



Material Safety Data Sheet (MSDS)

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: **Indium**
Purity: 99.999%
Product Number: EA10001
Source: Aldrich
CAS-No.: 744-74-6

1.2 Relevant Identified Uses

Identified Uses: Equipment Calibration, Laboratory Chemicals, Synthesis of Substances
Advised Against: None suggested

1.3 Company Identification (MSDS Supplier)

Company: Engineering Analytics Laboratories
Address: PO Box 500146, Malabar, FL 32950, USA
Telephone: +1 321-720-6578
E-mail: EngAnLab@gmail.com

1.4 Emergency Telephone Number

Emergencies: Dial 911 first!

Emergency Phone #: +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal Word: Warning

Hazard Statement(s): H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary Statement(s): P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink, or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P322 Specific measures (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards Not Otherwise Classified (HNOC) or Not Covered by GHS

None known.

3. COMPOSITION (INFORMATION ON INGREDIENTS)

3.1 Substances

Formula: In
Molecular Weight: 114.82 g/mol
CAS-No.: 7440-74-6
EC-No.: 231-180-0

Hazardous components

Component	Classification	Concentration
Indium	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H302 + H312 + H332, H315, H319, H335	<= 100%

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Turn the individual's head and/or body to one side, and rinse the mouth with water (if safe and possible to do so). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for Firefighters

Wear self-contained breathing apparatus for firefighting, if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment (PPE), and Emergency Procedures

Avoid dust formation, and breathing dust. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

6.2 Environmental Precautions

Do not let product enter drains.

6.3 Clean-up and Containment Methods

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Disposal

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for Safe Storage, including incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Components with workplace control parameters:

Component	CAS #	Value	Control Parameters	Basis
Indium	7440-74-6	TWA	0.100000 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks:	Pulmonary Edema Pneumonitis Dental Erosion Malaise		
		TWA	0.100000 mg/m ³	USA. NIOSH Recommended Exposure Limits
		TWA	0.100000 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks:	Pulmonary Edema Pneumonitis Dental Erosion Malaise		
		TWA	0.1 mg/m ³	USA. NIOSH Recommended Exposure Limits
		TWA	0.1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
	Remarks:	Pulmonary Edema Pneumonitis Dental Erosion Malaise		
		PEL	0.1 mg/m ³	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Personal Protective Equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166, recommended. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

Splash contact

Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure

Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Basic Physical and Chemical Properties

Appearance Form: Wire

Appearance Color: Silverwhite

Odor: Odorless

Odor Threshold: *No data available*

pH: *No data available*

Melting/freezing point:

Melting point (Literature Verified): 156.59 °C (313.86 °F)¹.

Initial boiling point and boiling range:

2,000 °C (3,632 °F) at 1,013 hPa (760 mmHg)

Flash point: *Not applicable*

Evaporation rate: *No data available*

Flammability (solid, gas): *No data available*

Upper/lower flammability or explosive limits: *No data available*

Vapor pressure: <0.01 hPa (<0.01 mmHg) at 25 °C (77 °F)

Vapor density: *No data available*

Relative density: 7.3 g/cm³ at 25 °C (77 °F)

Water Solubility: Insoluble

Partition coefficient: n-octanol/water: *No data available*

Auto-ignition Temperature: *No data available*

Decomposition Temperature: *No data available*

Viscosity: *No data available*

Explosive Properties: *No data available*

Oxidizing Properties: *No data available*

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical Stability

Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible Materials

Strong oxidizing agents, Sulphur compounds, Strong acids, Halogens, Acetonitrile, Tellurium, Arsenic powder, Phosphorous

10.6 Hazardous Decomposition Products

Hazardous decomposition products formed under fire conditions: **Indium/Indium oxide**

Other decomposition products: *No data available*

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological Effects

Acute Toxicity: *No data available*

Inhalation: *No data available*

Dermal: *No data available*

Skin Corrosion/Irritation: *No data available*

Serious Eye Damage/Eye Irritation: *No data available*

Respiratory or Skin Sensitization: *No data available*

Germ Cell Mutagenicity: *No data available*

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity: *No data available*

Specific Target Organ Toxicity - Single Exposure: Inhalation – May cause respiratory irritation

Specific Target Organ Toxicity - Repeated Exposure: *No data available*

Aspiration Hazard: *No data available*

Additional Information

RTECS: NL1050000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach – Irregularities – Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and Degradability

No data available

12.3 Bioaccumulative Potential

No data available

12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB Assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other Adverse Effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods.

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	Indium	Revision Date
CAS-No.:	7440-74-6	1994-04-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	Indium	Revision Date
CAS-No.:	7440-74-6	1994-04-01

Pennsylvania Right To Know Components

	Indium	Revision Date
CAS-No.:	7440-74-6	1994-04-01

New Jersey Right To Know Components

	Indium	Revision Date
CAS-No.:	7440-74-6	1994-04-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute:	Acute toxicity
Eye Irrit.:	Eye Irritation
H302:	Harmful if swallowed.
H302 + H312 +:	Harmful if swallowed, in contact with skin or inhaled.
H332:	
H312:	Harmful in contact with skin.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard:	0

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further Information

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17. Literature Sources

1. R. Sabbah et al., *Thermochimica Acta*, 331 (1999) pg. 123 – 126

Preparation Information

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