

# PRACTICAL SYSTEMS INC.

11617 PROSPECT ROAD  
ODESSA, FL 33556  
800-237-8154

## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDALLOY 19

MSDS Number: MSDS-021

Product Description: A metallic alloy consisting of 51% indium, 32.5% bismuth and 16.5% tin.

#### COMPANY PROFILE:

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

EMERGENCY PHONE: CHEMTREC 24 hrs.

USA: 1 (800) 424 - 9300

Outside USA: 1 (703) 527 - 3887

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Components	wt. %	CAS Registry #	PEL mg/m <sup>3</sup>	TLV-TWA mg/m <sup>3</sup>	TLV-STEL mg/m <sup>3</sup>
TIN	16.5	7440-31-5	N.E.	2	N.E.
BISMUTH	32.5	7440-69-9	N.E.	10	N.E.
INDIUM	51	7440-74-6	N.E.	0.1	N.E.

Notes :

### 3. HAZARDS IDENTIFICATION

#### Primary routes of entry

Eye  Inhalation  Skin  Ingestion

#### Carcinogen listed in

NTP  IARC  OSHA  Not Listed

#### Potential health effects

**Eye Contact:** Contact with powdered metal alloy or fume from molten metal may cause irritation. Severe eye damage may result from hot molten metal being splashed into the eyes. Wear safety glasses and faceshield when working with molten metal.

**Ingestion:** Ingestion of dust may cause headache, nausea, abdominal pain, fatigue and pain in the legs, arms and joints. Excessive ingestion of bismuth can cause kidney damage.

**Inhalation:** Inhalation of fume or dust may cause local irritation to the respiratory system. Inhalation of fume or dust may cause headache, nausea, abdominal pain, fatigue and pain in the legs, arms and joints.

**Skin Contact:** Normal handling should not cause any adverse health effects. May cause skin irritation. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal.

**Chronic:** Kidney and liver damage from injection of indium compounds has been reported based on limited animal testing, but no systematic effects from human exposure has been reported.

### 4. FIRST AID MEASURES

**Eye Contact:** Immediately flush eyes with plenty of water. Seek medical attention, if irritation persists.

**Ingestion:** If patient is conscious, give plenty of milk or water and 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 give 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.

**Autoignition Temperature:** Not established.

**Flammable Limits:** Massive metal is not flammable; however, dust or powder may be flammable. Limits not established.

**Extinguishing Media:** Use extinguisher appropriate for the surrounding fire conditions.

**Special Fire Fighting Procedures:** Firefighters must wear NIOSH/MSHA (approved or equivalent) self-contained breathing apparatus and full protective clothing.

## 6. ACCIDENTAL RELEASE MEASURES

**Spill or Leak Procedures:** Contain spill. If molten, cool to allow metal to solidify. If solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protection. DO NOT sweep. Use a vacuum, place in barrels and return to process.

## 7. HANDLING AND STORAGE

**Handling Precautions:** Only dry metals should be added to molten bath. If working with molten metal, or exposed to fume or dust, use appropriate personal protective equipment.

**Storage Precautions:** Store product in a dry, covered area, away from incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

### *Personal protection*

**Eyes:** Chemical safety glasses/goggles, or faceshield with molten metal.

**Respirator:** A NIOSH approved air purifying respirator with a fume/dust cartridge is recommended under certain circumstances, (i.e., alloy in powder form or when alloy is molten) where airborne concentrations are expected to exceed exposure limits.

**Skin:** Gloves - leather or impervious (vinyl) type. Heat resistant gloves if handling hot metal. Safety type boots. Personal protective equipment is recommended when working with molten metal to avoid burns.

**Other:** Safety shower and eye-wash fountain in work area. Avoid use of contact lenses in fume or dusty areas.

**Work/Hygienic Practices:** Practice good personal hygiene. Wash hands thoroughly before eating or smoking. Refrain from eating or smoking in work areas.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Silver grey solid metal.

**Odor:** Odorless.

**Vapor Pressure:** Not applicable.

**Solubility in Water:** Insoluble.

**Vapor Density:** (air=1) Not applicable.

**Melting Point:** 60°C (140°F) Eutectic

**Specific Gravity:** 7.88 g/cm<sup>3</sup> (H<sub>2</sub>O=1)

**Boiling Point:** Not established.

## 10. STABILITY AND REACTIVITY

**General:** Stable.

**Incompatible Materials:** Reacts with mineral acids.

**Conditions to Avoid:** Not established.

**Hazardous Decomposition /**

**Hazardous Combustion:** Toxic oxide fumes may evolve from molten metal alloy at elevated temperatures.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

### *Carcinogenicity*

IARC No

NTP No

OSHA No

LD50: Not established.

LC50: Not established.

## 12. ECOLOGICAL INFORMATION

This section is subject to future development.

## 13. DISPOSAL CONSIDERATIONS

**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.

## 14. TRANSPORT INFORMATION

This section is subject to future development.

## 15. REGULATORY INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 ET.SEQ.).

## 16. OTHER INFORMATION

HMIS Hazard Ratings	Health:	1
none -> extreme	Fire:	0
0 -> 4	Reactivity:	0

**Revised Date:** 8/19/98

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