



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

SAFETY DATA SHEET

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

Product Identifier: INDIUM TRICHLORIDE SOLUTION
MSDS Number: MSDS- IB017 **Revised Date:** 17 SEPTEMBER 2012
Product Use: Industrial Use – Indium Trichloride Solution, InCl₃ in solution

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

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In America:

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

Eye Inhalation Skin Ingestion NTP IARC OSHA Not Listed

Carcinogen listed in**Classification:**

Risk Phrases: R20/21/22,R36/37/38



Signal Word: Warning

Hazard statement(s)

H302 Harmful if swallowed
 H314 Causes severe skin burns and eye damage

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
 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)
 P310 Immediately call a POISON CENTER or doctor/physician

OTHER HAZARDS:**POTENTIAL HEALTH EFFECTS:**

- Eye Contact:** May cause severe damage and possible burns to eyes..
- Ingestion:** 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 or burns.
- 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**3.2 Mixture:**

Components	CAS Registry #/EINECS#
INDIUM TRICHLORIDE	10025-82-8/233-043-0
WATER	7732-18-5
PROPRIETARY	-

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

4. FIRST AID MEASURES**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.

Most important symptoms and effect, both acute and delayed:

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

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 or if burns to eyes.
If respiratory discomfort is evident seek immediate medical advice.

5. FIRE FIGHTING MEASURES

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

Special hazards arising from the substance or mixture:
May produce toxic oxide fumes if burning.

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

6. ACCIDENTAL RELEASE MEASURES

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. Use an approved respirator with acid cartridge.

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 corrosive.

Methods and material for containment and cleaning up:

Spill or leak procedures: Absorb material. Place into pail or drum and tightly cap.

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

7. HANDLING AND STORAGE

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.

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.

Specific End Use(s): Not specified.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters:

		<u>TWA</u>	<u>STEL</u>
	<u>CAS#/EINECS#</u>	mg/m ³	mg/m ³
INDIUM TRICHLORIDE	10025-82-8/233-043-0	-	-
(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
WATER	7732-18-5	N.E.	N.E.
PROPRIETARY	-	N.E.	N.E.

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 An acid cartridge may be required when concentrations are expected to be elevated.

Keep exposures to as low as possible. 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 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**Information on basic physical and chemical properties:**

Appearance:	Clear Liquid	Boiling Point/Range:	100-115C
Odor:	Slight Odor	Melting Point/Freezing Point:	Not available
Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	(H ₂ O=1).	pH:	1 – 2 Corrosive
Vapour Pressure:	<0.01 mm@25C	Solubility in Water:	soluble
Vapour Density:	(air=1) 1.0-1.8 g/cm ³ .	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		MW – 221.18g/mol

10. STABILITY AND REACTIVITY

<u>Reactivity:</u>	Stable.
<u>Chemical Stability:</u>	Stable
<u>Possibility of Hazardous Reactions:</u>	Not established
<u>Conditions To Avoid:</u>	Not established
<u>Incompatible Materials:</u>	Avoid contact with strong acids, bases or oxidizing agents.
<u>Hazardous Decomposition / Combustion:</u>	Harmful toxic oxide fumes may form at elevated temperatures.
<u>Hazardous Polymerization:</u>	Will not occur.

11. TOXICOLOGICAL INFORMATION**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>	Corrosive	<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 (serious irritation/burns) /skin (irritation)/ingestion (harmful)		
<u>Interactive effects:</u>	None known		

Symptoms related to the physical, chemical and toxicological characteristics:

May cause irritation by skin. Causes serious eye irritation/burns. Harmful if swallowed.

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

LD50 Oral rodent-rat >1,1000 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: NL1770000 (indium)

12. ECOLOGICAL INFORMATION

Toxicity: No information available

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility in soil: No information available

Results of PBT and vPvB assessments: No data is available

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

13. DISPOSAL CONSIDERATION

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.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Hazardous.

UN proper shipping name: 3264

Transport hazard class(s): Corrosive Liquid, Acidic, Inorganic

Packing group: III

Environmental hazards: None

Special precautions for user: None

Transport in bulk: Not applicable

UN3264, Corrosive Liquid, Acidic, Inorganic, N.O.S., 8, PG III (indium trichloride solution)



15. REGULATORY INFORMATION

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

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 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 20 May 2010 EU No 453/2010 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 2037/2000.

Chemical safety assessment: None performed for mixture.

16. OTHER INFORMATION

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

Risk Phrases:

- R20/21/22 Harmful by inhalation, in contact with skin and if swallowed
R36/37/38 Irritating to eyes, respiratory system and skin

Safety Phrases:

- S20/21 When using do not eat, drink or smoke
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
S7 Keep container tightly closed

Revised Date: 17 SEPTEMBER 2012
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Changes provided on this SDS were based on the requirements of EU No. 453/2010 of May 20, 2010 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).

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.