



SAFETY DATA SHEET

Issue date: 08-30-2018
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Version #: 02

MATERION

1. Chemical and company identification

Name of chemical (Product name) Indium Metal

Supplier's company name, address and phone number

Company name Materion Advanced Materials

Address 6070 Parkland Boulevard
Mayfield Heights, OH 44124 United States

Contact person Theodore Knudson

Telephone 1.216.383.4019

No information available

e-mail address ehs@materion.com

Emergency telephone number See Section 16.

Reference number G03

2. Hazards identification

GHS classification

Physical hazards The product is not classified according to GHS.

Health hazards Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards The product is not classified according to GHS.

GHS label elements

Pictograms



Signal words Warning

Hazard statement May cause respiratory irritation.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid breathing dust. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

Response If experiencing respiratory symptoms: Call a poison center/doctor.

Storage Store locked up.

Disposal Dispose of contents/container (in accordance with related regulations).

Other hazards which do not result in classification None known.

Supplemental information For further information, please contact the Product Stewardship Department at +1.216.383.4019.

Main symptoms and emergency overview

Main symptoms Prolonged exposure may cause chronic effects.

Emergency overview May cause respiratory irritation.

3. Composition/information on ingredients

Substance or mixture Substance

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Indium	7440-74-6			99.9 - 100

Chemical formula In (7440-74-6)

4. First aid measures

If inhaled	Move to fresh air. Call a physician if symptoms develop or persist.
If on skin	Wash off with soap and water. Get medical attention if irritation develops and persists.
If in eyes	Rinse with water. Get medical attention if irritation develops and persists.
If swallowed	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Irritation of eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Protection of first-aid responders	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Notes to physician	Provide general supportive measures and treat symptomatically.

5. Fire-fighting measures

Extinguishing media	Dry chemicals, sand, dolomite etc. Carbon dioxide (CO2).
Extinguishing media to avoid	Water.
Specific hazards	No unusual fire or explosion hazards noted.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Wear suitable protective equipment.
General fire hazards	No unusual fire or explosion hazards noted.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid generation and spreading of dust. Avoid inhalation of dust. Avoid breathing mist or vapor. Ensure adequate ventilation.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Methods and materials for containment and cleaning up	Pick up and arrange disposal without creating dust. Shovel up and place in a container for salvage or disposal. Sweep up or gather material and place in appropriate container for disposal.

7. Handling and storage

Handling	
Technical measures (e.g. Local and general ventilation)	Provide adequate ventilation.
Safe handling advice	When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Hygiene measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.
Storage	
Safe storage conditions	Not available.
Safe packaging materials	Keep locked up.

8. Exposure controls/personal protection

Control parameters Follow standard monitoring procedures.

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
Indium Metal	TWA	0.1 mg/m3
Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0.1 mg/m3

Biological limit values

Japan. BELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits Based on Biological Monitoring)

Material	Value	Determinant	Specimen	Sampling Time
Indium Metal	3 µg/l	Indium	Serum	*
Components	Value	Determinant	Specimen	Sampling Time
Indium (CAS 7440-74-6)	3 µg/l	Indium	Serum	*

* - For sampling details, please see the source document.

Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection	In case of inadequate ventilation, use respiratory protection.
Hand protection	Wear protective gloves.
Eye protection	If contact is likely, safety glasses with side shields are recommended.
Skin and body protection	Wear suitable protective equipment.

9. Physical and chemical properties

Physical state	Solid.
Form	Solid.
Color	Silver-white.
Odor	None.
Odor threshold	Not applicable.
Melting point/freezing point	313.88 °F (156.6 °C)
Boiling point, initial boiling point, and boiling range	3761.6 °F (2072 °C)
Combustibility	Not applicable.
Lower and upper explosion limit / flammability limit	
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Flash point	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
pH	Not applicable.
Kinematic viscosity	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water) (log value)	Not applicable.
Vapor pressure	< 0.0000001 kPa (77 °F (25 °C))
Density and/or relative density	
Density	7.31 g/cm ³ at 20 °C
Relative density	Not applicable.
Vapor density	Not applicable.
Particle characteristics	Not available.
Other information	
Evaporation rate	Not applicable.

Explosive limit	Not applicable.
Explosive properties	Not explosive.
Molecular formula	In
Molecular weight	114.82 g/mol
Oxidizing properties	Not oxidizing.
Specific gravity	7.31
Viscosity (Coefficient of viscosity)	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Acids. Sulfur. Halogens.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity	None known.
Skin corrosion/irritation	Not relevant, due to the form of the product.
Serious eye damage/eye irritation	May cause eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Japan Society for Occupational Health: Carcinogen	
Indium (CAS 7440-74-6)	2A Probably carcinogenic to humans.
Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Other information	None known.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	
Bioaccumulation	No data available.
Mobility in soil	No data available.
Hazardous to the ozone layer	No data available.
Other hazardous effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
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Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Local disposal regulations Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

National regulations Follow regulation in section 15 for domestic transportation.

15. Regulatory information

Industrial Safety and Health Act

Notifiable substances

Indium

Table 9 Ordinance No. 58

Labeling substances

INDIUM (POWDER)

Poisonous and Deleterious Substances Control Act

Specified poisonous substances

Not regulated.

Poisonous substances

Not regulated.

Deleterious substances

Not regulated.

Act on the Regulation of Manufacture and Evaluation of Chemical Substances

Class I specified chemical substances

Not regulated.

Class II specified chemical substances

Not regulated.

Monitoring chemical substances

Not regulated.

Priority Assessment Chemical Substances (PACs)

Not regulated.

Reporting Exempted Substances

Not regulated.

Law concerning Pollutant Release and Transfer Register

Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

Class 1 substances (substance name, ordinance number and content)

Indium and its compounds (as In) Ordinance No. 44

Class 2 substances (substance name, ordinance number and content)

Not regulated.

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule Not regulated.

Air Law, Enforcement Rule Not regulated.

Explosives Control Act

Not regulated.

16. Other information

Bibliography

HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"
JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)

Further information

Transportation Emergency
Call Chemtrec at:
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402

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Other information

Revised information in Section 16.