



SAFETY DATA SHEET

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

1.1 **Product Identifier:** INDIUM HYDROXIDE

SDS Number: SDS- IB015

Revised Date: 30 SEPTEMBER 2020

Version: 1.1

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

Product Use: Industrial Use – Indium hydroxide, In (OH) 3

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 America (European Operations)
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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
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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

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

Eye

Inhalation

Skin

Ingestion

NTP

Carcinogen listed in

IARC

OSHA

Not Listed

2.1 Classification of the substance or mixture

Substance

Classification:

Skin irritation- Category 2

Eye irritation- Category 2A

Specific target organ toxicity- single exposure, Respiratory system- Category 3

Classification according to Regulation (EC) No. 1272/2008:**2.2 Label elements**

Signal Word: Warning

Hazard statement(s)

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Precautionary statement(s)

P233 Keep container tightly closed

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)

2.3 **OTHER HAZARDS:**

POTENTIAL HEALTH EFFECTS:

Eye Contact: May cause eye irritation.

Ingestion: May be harmful if swallowed. May cause burns to the gastrointestinal tract. Kidney and liver damage from injected indium compounds has been reported based on limited animal testing.

Inhalation: May cause respiratory irritation. Severe exposure may cause pulmonary damage

Skin Contact: May cause skin irritation.

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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance:

Components	CAS Registry #/EINECS#
INDIUM HYDROXIDE	20661-21-6/243-947-1
Molecular weight:	165.84 g/mol
Formula:	H3InO3

4. FIRST AID MEASURES

4.1 Description of 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.

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.

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 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 hazard. No other information is available.

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.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

	<u>CAS#/EINECS#</u>	<u>TWA</u>	<u>STEL</u>
		mg/m ³	mg/m ³
INDIUM HYDROXIDE	20661-21-6/243-947-1	-	-
(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 (NDS) (MAC)
 STEL = short term exposure limit (NDSch)

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. Keep exposures to as low as possible. Grinding and cutting applications require a full-face respirator for adequate protection. Dust mask is not recommended in high exposure applications or when measurements or concentration levels are unknown when levels are unknown and dust is evident additional respiratory protection may be required especially in confined areas. Unknown exposure should be measured to determine the proper protection.

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 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. Do not wear work clothes into lunchroom areas.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Yellow solid powder	Boiling Point/Range:	loses H ₂ O above 150C
Odor:	Odorless	Melting Point/Freezing Point:	150C (302F)
Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	7.31 (H ₂ O=1).	pH:	Not applicable
Vapour Pressure:	<0.01 mm@25C	Solubility in Water:	Insoluble
Vapor Density:	(air=1) Not applicable.	Partition coefficient:	Not established
Relative Density:	4.45 g/cm ³ @20C	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		

9.2 Other Information: MW 165.84

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 acids, bases or oxidizing agents.
- 10.6 **Hazardous Decomposition / Combustion:**
Harmful toxic oxide fumes may form at elevated temperatures.
- 10.7 **Hazardous Polymerization:** Will not occur.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

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

Symptoms related to the physical, chemical and toxicological characteristics:

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

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

LD50 Oral rodent-rat>10 gm/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: NL1770000 (indium)

12. ECOLOGICAL INFORMATION

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- 12.1 **Toxicity:** No information available
- 12.2 **Persistence and degradability:** No information available
- 12.3 **Bio accumulative 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.

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 2 (Restriction of Hazardous Substances): Compliant with RoHS. (2011/65/EU)

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 all international shipping requirements.

UN proper shipping name: None

Transport hazard class(s): None

Packing group: None

Environmental hazards: None

Special precautions for user: None

Transport in bulk: Not applicable

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 ET. SEQ.).

All ingredients are listed on the USEPA TSCA Inventory.

All ingredients are listed on EINECS.

Safety data sheet was developed using EC 1907/2006 amended as of 6 February 2020 (EU 2020/171, EU 2015/830 and information as stated under regulation EC No 1272/2008 CLP Regulation, and EU 649/2012 guidance on exports and imports

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.

Poland: Act of 25 February 2011, No. 63 item 322, on the chemical substances and their mixtures as published in the Journal of Laws of the Republic of Poland (Dziennik Ustaw) and (Dziennik Ustaw) 25 November 2015 , item 1203.

15.2 Chemical safety assessment: None performed for substance.

16. OTHER INFORMATION

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

Revised Date: 30 SEPTEMBER 2020

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Changes provided on this SDS were based on the requirements of EU 2020/171 as of amendments February 6, 2020 regarding EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

The information and recommendations contained herein are, to the best of The Indium Corporation of America's knowledge and belief, accurate and reliable as of the date issued. The Indium Corporation of America does not warrant or guarantee their accuracy or reliability, and The Indium Corporation of America shall not be liable for any loss or damage arising out of the user thereof. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.