SAFETY DATA SHEET

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier: INDALLOY 14 (GALLIUM METAL)

SDS Number: SDS- 5626 **Revised Date:** 2 OCTOBER 2018

1.2 Relevant identified uses of the substance or mixture and uses advised against

Product Use: INDUSTRIAL USE – Metal alloy gallium

1.3 Details of the supplier of the safety data sheet

MANUFACTURER/SUPPLIER/IMPORTER:

In America:
The Indium Corporation of America®
34 Robinson Road, Clinton NY 13323
Technical & Safety Information: (315) 853-4900
Safety & SDS Information: nswarts@indium.com
Corporation web page: http://www.indium.com

In Europe:
Indium Corporation of Europe(European Operations)
7 Newmarket Ct.
Kingston, Milton Keynes, UK, MK 10 OAG
Information: (normal business hours) +44 [0] 1908 580400
EU Contact: aday@indium.com

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:
The Indium Corporation of America
Asia-Pacific Operations-Singapore
29 Kian Teck Avenue
Singapore 628908
Information: +65 6268-8678

1.4 Emergency Telephone Number

FOR CHEMICAL EMERGENCY ONLY PHONE *:
CHEMTREC 24 hrs.
USA: 1 (800) 424-9300
Outside USA: +1 (703) 527-3887
China: Emergency 86+ 4008417580
*** Used only for spill/leak/fire/exposure/accident**

ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation

SECTION 2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY: ✳Eye ✳Inhalation ✳Skin ✳Ingestion

CARCINOGEN LISTED IN: NTP IARC OSHA ✳Not Listed

2.1 Classification:

2.2 Label Elements

Labeling according to Regulation (EC) No. 1272/2008

GHS:

Signal Word: Danger

Hazard Statement(s)

H290	May be corrosive to metals
H318	Causes serious eye damage
H335	May cause respiratory irritation

Precautionary Statement(s)

P234	Keep only in the original container
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 +P364	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 +P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351	IF IN EYES: Rinse continuously with water for several minutes (15 mins)
P310	Immediately call a POISON CENTER or doctor/physician

Classification:
Corrosive to metals – Category 1
Serious eye damage- Category 1

2.3 OTHER HAZARDS:

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact may cause eye irritation or burns. Severe eye damage may result from hot molten metal being splashed into the eyes. Wear proper protection when working with molten metal. Powder form may cause eye irritation. Gallium metal at room temperature may be a splash hazard and cause irritation or harm to the eyes.

Ingestion: Ingestion may be harmful. Gallium is corrosive to metal.

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

Skin Contact: Contact may cause irritation and dermatitis. GALLIUM metal may be liquid at room temperature and may be absorbed through skin. GALLIUM is corrosive to metal in the liquid state. Hot molten metal may cause burns to the skin. Wear proper protective equipment when handling hot molten metal.

Other: GALLIUM: May cause bone marrow abnormalities with damage to blood forming tissues. Signs/symptoms of exposure are cough, shortness of breath, headache, nausea, vomiting, metallic taste, dermatitis.

Target Organs: kidney/lungs

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

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	% wt	CAS Registry #/EINECS#
GALLIUM	100	7440-55-3/231-163-8

N.E. = Not established

SECTION 4. FIRST AID MEASURES

4.1 Description of 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.

4.2 Most important symptoms and effect, both acute and delayed:

Exposure to metal fumes may cause irritation to the respiratory system. Long term exposure by inhalation to metal fumes may cause illness such as metal fume fever.

4.3 Indication of any immediate medical attention and special treatment needed:

No specific special treatment information is available on this mixture. Review data provided in this document to understand the hazards when working with the product. No other information is available at this time.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media:

Use extinguishers appropriate for the surrounding fire conditions. Do Not Direct Water at or onto the heated metal.

5.2 Special hazards arising from the substance or mixture:

May produce toxic fumes if burning.

5.3 Advice for firefighters:

Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Material product is not flammable. No other information is available.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Keep away from spill. Remove sources of ignition. Keep exhaust ventilation system running. In event of a fire evacuate the area.

For emergency responders:

Wear safety glasses, gloves when cleaning up any spill. Other equipment may be necessary based on the immediate area and other chemicals unrelated to the product that may be in use. Adequate ventilation should be available. Keep unnecessary personnel away from area during clean up. If on floor wear foot protection to avoid any direct contamination to shoes and boots. Avoid conditions that create fumes or fine dust. Use an approved respiration with particulate cartridge. Dust type masks are not recommended. Solid metal does not pose a danger and can be picked up and places into container for re-use recycling.

6.2 Environmental Precautions: Material has reclaim value. Recycle/recover/reuse vale. If recycling cannot be done then dispose of material following all applicable governmental regulations. Material is non – hazardous.

6.3 Methods and material for containment and cleaning up: Contain spill. Gallium metal may be liquid at room temperature. As gallium is corrosive to metal, it may be absorbed through skin, wear appropriate personal protection when containing spills. If possible, cool metal to below melting point, to solidify. Otherwise, remove by pushing pool of molten metal into plastic dustpan and place it into plastic container.

6.4 Reference to other sections: See Section 8 for exposure levels.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions For Safe Handling:

If working with molten metals, or exposed to fume or dust, use appropriate personal protective equipment. Gallium is liquid at room temperature and should be properly handled.

The following are general procedures for handling gallium. 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 gallium 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.

Gallium has a melting point of (29C) 84F. Personal protective equipment (PPE) must be worn when handling the metal. 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. Gallium is corrosive to metals.

7.2 Conditions for safe storage, including any incompatibilites:

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

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

Components	% wt	CAS Registry #/EINECS#	PEL mg/m³	TLV-TWA mg/m³	TLV-STEL mg/m³
GALLIUM	100	7440-55-3/231-163-8	N.E.	N.E.	N.E.

8.2 Exposure Controls:

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. Gallium metal is liquid at room temperature. Face shield may need to be worn when handling liquid metal at any temperature for splash protection.

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: Wear rubber or vinyl gloves when handling gallium metal. 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. Room temperature gallium is corrosive.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance: Lustrous, silvery liquid or gray solid metal product is a corrosive liquid to metal at room temperature.

Boiling Point: 2,403C (4,357F)

Odor: Odorless **Melting Point:** 29C (84F)

Specific Gravity: 5.904 g/ml at 25C

Vapor Pressure:	no data available	**Solubility in Water:**	Insoluble
Vapor Density:	no data available	**Molecular Weight:**	69.72

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity: Stable.

10.2 Chemical stability: Stable in dry air. Gallium will tarnish in moist air.

10.3 Possibility of hazardous reactions: Not established

10.4 Conditions to Avoid: Dusts, metals, exposure to moisture

10.5 Incompatible Materials: Potentially explosive reaction with hydrogen peroxide and hydrochloric acid. Violent or vigorous reaction with halogens.

10.6 Hazardous Decomposition / Combustion Corrosive and/or toxic gases

10.7 Hazardous Polymerization: Will not occur.

SECTION 11.TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

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)

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity: No information is available

12.2 Persistance and degradablilty: No information is available

12.3 Bioaccumulative potential: No information is available

12.4 Mobility in soil: No information is available

12.5 Results of PBT and vPvB assessments: No data is available

12.6 Other adverse effects: No information is available. Avoid release to environment.

SECTION 13. DISPOSAL CONSIDERATION

13.1 Waste treatment 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.

SECTION 14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements.

Shipping Name: **UN2803, Gallium, 8, PG III**

In USA: **Must follow the gallium proper packaging requirements as stated in 49 CFR 173.162 (Department of Transportation regulations.**

14.1 UN Number: None

14.2 UN proper shipping name: UN2803

14.3 Transport hazard class(s): Corrosive

14.4 Packing group: III

14.5 Environmental hazards: None

14.6 Special precautions for user: This material requires specific packaging. If outside of the USA review applicable country/international shipping and packaging instructions prior to shipping.

14.7 Transport in bulk: Not applicable

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

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).

Gallium is listed on the USEPA TSCA Inventory.

Gallium is listed on EINECS.

Safety data sheet was developed using EC 1907/2006 amended as of 20 May 2010 EU No 453/2010 and information as stated under regulation EC No 1272/2008 CLP Regulation.

GHS= Global Harmonizing System
CLP= Classification, labeling and packaging

Product does not contain any substances ozone depleting substances and therefore not subject to EC 2037/2000.

15.2 Chemical safety assessment: None performed

SECTION 16. OTHER INFORMATION

HMIS Hazard Rating:	**Health:**	3
	Fire:	0
	Physical Hazard:	0
	Revised Date:	2 OCTOBER 2018
Prepared by:	Nancy Swarts, Indium Corporation of America	
Approved by:	Nancy Swarts, Indium Corporation of America	

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