



SAFETY DATA SHEET

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

1.1 .Product Identifier: INDIUM OXIDE

SDS Number: SDS- IB010

Revised Date: 30 SEPTEMBER 2020

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

Product Use: Industrial Use – Indium Oxide, In₂O₃

1.3 Details of the supplier of the safety data sheet

MANUFACTURER/SUPPLIER/IMPORTER:

In America:

The Indium Corporation of America®.

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Technical & Safety Information: (315) 853-4900

Safety & SDS Information: nswarts@indium.com

Corporation web page: <http://www.indium.com>

In Europe:

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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****China Emergency: 86+ 4008417580****ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation****SECTION 2. HAZARDS IDENTIFICATION****PRIMARY ROUTES OF ENTRY:** Eye Inhalation Skin Ingestion

NTP

Carcinogen listed in

IARC

OSHA

 Not Listed**2.1 Classification:**

Classification

Specific target organ toxicity, single exposure; respiratory tract irritation-3

2.2 Label Elements

Signal Word: Warning

Hazard statement(s)

H335 May cause respiratory irritation

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 + 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 + 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:** Causes eye irritation.**Ingestion:** May be harmful if swallowed.

Inhalation:	Causes respiratory irritation. May be harmful if inhaled.
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.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	CAS Registry #/EINECS#
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INDIUM OXIDE	1312-43-2/215-193-9
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<http://www.indium.com>

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 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 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. Do not sweep material.

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:

		<u>TWA</u>	<u>STEL</u>
	<u>CAS#/EINECS#</u>	mg/m ³	mg/m ³
INDIUM OXIDE	1312-43-2/215-193-9	-	-
(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

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 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Yellow solid powder	Boiling Point/Range:	850C (1562F)
Odor:	Odorless	Melting Point/Freezing Point:	1910C +10C (3470F + 50F)
Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	7.179 (H ₂ O=1).	pH:	Not applicable
Vapour Pressure:	<0.01 mm@25C	Solubility in Water:	Insoluble
Vapour Density:	(air=1) Not applicable.	Partition coefficient:	Not established
Relative Density:	7.18 g/ml @25C	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 277.64 g/mol

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:

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		

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

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

11.3 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

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 international 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 proper shipping name: None

14.2 Transport hazard class(s): None

14.3 Packing group: None

14.4 Environmental hazards: None

14.5 Special precautions for user: None

14.6 Transport in bulk: Not applicable

Marine pollutant: No

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 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.

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.

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.