



SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: INDIUM SULFAMATE PLATING BATH

SDS Number: SDS-IB002

Revised Date: 26 APRIL 2018

Product Use: INDUSTRIAL USE – Indium Plating bath solution. Use includes surface preparations, decorative finishing on metals and plastics, sealing applications, use in aircraft bearings and electrical interconnections in microelectronic devices. Refer to Indium Product Data Sheet for further information on the use. <http://www.indium.com> technical documents and applications notes.

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

*Eye *Inhalation *Skin *Ingestion

CARCINOGEN LISTED IN:

NTP IARC OSHA *Not Listed

GHS:



Signal Word: Warning

Hazard statement(s)

- H303 May be harmful if swallowed
- 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 + 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)

POTENTIAL HEALTH EFFECTS:

Eye Contact: May cause severe irritation and possible burns.

Ingestion: May cause burning and irritation or damage of mouth, stomach and other internal organs.

Inhalation: Possible damage to nasal and respiratory passages and mucous membranes.

Skin Contact: May cause skin irritation.

Chronic: Signs and symptoms of exposure are difficulty breathing, watery eyes, red irritating skin, abdominal pain and discomfort. 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.

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

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	% wt/v	CAS Registry #/EINECS	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
INDIUM SULFAMATE	10-12	66027-93-8/266-072-2	N.E.	N.E.	N.E.
SULFAMIC ACID	2-4	5329-14-6/226-218-8	N.E.	N.E.	N.E.
SODIUM SULFAMATE	14-16	13845-18-6/237-572-8	N.E.	N.E.	N.E.
INDIUM (30-60 grams/liter of solution)		7440-74-6/231-180-0			
		(US)	0.1	0.1	-
		(EU)	-	0.1	0.3
		(Canada)	-	0.1	0.3
		(Singapore)	0.1	-	-
		(Mexico)	0.1	-	0.3
		(China)	0.1	-	0.3
WATER		7732-18-5	N.E.	N.E.	N.E.

N.E. = Not established

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 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.

5. FIRE FIGHTING MEASURES

Flash Point: Not established. **Method:** Not established.

Auto-ignition Temperature: Not established.

Flammable Limits: Limits not established. Not flammable. Will not burn.

Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions.

Special Fire Fighting Procedures: Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: 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

Handling: 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.

Storage Precautions: Store product in tightly capped original containers in a cool, well ventilated and dry area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation is recommended to control any air contaminants.

Personal protection:

Eyes: Wear chemical safety glasses/goggles. The addition of a face shield may be necessary during some work practices.

Respirator: 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.

Skin: Compatible chemical resistant gloves. Rubber or vinyl gloves are recommended.

Other: Lab coat, apron, eyewash fountain in work area. Avoid the use of contact lenses in high fume/splash areas.

Work/Hygienic 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.

Refer to Indium Corporation of America's Application Notes: *Proper Surface Preparation for Indium Plating.*

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear or amber liquid	Boiling Point:	Not established
Odor:	Odorless	Melting Point:	Not applicable
Specific Gravity:	H ₂ O = 1	pH:	2 (Corrosive)
Vapor Pressure:	Not applicable.	Solubility in Water:	Soluble
Vapor Density:	Not applicable		

Note: when using product the pH is adjusted as needed. Review the Product Data Sheet for proper use of the plating bath solution. Preferred pH is 1.5-2.

10. STABILITY AND REACTIVITY

General:	Stable.
Conditions to Avoid:	May give off toxic fumes and possible oxides of constituents when exposed to Unusually high temperatures. Not established.
Incompatible Materials:	Avoid contact with bases and oxidizers.
Hazardous Decomposition / Combustion:	Toxic fumes may form at elevated temperatures.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity:	National Toxicology Program (NTP):	No	
	Occupational Safety & Health Administration (OSHA):	No	
	U.N. International Agency for Research on Cancer (IARC):	No	
LD50:	Not established.	LC50:	Not established.

12. ECOLOGICAL INFORMATION

Contains a substance that is harmful to aquatic organisms, and may cause long term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Scrap indium metal may have some value. Contact a commercial indium reclaimer for recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations. In Europe follow the Special Waste Regulations. Refer to Indium Corporation application bulletins regarding reclamation and disposal of indium sulfamate plating bath solution. <http://www.indium.com> see under Technical Documents.

14. TRANSPORT INFORMATION

Transport in accordance with applicable international regulations and requirements.

Shipping Name: UN 3264, Corrosive Liquid, Acidic, Inorganic, N.O.S., 8, PGIII (sulfamic acid, indium sulfamate mixture)



North America Emergency Guidebook – 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 in accordance with the Mexican regulations NOM-018-STPS-2015 and NOM-010-STPS-2014.



WARNING: This product can expose you to chemicals including [trace amounts of lead] which is known to the State of California to cause cancer, and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

SARA 313 listing - 40 CFR 372.65: None

All ingredients are listed on the EPA TSCA Inventory.

This product has been classified in accordance with: Malaysian – OCCUPATIONAL SAFETY AND HEALTH (CLASSIFICATION, LABELING AND SAFETY DATA SHEET OF HAZARDOUS CHEMICALS) REGULATION OCTOBER 2013 – (CLASS).

Regulatory Information China:

GB/T 16483-2008, GB/T 17519-2013, Safety Data Sheets for Chemical Products

GB 30000.2-29-2013, Rules for classification and labeling of chemicals (GHS)

Decree No. 591: Regulations on the Control Over Safety of Hazardous Chemicals.

This product has been classified using the Chinese Occupational Exposure Limit of Hazardous Agents in the Workplace, GBZ2-2007.

16. OTHER INFORMATION

HMIS Hazard Rating:	Health:	2
	Fire:	0
	Physical Hazards:	0

Revised Date: 26 APRIL 2018

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