



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

## SAFETY DATA SHEET

To better serve all of our customers Indium Corporation has generated one MSDS, for this product, to be used within the United States as well as internationally. Some of the regulatory information contained within may not be applicable to the customer's individual state or country. Unless otherwise stated the health and safety information provided within is applicable to all products.

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT IDENTIFIER:** INDALLOY 4 (INDIUM)

**MSDS NUMBER:** MSDS-IN 001

**REVISED DATE:** 23 FEBRUARY 2010

**PRODUCT USE:** INDUSTRIAL USE - PURE METAL INDIUM

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<http://www.indium.com>

## 2. HAZARDS IDENTIFICATION

### PRIMARY ROUTES OF ENTRY:

√Eye    √Inhalation    √Skin    √Ingestion

### CARCINOGEN LISTED IN:

NTP    IARC    OSHA    √Not Listed

GHS:



### 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 face shield when working with molten metal. Dust may cause irritation.

**Ingestion:** Ingestion of dust or fume may cause irritation. May be hazardous by ingestion.

**Inhalation:** Inhalation of fume or dust may cause local irritation to the respiratory system. Inhalation of fume or dust may be harmful.

**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:** Indium may cause damage to respiratory system. Kidney and liver damage from injection of indium compounds has been reported based on limited animal testing. Target organs: teeth and gums

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

**Warning:** **This product contains a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (Trace levels of lead not intentionally added)**

## 3. 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>
INDIUM	100	7440-74-6/231-180-0			
		(US)	0.1	0.1	-
		(EU)	-	0.1	0.3
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(Mexico)	0.1	-	0.3
		(China)	0.1	-	0.3

**PRODUCT DOES NOT CONTAIN ANY LISTED EU SUBSTANCES OF VERY HIGH CONCERN (SVHC)**

Symbol: X<sub>n</sub>

Risk Phrases: R20/21/22, R36/37/38    N.E. = Not established

Restriction of Hazardous Substances (RoHS) EU 2002\95\EC = material does not contain any flame - retardants. Product contains trace levels of other metals such as: lead 13 ppm/cadmium 1 ppm/ mercury <1 ppm/ does not contain any hexavalent chromium (chromium level <0.1 ppm). Trace levels may vary slightly with lots. Consult the specific certificate of analysis for exact levels. Product complies with RoHS.

#### 4. FIRST AID MEASURES

- Eye Contact:** Hold eyelids apart and flush eyes with plenty of 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. None combustible solid in bulk form, however, dust or powder may be flammable.
- Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions, such as carbon dioxide and water.
- Special Fire Fighting Procedures:** Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.
- Explosion Data - Sensitivity to:**      **Mechanical Impact:** Not established  
**Static Discharge:** Not established

#### 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 protective equipment. DO NOT SWEEP. Use a vacuum, place in barrels and return to process if possible.

#### 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. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed.
- Storage Precautions:** Store product in a cool, dry area away from incompatible materials.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Exhaust ventilation is necessary to control any air contaminants such as dusts and particulate.

### Personal protection:

**Eyes:** Chemical safety glasses/goggles and face shield with molten metal. Safety glasses and/or goggles for dusts.

**Respirator:** An approved air-purifying respirator with a HEPA particulate/fume cartridge is recommended when contaminants are elevated or when there is a risk to exceed the permissible exposure levels.

**Skin:** Rubber or heat resistant gloves. Apron, boots, sleeve protectors may be necessary depending on the type of work performed.

**Other:** Lab coat, eye-wash fountain, in work area. Avoid the use of contact lenses in high fume areas.

**Work/Hygienic** Maintain good housekeeping. Clean up spills immediately. Wash hands thoroughly with soap and water immediately upon leaving the work area. Refrain from eating or smoking in work areas.

\*Additional personal protective equipment may be required based on the type of work being performed. Dusty areas will require additional protection including respiratory protection. Do not grind material without proper engineering controls: ventilation equipment. Respiratory protection may be required if ventilation is not adequate or in addition to controls.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Lustrous silver-white metal, soft, malleable and ductile	<b>Boiling Point:</b>	2080°C (3776°F)
<b>Odor:</b>	Odorless.	<b>Melting Point:</b>	156.7°C (314°F)
<b>Specific Gravity:</b>	7.31 g/cm <sup>3</sup>	<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	<0.01 mmHg @25C	<b>Solubility in Water:</b>	Insoluble
<b>Vapor Density:</b>	(air=1) Not applicable.	<b>Molecular Weight:</b>	114.82

## 10. STABILITY AND REACTIVITY

<b>General:</b>	Stable.
<b>Conditions to Avoid:</b>	Not established.
<b>Incompatible Materials:</b>	Avoid contact with acids, sulfur or oxidizing agents. Ignites and incandesces on heating with sulfur.
<b>Hazardous Decomposition / Combustion:</b>	Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Carcinogenicity Listing:</b>	<b>National Testing Program (NTP):</b>	No	
	<b>Occupational Safety &amp; Health Administration (OSHA):</b>	No	
	<b>U.N. International Agency for Research on Cancer (IARC):</b>	No	
<b>LD50:</b>	Not established.	<b>LC50:</b>	Not established.
<b>Other:</b>	Chronic Toxicity: Over-exposure to fumes may cause respiratory tract irritation.		

**See NIOSH RTECS Number: NL1050000**

## 12. ECOLOGICAL INFORMATION

This section is subject to future development. Product not tested

WGK Germany – Water Quality 3

## 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 modes.

North American Emergency Guide Book – Not applicable

## 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 hereunder (29 CFR 1910.1200 ET. SEQ.).

The information in this Material Safety Data Sheet meets the requirements of the EU under Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 (CHIP 2) Regulation 6.

This product has been classified in accordance with the hazard criteria of the Commission Directive 91/155/EEC and EH40.

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

WHMIS: Not specifically classified.

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

Information on exposure levels in China is from regulation document GBZ2-2002 Occupational Exposure Limit for Hazardous Agents in the Workplace.

Japanese Pollution Release and Transfer Registration (PRTR) #44 as of September 2009

SARA 313 Listing - 40 CFR 372.65 None

All ingredients are listed on the EPA TSCA Inventory.

California Prop 65: Warning: This product contains a chemical (s) known to the State of California to cause cancer and birth defects (or other reproductive harm). (Trace levels of lead not intentionally added).

Ingredients are listed on the Canadian Domestic Substance List.

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product:

X<sub>n</sub>

**Risk Phrases:**

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed

R36/37/38 Irritating to eyes, respiratory system and skin

**Safety Phrases:**

S20/21 When using do not eat, drink or smoke

S23 Do not breathe fumes/gas/vapor/spray

S24/25 Avoid contact with skin and eyes

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection

S28 After contact with skin wash immediately with plenty of soap and water

S62 If swallowed, do not induce vomiting seek medical advice immediately and show container or label

## 16. OTHER INFORMATION

**HMIS Hazard Rating:**

<b>Health:</b>	2
<b>Fire:</b>	1
<b>Reactivity:</b>	0

**Revised Date:** 23 FEBRUARY 2010

**Prepared by:** Nancy Swarts, Indium Corporation of America

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