



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

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: SILVER AND GALLIUM MIXTURE

MSDS Number: MSDS-5713

Revised Date: 4 SEPTEMBER 2012

Product Use: INDUSTRIAL USE – Metal alloy (mixture) of gallium with silver metal. Use is strictly based on the individual customer needs and requirements.

MANUFACTURER:

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2. HAZARDS IDENTIFICATION**PRIMARY ROUTES OF ENTRY:**

*Eye *Inhalation *Skin *Ingestion

CARCINOGEN LISTED IN:

NTP IARC OSHA *Not Listed

GHS:

Hazard Statement(s)

H314 May cause skin irritation
 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
 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: Severe damage may result from hot molten metal being splashed into the eyes. Wear proper protection when working with molten metal. May cause irritation.

Ingestion: Ingestion may be harmful. May cause irritation.

Inhalation: Inhalation of vapors may result in contamination and potential harmful effects. Inhalation may cause irritation.

Skin Contact: Contact may cause irritation. Hot molten metal may cause burns to the skin. Wear proper protective equipment when handling hot molten metal.

Chronic:

GALLIUM: May cause bone marrow abnormalities with damage to blood forming tissues.

SILVER: Chronic skin contact or ingestion of silver dust, salts, or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes.

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 lead). This is applicable within the State of California. This statement is not used outside of California.

NOTE: The Indium Corporation does not recommend, manufacturer, 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
GALLIUM	40-50	7440-55-3/231-163-8	N.E.	N.E.	N.E.
SILVER	50-90	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	-	-

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

N.E. = Not established

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. Gallium may be in concentrations to be corrosive.

5. FIRE FIGHTING MEASURES

- Flash Point:** Not established. **Method:** Not established.
- Auto-ignition Temperature:** Not established.
- Flammable Limits:** Limits not established. Massive metal is not flammable.
- Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. Do Not Direct Water at or onto the heated metal.
- Special Fire Fighting Procedures:** Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.
- Thermal decomposition can lead to release of irritating gases and vapors.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Solid metal should be clean up without generating dust. Do not sweep. Dispose of following all Federal, State and Local regulations. Metal may have reclaim value. Wear personal protective equipment and avoid breathing any dust or fume.

7. HANDLING AND STORAGE

Handling Precautions:

User should review their own workplace situations and uses and determine the best guidelines for handling. PPE should be assessed based on the particular use or uses. Melting or grinding of mixed alloys should be reviewed. Ventilation is recommended when there is a potential for work place exposures to metal fume or particulate. Permissible exposure levels in high fume or particulate tasks should be assessed so that they are not exceeded. Ensure engineering controls are used to protect the worker.

Safety glasses or goggles shall be worn. A face shield should be added when handling metal where there is a potential for splash hazards. Additional personal protective equipment should be used when handling molten metals: face shield, hot gloves for handling hot metals, sleeve protector for splash hazards if handling large volumes where there is a potential for splash and burns from hot metal. Additional protection includes apron.

Keep unauthorized personnel away when handling molten metals.

Exhaust ventilation should be provided for any metal fume when heating is being conducted.

Store materials in the proper container. Hot metals should be placed into a compatible container.

Storage Precautions: Store product in a cool, dry area away from incompatible materials (metals and moisture). Close container when not in use, where applicable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation is recommended to control any air contaminants and keep exposures as low as possible.

Personal protection:

Eyes: Chemical safety glasses/goggles and face shield with 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.

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: Lab coat, safety shower and eyewash fountain in work area. Avoid the use of contact lenses.

Work/Hygienic Practices: 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

Appearance:	Solid Metal		
Boiling Point:	No information available		
Odor:	Odorless	Melting Point:	No information available
Vapor Pressure:	1 mmHG@1350C (gallium)	Solubility in Water:	Insoluble
Vapor Density:	5.9@25C (gallium)	Molecular Weight:	gallium 69.72
Specific Gravity:			
10/90 = 9.74			
20/80 = 9.08			
30/70 = 8.51			
40/60 = 8.00			
50/50 = 7.55			

10. STABILITY AND REACTIVITY

General:	Stable in dry air.
Conditions to Avoid:	Dusts, metals, exposure to moisture
Incompatible Materials:	Potentially explosive reaction with hydrogen peroxide and hydrochloric acid. Violent or vigorous reaction with halogens.
Hazardous Decomposition / Combustion:	toxic gases
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: National Toxicity Program (NTP):	No
Occupational Safety & Health Administration (OSHA):	No
U.N. International Agency for Research on Cancer (IARC):	No

RTECS# LW8600000 (gallium)

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.
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14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

UN- none

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).

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

Canadian WHMIS: none

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

California PROP 65 (Safe Drinking Water Standard): WARNING: This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (trace lead). Applicable within the state.

SARA 313 Listing - 40 CFR 372.65: Silver

All ingredients are listed on the EPA TSCA Inventory, Philippines Inventory, Japan Existing and New Chemical Substances, China Inventory of Existing Chemical Substances, Canadian Domestic Substances List

EC Classification, Packaging and Labeling Requirements:

Symbol and Hazard Classification of Product

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

16. OTHER INFORMATION

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

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Approved by: Nancy Swarts, Indium Corporation of America

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