



SAFETY DATA SHEET

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

1.1 Product Identifier: INDIUM SULFATE

SDS Number: SDS- IB012

Revised Date: 4 OCTOBER 2019

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

Product Use: Industrial Use – Indium Sulfate, $\text{In}_2(\text{SO}_4)_3$ [Indium Sulfate Powder (anhydrous)]

1.3 Details of the supplier of the safety data sheet

MANUFACTURER/SUPPLIER/IMPORTER:

In America:

The Indium Corporation of America
34 Robinson Rd., Clinton, New York 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
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:

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***** Used only for spill/leak/fire/exposure/accident****ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation****France: 33-975181407****In France emergency information (French poison center): INRS (ORFILA) +33 (0) 1 45 42 59 59****Germany: toll free- 0800-181-7059 or (Frankfurt) 49-69643508409****Italy: toll free- 800-789-767****Poland: (Warsaw) 48-223988029****Portugal: 351-308801773****Hungary: (Budapest) 36-18088425****Romania: 40-37-6300026****United Kingdom: (London) 44-870-8200418 and 44-2038073798****SECTION 2. HAZARDS IDENTIFICATION****PRIMARY ROUTES OF ENTRY:**

Eye Inhalation Skin Ingestion NTP IARC OSHA Not Listed

Carcinogen listed in**2.1 Classification of the substance or mixture**

Not dangerous under GHS.

2.2 Label elements

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

Signal word: None

Precautionary statement(s)

P233	Keep container tightly closed
P261	Avoid breathing dust/fume/gas/mist/vapours/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 in accordance with applicable regulations. Product may be recycled.

OTHER HAZARDS:**POTENTIAL HEALTH EFFECTS:**

- Eye Contact:** May cause irritation.
- Ingestion:** May be harmful if swallowed. Kidney and liver damage from injected indium compounds has been reported based on limited animal testing.
- Inhalation:** May cause respiratory irritation. Severe exposure could cause pulmonary damage. Inhalation of indium may cause harm.
- Skin Contact:** May cause skin irritation. May be harmful if absorbed through the skin.
- Chronic:** Kidney and liver damage from injecting indium compounds has been reported based on limited animal testing but no systematic effects from human exposure has been reported.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	CAS Registry #/EINECS#
INDIUM SULFATE	13464-82-9/236-689-1

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:

Skin contact may cause irritation.
Eye exposure may cause serious irritation.

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.
Seek medical attention if eye irritation continues after flushing .
If respiratory discomfort is evident seek immediate medical advice.

SECTION 5. FIRE FIGHTING MEASURES

- 5.1 Extinguishing Media:** Use extinguishers appropriate for the surrounding fire conditions. Water, CO2, foam media.

5.2 Special hazards arising from the substance or mixture:

May produce toxic indium oxide fumes, if burning.

5.3 Advice for Firefighters

Fire-fighters must wear approved self-contained breathing apparatus and full protective clothing.

Material product is not flammable. However, dust in the air could generate a health hazard. 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 the spill. Remove sources of ignition. Keep exhaust ventilation system running. In the event of a fire evacuate 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. DO NOT SWEEP DRY SOLIDS. Do not raise dust levels. Use an approved respirator with particulate cartridge. Dust type masks are not recommended.

6.2 Environmental Precautions: Material has reclaim value. Recycle/recover/reuse value. 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:

Spill or leak procedures: Clean up by vacuum and not sweeping to avoid dust generation. Place into pail or drum and tightly cap. Recycle.

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

SECTION 7. HANDLING AND STORAGE**7.1 Precautions**

Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment (PPE) when working or handling material. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed. Do not eat, drink or smoke when handling this product. Utilize exhaust ventilation during handling of this product.

7.2 Conditions for Safe Storage, including any incompatibilities:

Storage Precautions: Store product in tightly capped original containers in a cool, dry area. Refer to product label and product data sheet for specific storage temperature requirements. Rotate stock to ensure use before expiration date.

7.3 Specific End Use(s): Not specified.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control Parameters:**

TWA

STEL

	<u>CAS#/EINECS#</u>		
INDIUM SULFATE	13464-82-9/236-689-1	-	-
(Indium CAS# 7440-74-6)	(UK)	0.1	0.3
	(Belgium)	0.1	-
	(Spain)	0.1	-
	(Portugal)	0.1	-
	(Finland)	0.1	-
	(Denmark)	0.1	-
	(Austria)	0.1	0.2
	(Switzerland)	0.1	-
	(Norway)	0.1	-
	(Ireland)	0.1	0.3

TWA = time weighted average (indium exposure)

STEL = short tern exposure level (indium exposure)

8.2 Exposure Controls:

Engineering Controls: Local and/or Mechanical exhaust ventilation or point source exhaust is required to control any airborne contaminants and to reduce potential exposures to workers. Avoid inhalation of particulate/dust/spray. Use exhaust when there is any doubt in whether the operator/user is getting any exposure.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for splash/grinding/spray/dust hazard.

Respiratory: An approved air-purifying respirator (half or full face) with a HEPA rated particulate filter or HEPA quality dust mask is required under certain circumstances where airborne concentrations are expected to be elevated. Avoid breathing dust.

Skin: Compatible chemical resistant gloves. Avoid direct skin contact.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume/dust areas. Coverage of hair may be required in dusty areas.

Work/Hygienic Maintain good housekeeping. Clean up spills immediately.

Practices: 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. Do not wear work clothes into lunchroom areas.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	White powder	Boiling Point/Range:	Not available
Odor:	Odorless	Melting Point/Freezing Point:	Not available
Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	Not available	pH:	Not applicable
Vapour Pressure:	Not available	Solubility in Water:	Soluble/53.92 gm/100 gm
Vapour Density:	(air=1) Not applicable.	Partition coefficient:	Not established
Relative Density:	Not established	Flammability:	Not applicable
Flash Point:	Not applicable	Method:	Not applicable
Auto-ignition Temperature:	Not applicable	Flammable Limits:	Limits not established
UEL/LEL Limits:	Not applicable	Decomposition Temp:	Not applicable
Viscosity:	Not established	Explosive properties:	Not applicable
Oxidizing Properties:	Not established		

SECTION 10. STABILITY AND REACTIVITY

- 10.1 **Reactivity:** Stable.
- 10.2 **Chemical Stability:** Stable
- 10.3 **Possibility of Hazardous Reactions:** Not established
- 10.4 **Conditions To Avoid:** Not established
- 10.5 **Incompatible Materials:** Avoid contact with strong oxidizing agents.
- 10.6 **Hazardous Decomposition / Combustion:** Harmful toxic oxide fumes may form at elevated temperatures.
- 10.7 **Hazardous Polymerization:** Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

<u>Acute toxicity:</u>	Not established	<u>Mutagenicity:</u>	Not established
<u>Irritation:</u>	Not established	<u>Toxicity for Reproduction:</u>	Not Established
<u>Corrosivity:</u>	Not applicable	<u>Absence of specific data:</u>	None available (not tested)
<u>Sensitization:</u>	Not available		
<u>Repeated dose toxicity:</u>	Not established		
<u>Carcinogenicity:</u>	Not established		
<u>Likely Routes of Entry:</u>	eyes(irritation) /skin (irritation) /inhalation (irritation)		
<u>Interactive effects:</u>	None known		

Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation by skin and inhalation. May cause eye irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure:

LD50 Oral rodent-rat>10 gm/kg
LD 50 subcutaneous – rat- 22.500 mg/kg

Mixture verses substance information: None known

Other Information:

Carcinogenicity: NTP: No (National Toxicity Program)
Listing OSHA: No (US Occupational Safety & Health Administration)
 IARC: No (U.N. International Agency for Research on Cancer)
 RTECS: NL1925000 NL1050000 (indium)

SECTION 12. ECOLOGICAL INFORMATION

- 12.1 **Toxicity:** No information available
 12.2 **Persistence and degradability:** No information available
 12.3 **Bioaccumulative potential:** No information available
 12.4 **Mobility in soil:** No information available
 12.5 **Results of PBT and vPvB assessments:** No data is available
 12.6 **Other adverse effects:** No information is available for mixture. Avoid release to environment.

SECTION 13. DISPOSAL CONSIDERATION**13.1 Waste treatment method:**

Scrap Indium has reclaim/recycle value. Contact recycler. Otherwise, dispose of in accordance with environmental regulations. Containerize material and classify according to applicable regulations. No pre-treatment on site is recommended. Do not dispose of down any drain or waterway. Utilize the same personal protective equipment as the user when handling for disposal.

RoHS (Restriction of Hazardous Substances): Compliant with RoHS.

SECTION 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Non - hazardous.

Not regulated/non- hazardous under US DOT (United States Department of Transportation).

Not regulated/non - hazardous under international shipping requirements (all modes).

- 14.1 **UN name:** None
 14.2 **UN proper shipping name:** None
 14.3 **Transport hazard class(s):** None
 14.4 **Packing group:** None
 14.5 **Environmental hazards:** None
 14.6 **Special precautions for user:** None

Transport in bulk: Not applicable

Marine pollutant: No

SECTION 15. REGULATORY INFORMATION

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

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 ET. SEQ.).

All ingredients are listed on the USEPA TSCA Inventory.

All ingredients are listed on EINECS.

Safety data sheet was developed using guidance from EC 1907/2006 amended as of Feb 2020 EU No 453/2010, 2015/830 and information as stated under regulation EC No 1272/2008 CLP Regulation.

GHS = Global Harmonized System

CLP= Classification, labeling and packaging

Product does not contain any substances ozone depleting substances and therefore not subject to EC 1005/2009.

15.2 Chemical safety assessment: None performed for mixture.

SECTION 16. OTHER INFORMATION

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

Changes provided on this SDS were based on the requirements of EU No. 453/2010 of Feb 2020 regarding amendments to EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

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Prepared by: Nancy Swarts, The Indium Corporation of America, nswarts@indium.com

Approved by: Nancy Swarts, The Indium Corporation of America

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