



INDIUM CORPORATION OF AMERICA ® \ EUROPE ® \ ASIA-PACIFIC ®
 INDIUM CORPORATION (SUZHOU) ®

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY WITH RA-2 FLUX CAKE

SDS Number: SDS-4450

Revised Date: 5 MARCH 2015

Product Use: Industrial Use - Flux cored wire

MANUFACTURER:

In America:

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

EMERGENCY PHONE:

CHEMTREC 24 hrs.
USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887

In Europe:

Indium Corporation of Europe
 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:

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
 NTP
 IARC
 OSHA
 Not Listed

Carcinogen listed in

GHS:



applicable to lead containing products

Signal Word: Warning

Hazard statement(s)

- H317 May cause an allergic skin reaction
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H332 Harmful if inhaled (lead containing products)
- H351 Suspected of causing cancer (lead)
- H361 Suspected of damaging fertility or the unborn child (applicable to lead containing product)
- H373 May cause damage to organs through prolonged or repeated exposure (applicable to lead containing product)
- H410 Very toxic to aquatic life with long lasting effects (lead)
- 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 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)

POTENTIAL HEALTH EFFECTS:

Eye Contact: Particulates of product may cause irritation otherwise solid material does not pose a hazard. Avoid exposure to molten metal. Metal may burn eyes.

Ingestion: This product contains metal alloy and rosin. May be harmful if swallowed.

Inhalation: Vapors or fumes from this material may cause local irritation to the respiratory system. May be harmful if inhaled. Inhalation of rosin fume may cause occupational asthma or irritation of respiratory tract.

Skin Contact: Contact with rosin may cause skin sensitization or irritation. Molten metal may burn skin.

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.

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.

WARNING: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace levels of state listed metals)

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 of joints in any private or public potable (drinking) water supply system. Keep out of the reach of children.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Components | % wt | CAS Registry #/ EINECS# | PEL mg/m ³ | TLV-TWA mg/m ³ | TLV-STEL mg/m ³ |
|---------------|------|----------------------------|--------------------------|------------------------------|-------------------------------|
| TIN | * | 7440-31-5/231-141-8 | | | |
| | | (US) | 2 | 2 | - |
| | | (EU) | - | 2 | 4 |
| | | (Canada) | - | 2 | 4 |
| | | (Singapore) | 2 | - | - |
| SILVER | * | 7440-22-4/231-131-3 | | | |
| | | (US) | 0.01 | 0.1 | - |
| | | (EU) | - | 0.1 | - |
| | | (Canada) | - | 0.1 | 0.3 |
| | | (Mexico) | - | 0.1 | - |
| (Singapore) | 0.1 | - | - | | |
| COPPER | * | 7440-50-8 (US) | 0.1 (fume) | 0.2 (fume) | - |
| | | (EU) | - | 0.2 (fume) | - |
| | | (Canada) | - | 0.2 (fume) | 0.6 (fume) |
| | | (Mexico) | - | 0.2(fume) | 2 |
| | | (Singapore) | 0.2 | - | - |

| | | | | | | |
|-----------------|---------|---------------------|-------------|------|------------|-------------------|
| | | | (China) | - | 1(dust) | 2.5 |
| | | | | | 0.2(fume) | 0.6 |
| LEAD | * | 7439-92-1/231-100-4 | (US) | 0.05 | 0.05 | - |
| | | | (EU) | - | 0.15 | - |
| | | | (Canada) | 0.05 | 0.05 | - |
| | | | (Singapore) | 0.15 | - | - |
| | | | (Mexico) | N.E. | 0.15 | - |
| | | | (China) | - | 0.05(dust) | - |
| | | | | | 0.03(fume) | - |
| ANTIMONY | * | 7440-36-0/231-146-5 | (US) | 0.5 | 0.5 | - |
| | | | (EU) | 0.5 | - | - |
| | | | (Canada) | - | 0.5 | 1.5 |
| | | | (Mexico) | N.E. | 0.5 | - |
| | | | (Singapore) | 0.5 | - | - |
| | | | (China) | - | 0.5 | - |
| ROSIN | 1.0-6.0 | 65997-05-9 | | N.E. | N.E. | N.E. |
| | | | (EU) | 0.05 | N.E. | 0.15 (sensitiser) |
| ADDITIVE | 0.3-0.7 | - | | N.E. | N.E. | N.E. |

Symbol: Xn Risk Phrases: R20/22, R36/37/38, R42/43
 N.E. = Not established

* See Alloy Table

Product complies with RoHS 2 Restriction of Hazardous Substances (2011/65/EU)

ALLOY TABLE

| INDALLOY (METAL MIX) | %LEAD Pb | %COPPER Cu | %TIN Sn | %ANTIMONY Sb | %SILVER Ag | Specific Gravity | *RoHS 2 Compliance |
|-------------------------|-------------|---------------|------------|-----------------|---------------|---------------------|-----------------------|
| 121 | - | - | 96.5 | — | 3.5 | 7.50 | Yes |
| 241 | - | 0.7 | 95.5 | — | 3.8 | 7.40 | Yes |
| 256 | - | 0.5 | 96.5 | — | 3 | 7.40 | Yes |
| Non Standard Mix | 39.15 | - | 60.5 | 0.35 | - | 8.47 | No |

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.
- 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: Solid metal shall be picked up and returned to process if acceptable. Dispose of following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations. Recycling is recommended. Metal should not be thrown into the regular trash.

7. HANDLING AND STORAGE

Handling

Precautions: Wear appropriate personal protective equipment when working or handling metal. 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: Work in an adequately ventilated area. When heating material control concentration of all components so that the permissible exposure limits are not exceeded. Heated material with fumes should be properly exhausted.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for splash hazard.

Respirator: A NIOSH approved or EU compliant CE marked air-purifying respirator with a fume/particulate chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated or exceed exposure limits. Avoid lead exposure, if applicable.

Skin: Work gloves, compatible chemical resistant gloves, hot gloves.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume/particulate 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. Avoid skin contact. Wear lab coat or sleeve protector as necessary. Remove contaminated clothing in order to eliminate potential skin irritation. Follow lead worker safe work practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Grey metal

Odor: Mild or no odor

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 (metal)

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 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. . Lead can cause potential harm to the developing fetus. | | |

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

North American Emergency Guide Book – Not Classified

Non hazardous- not regulated under IATA/IMDG.

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 guidelines, NOM-018-STPS-2000 and NOM-010-STPS-1999.

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

California PROP 65 (Safe Drinking Water Standard):

This product contains a chemical known to the State of California to cause cancer and/or birth defects or other reproductive harm.

SARA 313 Listing - 40 CFR 372.65
Silver Copper Lead Antimony

All ingredients are listed on the EPA TSCA Inventory.

Most of the ingredients are listed on the Canadian Domestic Substance List.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

Xn

Risk Phrases:

- R20/21/22 Harmful by inhalation and if swallowed
- R42/43 May cause sensitization by inhalation or by skin contact
- R36/37/38 Irritating to eyes, respiratory system and skin
- R33 Danger of cumulative effects (lead)
- R40 Limited evidence of carcinogenic effect (lead)
- R48 Danger of serious damage to health by prolonged exposure (lead)
- R61 May cause harm to the unborn child (lead)
- R50/53 Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment (lead)

Safety Phrases:

- S20/21 When using do not eat, drink or smoke
- S22 Do not breathe dust
- S23 Do not breathe fumes
- S24/25 Avoid contact with skin and eyes
- S27 Take off immediately all contaminated clothing
- S28 After contact with skin wash immediately with plenty of soap and water
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection
- S62 If swallowed, do not induce vomiting seek medical advice immediately and show container or label

| | |
|----|-------------------------------|
| S7 | Keep container tightly closed |
|----|-------------------------------|

16. OTHER INFORMATION

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

Revised Date: 5 MARCH 2015

Prepared by: Nancy Swarts, Indium Corporation of America

Approved by: Nancy Swarts, Indium Corporation of America

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