.

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
P305 + 351  IF IN EYES: Rinse continuously with water for several minutes (15 mins)
P501  Dispose of in accordance with applicable local/state and federal regulations. Consider recycling.

POTENTIAL HEALTH EFFECTS:

Eye Contact:  Solid metal does not pose a hazard. Contact with powered metal alloy or fume from molten metal may cause irritation. Severe eye damage may result from hot molten metal being splashed into the eyes. Dust may cause irritation.

Ingestion:  Not generally considered toxic, but large amounts may cause irritation.

Inhalation:  Dust may cause irritation to the respiratory tract. Inhalation of zinc dust may cause a sweet taste, throat dryness, cough nausea and fever.

Skin Contact:  Mechanical irritant upon contact. Cannot be absorbed through skin. Hot molten metal may cause burns to the skin. Nickel – have been known to cause dermatitis.

Chronic:  Standard metal does not pose a hazard. However, melting, cutting, burning, or grinding may cause hazards: irritation or harm. Prolonged inhalation may cause harm.

Silver – chronic skin contact or ingestion of silver dusts, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.

Copper – over exposure to fumes may cause metal fume fever (chills, muscle aches, fever, dry throat, cough, weakness, lassitude), metallic or sweet taste, discoloration of skin and hair.

Nickel – poison by ingestion. Can cause pulmonary asthma, and hypersensitivity.

Tin – prolonged inhalation of dust or fume may result in irritation of the lungs.

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

WARNING: This product can expose you to chemicals including [trace amounts of lead and nickel] which is known to the State of California to cause cancer, and [trace amounts of lead], which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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<th>Components</th>
<th>% wt</th>
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N.E. = Not Established
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 applicable

Flammable Limits: Fine dusts and powders could be a potential explosion hazard.

Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions. Use dry sand, sodium chloride, or dolomite. Water, A/B/C extinguishers and halogenated agents are not recommended.

Special Fire Fighting Procedures: Firefighters wear an approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Wear respirator and other personal protective clothing. (See Exposure Controls/Personal Protection Section). Extinguish or remove all sources of ignition. Ventilate area. Clean up spill without generating or dispersing dust into the air. Vacuum solids instead of sweeping using a grounded unit. Reduce airborne dust and prevent scattering by moistening with water. Place spilt material in a container and dispose of in accordance with applicable regulations.

7. HANDLING AND STORAGE

Handling Precautions: Avoid breathing vapors from heated material and dusts from cutting or grinding. Avoid contact with eyes, skin and clothing. Follow routine safe handling procedures. Use with adequate ventilation.

Storage Precautions: Keep away from heat and flame. Store in suitable, tightly capped, and labeled containers in cool dry, well-ventilated area. Empty containers may be hazardous as they contain product residue.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation or point source exhaust ventilation is recommended to control any air contaminants or potential exposure. Keep exposures below regulatory limits.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield recommended when handling molten metal.

Respirator: An authority approved or compliant marked air-purifying respirator with a fume/dust chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated. Warning: Air
purifying respirators do not protect the worker in oxygen-deficient atmospheres.

Skin: Wear protective gloves. Hot gloves for handling molten metal.

Other: Eye-wash fountain/shower in work area. Avoid the use of contact lenses in high fume and dust areas.

Work/Hygienic 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
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<td>Boiling Point</td>
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<td>Odor</td>
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<td>Melting Point</td>
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<td>Specific Gravity</td>
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<td>Solubility in Water</td>
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<tr>
<td>Vapor Density (air=1)</td>
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</tbody>
</table>

10. STABILITY AND REACTIVITY

| General                    | Stable                      |
| Conditions to Avoid        | Heat, flame, ignition sources |
| Incompatible Materials     | Halogens, sulfur and some acids |
| Hazardous Decomposition / | None                        |
| Combustion                 |                             |
| Hazardous Polymerization   | Will not occur.             |

11. TOXICOLOGICAL INFORMATION

| Carcinogenicity            | NTP (National Toxicity Program): Yes - Nickel |
|                           | OSHA (Occupational Safety & Health Administration): No |
|                           | IARC (International Agency for Research on Cancer): Yes - Nickel |
| LD50                      | Not established.            |
| Other                     | NICKEL RTECS# QR5950000     |
|                           | TIN RTECS# XP7320000       |
|                           | SILVER RTECS# VW3500000   |
|                           | COPPER RTECS# GL7900000    |
|                          | RTECS = NIOSH Registry of Toxic Effects of Chemical Substances |
|                          | Product mixture not tested. |

12. ECOLOGICAL INFORMATION

Product not tested.
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 for all shipping modes- USDOT/IATA/IMDG.

UN – none
Marine Pollutant: No
North American Emergency Guide Book – 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.).

SARA 313 Listing - 40 CFR 372.65 – Silver, Nickel, Copper

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

Ingredients are listed on the TSCA Inventory.
Contains ingredients that are listed on the New Jersey Right To Know List.

This product has been classified in accordance with the requirements of the Mexican regulations: NOM-018-STPS-2015 and NOM-010-STPS-2014.

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

Canadian WHMIS:
Tin, Silver, Copper: Uncontrolled product according to WHMIS classification criteria.
Nickel: D2A Very Toxic Material Causing Other Toxic Effects carcinogenicity: IARC group 2B

D2B Toxic Material Causing Other Toxic Effects skin sensitization in humans

D2B Toxic Material Causing Other Toxic Effects skin sensitization in humans

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

In China:
Decree No. 591: Regulations on the Control over Safety of Hazardous Chemicals

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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.

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).

Ingredients are listed on the China Chemical Inventory.
Ingredients are listed on the Korean Existing Chemical Inventory.
Ingredients are listed on the Philippines Inventory of Chemicals.
Ingredients are listed on the Canadian Domestic Substance List.

16. OTHER INFORMATION

HMIS Hazard Rating:
- Health: 1
- Fire: 0
- Reactivity: 0

Revised Date: 15 JULY 2020
Prepared by: Nancy Swarts, Indium Corporation of America
Approved by: Nancy Swarts, Indium Corporation of America

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