



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDIUM METAL MIXTURE WITH CLAD ALUMINUM

SDS Number: SDS- 4676

Revised Date: 9 MARCH 2018

Product Use: INDUSTRIAL USE - METAL CLAD PREFORM

MANUFACTURER:

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Singapore 628908
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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

*Eye

*Inhalation

*Skin

*Ingestion

NTP

Carcinogen listed in

IARC

OSHA

*Not Listed

GHS



Signal Word: Warning

Hazard statement(s)

H335 May cause respiratory irritation

Precautionary statement(s)

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)

P501 Dispose of contents by recycling or handle by a qualified disposer. Metal has reclaim value.

Solid metal pieces are not expected to pose a hazard. Grinding, melting/heating processes may pose potential health effects.

POTENTIAL HEALTH EFFECTS:

Eye Contact: Irritating to the eyes and if not removed promptly. Do not allow material to come in contact with eyes. Contact with fume from molten metal may cause irritation.

Ingestion: May be harmful if swallowed.

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

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

Chronic: **INDIUM:** May cause damage to respiratory system. 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.

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.



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

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #/EINECS	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
INDIUM	*	7440-74-69/231-180-0			
		(US)	0.1	0.1	N.E.
		(EU)	N.E.	0.1	0.3
		(Canada)	N.E.	0.1	0.3
		(Mexico)	0.1	N.E.	0.3
		(Singapore)	0.1	N.E.	N.E.
		(China)	-	0.1	0.3
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	-	-
TIN	*	7440-31-5/231-141-8			
		(US)	2	2	-
		(EU)	-	2	4
		(Canada)	-	2	4
		(Singapore)	2	-	-
ALUMINUM	*	7429-90-5			
		(US)	15(total dust)	10	-
		(EU)	-	10(dust)	-
		(Canada)	-	10	20
		(Singapore)	10(dust)	-	-

* See Alloy Table

Product complies with RoHS. It does not contain any metals above the thresholds established. No flame retardants or phthalates are contained within this metal product.

N.E. = Not established

ALLOY TABLE

INDALLOY OR METAL MIXTURE	% INDIUM	%TIN	%SILVER	%ALUMINIUM CLAD	RoHS 2/3 Compliance
1E	52	48	-	varies	Yes
3 (90In/10Ag) with 0.002Al	90		10	0.002	Yes
4 (100In) with 0.25-2.5 Al	100		-	0.25-2.5	Yes

(2011/65/EU) RoHS 2

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:** No established **Method:** Not established.
- Auto-ignition Temperature:** Not applicable
- Flammable Limits:** Not Flammable. In the form of dust conditions may be right when exposed to heat or flame to cause a potential hazard. Keep levels of any dust as low as possible.
- Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. Use dry chemical or sand or other agents for metal fires.
- 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 HEPA (high efficiency particulate filter) filter respirator and other personal protective clothing only if material is such that it creates an airborne hazard. (See Exposure Controls/Personal Protection Section). Clean up spill without generating or dispersing dust into the air. Vacuum solids, if necessary, instead of sweeping. Reduce airborne dust and prevent scattering by moistening with water. Do not put water onto hot metal. Place spilt material in a container and dispose of in accordance with applicable regulations. Solid material can just be picked up and either placed back into service or sent off site for recycling. No respiratory protection is necessary for solid metal pieces.

7. HANDLING AND STORAGE

Handling Avoid breathing vapors from heated material and dusts from powder form. 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 and labeled containers in cool dry, well-ventilated area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Local exhaust ventilation is recommended to control any fume or dust air contaminants. Do not cut, burn or grind unless proper ventilation is available.

Personal protection:

Eyes: Chemical safety glasses/goggles and face shield with molten metal for splash.

Respirator: A NIOSH approved or EU compliant CE marked air-purifying respirator with a fume/dust HEPA type Chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated and can't be controlled by ventilation. Warning: Air purifying respirators do not protect the worker in oxygen-deficient atmospheres.

Skin: Wear protective gloves, clothing such as lab coat, coveralls, apron and boots.

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. Wash hands and face thoroughly with soap and water immediately upon leaving the work area and before eating.

*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

Appearance:	Solid metal	Boiling Point:	Not available
Odor:	Odorless	Melting Point:	156C (Indium)
Specific Gravity:	7.31 (Indium)	pH:	Not applicable
Vapor Pressure:	Not established	Solubility in Water:	Insoluble
Vapor Density:	(air=1) Not applicable.		

10. STABILITY AND REACTIVITY

General:	Stable.
Conditions to Avoid:	Not established
Incompatible Materials:	Not established
Hazardous Decomposition / Combustion:	Toxic fumes are emitted at elevated temperatures.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:	NTP(National Toxicity Program):	No
	OSHA (Occupational Safety & Health Administration):	No
	IARC (International Agency for Research on Cancer):	No
LD50:	Not established.	LC50: Not established.

RTECS: NL 1050000 (indium)
RTECS: BD 0330000 (aluminum)

Product is not classified as toxic.

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).

UN – none

NONE – hazardous under all shipping modes. Not regulated under IATA.

Not hazardous under any international shipping regulations.

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).

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



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 –None

Ingredient is listed on the EPA TSCA Inventory.

Philippines: This product contains substances that are listed on the Philippines Inventory of Chemicals and Chemical Substances.

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. All ingredients are listed on the China Chemical Inventory.

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

16. OTHER INFORMATION

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

Revised Date: 9 MARCH 2018

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