



**INDIUM CORPORATION OF AMERICA ®/ EUROPE®/ ASIA PACIFIC®**  
**INDIUM CORPORATION (SUZHOU) ®**  
**SAFETY DATA SHEET**

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** INDIUM /TIN TETRACHLORIDE SOLUTION (SnCl<sub>4</sub>/InCl<sub>3</sub> Solution)

**SDS Number:** SDS-5637

**Revised Date:** 15 APRIL 2014

**Product Use:** Industrial use - Indium Trichloride/Tin (IV) Chloride Pentahydrate Solution (InCl<sub>3</sub>/SnCl<sub>4</sub> - Solution)

### MANUFACTURER:

#### In America:

The Indium Corporation of America  
1676 Lincoln Ave., Utica NY 13502  
Information: (315) 853-4900  
nswarts@indium.com

#### EMERGENCY PHONE:

**CHEMTREC 24 hrs.**  
**USA: 1 (800) 424-9300**  
**Outside USA: +1 (703) 527-3887**

#### In Europe:

Indium Corporation of Europe  
7 Newmarket Ct.  
Kingston, Milton Keynes, UK, Mk 10 OAG  
Information: +44 [0] 1908 580400

#### 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

## 2. HAZARDS IDENTIFICATION

### PRIMARY ROUTES OF ENTRY:

\*Eye      \*Inhalation      \*Skin      \*Ingestion      NTP

### CARCINOGEN LISTED IN:

IARC      OSHA      \*Not Listed



Signal Word:    Danger

### 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/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 +P310    IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
 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 minutes)

### GHS Classification

Acute toxicity, Oral (Category 4)  
 Skin corrosion (Category 1B)  
 Serious eye damage (Category 1)

### POTENTIAL HEALTH EFFECTS:

- Eye Contact:**    May cause severe damage and possible burns.
- 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 could cause pulmonary damage. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract.
- Skin Contact:**    May cause skin irritation or burns. 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. Injection of inorganic salts produces diarrhea, muscle paralysis and twitching.  
 Target Organs: blood, heart, liver, kidney

**Other:** Hygiene practices should be in place when handling this product. Avoid breathing fumes/vapors.

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

**Warning:** This product contains a chemical known to the State of California to cause cancer and/or birth defects (or other reproductive harm). ( Might have trace levels of lead).

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt	CAS Registry #/EINECS	PEL mg/m <sup>3</sup>	TLV-TWA mg/m <sup>3</sup>	TLV-STEL mg/m <sup>3</sup>
INDIUM TRICHLORIDE	50 - 55	10025-82-8/233-043-0	0.1 (as Indium*)	0.1	-
		(EU)	-	0.1 (as Indium)	0.3
		(Canada)	-	0.1 (as Indium)	0.3
		(Singapore)	0.1(as indium)	-	-
		(Mexico)	-	0.1(as indium)	0.3
		(China)	-	0.1(as indium)	0.3
WATER	41 - 47	7732-18-5	N.E.	N.E.	N.E.
TIN CHLORIDE PENTAHYDRATE	4 - 7	10026-06-9	N.E.	N.E.	N.E.

[(tin chloride (IV) (CAS# 7646-78-8)]

**DOES NOT CONTAIN ANY EU REPORTABLE SUBSTANCES OF VERY HIGH CONCERN (SVHC)**

N.E. = Not established EU = EUROPEAN EXPOSURE LIMITS SYMBOL: X<sub>n</sub>,C RISK PHRASES: R22, R36/37/38

\* Indium CAS# 7440-74-6

### 4. FIRST AID MEASURES

- Eye Contact:** Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention.
- 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.

## 5. FIRE FIGHTING MEASURES

<b>Flash Point:</b>	Not established.	<b>Method:</b>	Not established.
<b>Auto-ignition Temperature:</b>	Not established.		
<b>Flammable Limits:</b>	Limits not established. Not flammable.		
<b>Extinguishing Media:</b>	Use extinguishers appropriate for the surrounding fire conditions.		
<b>Special Fire Fighting Procedures:</b>	Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.		

## 6. ACCIDENTAL RELEASE MEASURES

<b>Spill or Leak Procedures:</b>	Isolate spill and clean up with absorbent or neutralize. Place material in proper waste container. An approved air purifying respirator with acid gas/particulate cartridge and other personal protective equipment such as gloves is recommended. Dispose of in accordance with Federal, State and Local regulations. In Europe dispose of following the Special Waste Regulations. Indium may have reclaim value.
----------------------------------	---

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment. Use good work practices when handling corrosive material. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed. Avoid contact with skin and eyes.
<b>Storage Precautions:</b>	Store product in tightly capped original containers in a cool, well ventilated and dry area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Engineering Controls:</b>	Local and/or Mechanical (general) exhaust ventilation is recommended to control any air contaminants.
<b>Personal protection:</b>	
<b>Eyes:</b>	Wear chemical safety glasses/tight fitting goggles. The addition of a face shield may be necessary during some work practices. Avoid splash.
<b>Respirator:</b>	A NIOSH approved air-purifying respirator with an acid gas/particulate filter is recommended under certain circumstances where airborne concentrations are expected to be elevated.
<b>Skin:</b>	Compatible acid resistant chemical gloves are recommended.
<b>Other:</b>	Lab coat, apron, eyewash fountain in work area. Avoid the use of contact lenses in high fume/splash areas. Eye wash/shower unit.
<b>Work/Hygienic</b>	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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Light Yellow Liquid	<b>Boiling Point:</b>	Not established
--------------------	---------------------	-----------------------	-----------------

<b>Odor:</b>	Slight Odor	<b>Melting Point:</b>	Not applicable
<b>Specific Gravity:</b>	1.703	<b>pH:</b>	<1 (Corrosive)
<b>Vapor Pressure:</b>	Not applicable.	<b>Solubility in Water:</b>	Soluble
<b>Vapor Density:</b>	Not established		

## 10. STABILITY AND REACTIVITY

<b>General:</b>	Stable.
<b>Conditions to Avoid:</b>	Not established.
<b>Incompatible Materials:</b>	Bases
<b>Hazardous Decomposition / Combustion:</b>	Toxic fumes may form at elevated temperatures. Deliquescent, hydrolyzes to form $\text{In}(\text{OH})_3$
<b>Hazardous Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>Carcinogenicity:</b>	<b>National Toxicology Program (NTP):</b>	No
	<b>Occupational Safety &amp; Health Administration (OSHA):</b>	No
	<b>U.N. International Agency for Research on Cancer (IARC):</b>	No

**LD50:** See NIOSH RTECS# NL1400000 (Indium) XP8870000 (tin chloride pentahydrate)

<b>Irritancy of Product:</b>	May be an irritant	<b>Mutagenicity:</b>	Not established
<b>Sensitization to Product:</b>	Not established	<b>Teratogenicity:</b>	Not established
<b>Reproductive Toxicity:</b>	Not established	<b>Synergistic Products:</b>	Not established

Inorganic tin salts are poorly absorbed in the body. Tin salts that have gained access to the blood stream are highly toxic and produce neurologic damage and paralysis. The actual toxicity is complicated by the hydrolysis in the body fluids. Material is extremely destructive to tissue of the mucous membranes and upper respiratory system, eyes and skin.

## 12. ECOLOGICAL INFORMATION

Product not tested.

## 13. DISPOSAL CONSIDERATION

**Waste Disposal Method:** Scrap indium metal may have some value. Contact a commercial reclaimer for recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Special Waste Regulations. Product is corrosive.

## 14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Shipping Name: UN3264, Corrosive Liquid, Acidic, Inorganic, N.O.S., 8, PGIII (indium trichloride and stannic chloride)

pentahydrate solution)

North American Emergency Guide Book - Guide #154



Marine pollutant: No

## 15. REGULATORY INFORMATION

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.).

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).



Canadian WHMIS: Class E Corrosive Material

This product has been classified in accordance with the guidelines set by the Dept. of Industrial Health of the Republic of Singapore.

This product has been classified using the Chinese Occupational Exposure Limit of Hazardous Agent in the Workplace, GBZ2-2002.

This product has been classified under the Mexican regulations NOM-018-STPS-2000 and NOM-010-STPS-1999.

SARA 313 listing - 40 CFR 372.65: None

California Prop 65: Warning: This product contains a chemical(s) known to the State of California to cause cancer and/or Birth defects (or other reproductive harm). (Might have trace levels of lead).

Swiss Poison Class: 4 (Indium)

All ingredients are listed on the EPA TSCA Inventory.

EC Classification, Packaging and Labeling Requirements:  
Symbol and Hazard Classification of Product X<sub>n</sub>, C

### Risk Phrases:

R22 Harmful 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/gas/vapor/spray

S24/25	Avoid contact with skin and eyes
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
S28	After contact with skin wash immediately with plenty of soap and water

## 16. OTHER INFORMATION

<b>HMIS Hazard Rating:</b>	<b>Health:</b>	3
	<b>Fire:</b>	0
	<b>Reactivity:</b>	0

**Revised Date:** 15 APRIL 2014

**Prepared by:** Nancy Swarts, Indium Corporation of America

**Approved by:** Nancy Swarts, Indium Corporation of America

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