



# MATERIAL SAFETY DATA SHEET

**MATERION**

## 1. Chemical product and company identification

**A. Product name** Indium Metal

### Other means of identification

SDS number G03

### B. Recommended use and Limitations on use

**Recommended use** Industrial uses: Uses of substances as such or in preparations at industrial sites

**Limitations on use** Consumer uses: Private households (= general public = consumers)

### C. Supplier information

**Company name** Materion Advanced Materials Germany GmbH

**Address**  
Borsigstrasse 10  
Alzenau 63755  
Germany

**Email** Materion.Germany@materion.com

**Contact person** Hermann Schmiing

**Emergency telephone number** 49.60.23.91.82.0

**MSDS number** G03

## 2. Hazards identification

### A. Hazard category/Classification

**Physical hazards** Not classified.

**Health hazards** Specific target organ toxicity, single exposure Category 3 respiratory tract irritation  
Specific target organ toxicity, repeated exposure Category 1

**Environmental hazards** Not classified.

### B. Warning label items including precautionary statement

#### • Pictogram



• **Signal word** Danger

#### • Hazard statement

H335 May cause respiratory irritation.  
H372 Causes damage to organs through prolonged or repeated exposure.

#### • Precautionary statement

##### Prevention

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P261 Avoid breathing dust.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P284 Wear respiratory protection.

##### Response

P314 Get medical advice/attention if you feel unwell.  
P342 + P311 If experiencing respiratory symptoms: Call a poison center/doctor.

## Storage

P405 Store locked up.

## Disposal

P501 Dispose of contents/container (in accordance with related regulations).

**C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)** None known.

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

## 3. Composition/information on ingredients

Chemical identity	Common and alternative names	CAS number	ID number	Content in percent (%)
Indium		7440-74-6	KE-20985	99.9 - 100

## 4. First aid measures

- A. In case of eye contact** Rinse with water. Get medical attention if irritation develops and persists.
- B. In case of skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.
- C. In case of inhalation** Move to fresh air. Call a physician if symptoms develop or persist.
- D. In case of swallowing** Rinse mouth. Get medical attention if symptoms occur.
- E. Note to physician** Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
- Most important symptoms/effects, acute and delayed** Irritation of eyes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Prolonged exposure may cause chronic effects.
- General advice** 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.

## 5. Fire-fighting measures

- A. Suitable (and unsuitable) extinguishing media**
- Suitable extinguishing media** Dry chemicals, sand, dolomite etc.
- Unsuitable extinguishing media** Water.
- B. Specific hazards arising from the chemical (example: hazardous combustion products)** No unusual fire or explosion hazards noted.
- C. Specific methods of fire-fighting**
- Special protective equipment for firefighters** Wear suitable protective equipment.
- Special fire fighting procedures** Move containers from fire area if you can do so without risk.
- 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

- A. Personal precautions, protective equipment and emergency measures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS. Avoid generation and spreading of dust.
- B. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.
- C. Methods and materials for containment and cleaning up** Pick up and arrange disposal without creating dust. Sweep up or gather material and place in appropriate container for disposal. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Shovel up and place in a container for salvage or disposal. For waste disposal, see section 13 of the MSDS.

## 7. Handling and storage

- A. Precautions for safe handling** Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
- B. Conditions for safe storage (including any incompatibilities)** Store in tightly closed container. Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials (see Section 10 of the MSDS).

## 8. Exposure controls/personal protection

### A. Exposure limit values, biological limit values, etc

#### Korea. OELs. Standards for Exposure to Chemical Substances and Physically Hazardous Factors

Material	Type	Value
Indium Metal	TWA	0.1 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>

Indium (CAS 7440-74-6)	TWA	0.1 mg/m <sup>3</sup>
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#### US. ACGIH Threshold Limit Values

Material	Type	Value
Indium Metal	TWA	0.1 mg/m <sup>3</sup>
<b>Components</b>	<b>Type</b>	<b>Value</b>

Indium (CAS 7440-74-6)	TWA	0.1 mg/m <sup>3</sup>
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**Biological limit values** No biological exposure limits noted for the ingredient(s).

**B. Appropriate engineering controls** Good general ventilation 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.

### C. Personal protective equipment

- **Respiratory protection** In case of inadequate ventilation, use respiratory protection.
- **Eye protection** If contact is likely, safety glasses with side shields are recommended.
- **Hand protection** Wear appropriate chemical resistant gloves.
- **Body protection** Wear suitable protective equipment. Use of an impervious apron is recommended.

**Hygiene measures** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### A. Appearance

**Physical state** Solid.  
**Form** Solid.  
**Color** Silver-white.

**B. Odor** None.

**C. Odor threshold** Not applicable.

**D. pH** Not applicable.

### E. Melting point/freezing point

**Melting point** 313.88 °F (156.6 °C)

**Freezing point** 313.88 °F (156.6 °C)

**F. Boiling point, initial boiling point, and boiling range** 3761.6 °F (2072 °C)

**G. Flash point** Not applicable.

**H. Evaporation rate** Not applicable.

**I. Flammability (solid, gas)** Not applicable.

**J. Upper/lower limit on flammability or explosive limits**

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.

**K. Vapor pressure** < 0.0000001 kPa (77 °F (25 °C))

**L. Solubility**

Solubility (water) Insoluble

**M. Vapor density** Not applicable.

**N. Specific gravity** 7.31

**O. n-octanol/water partition coefficient** Not applicable.

**P. Auto-ignition temperature** Not applicable.

**Q. Decomposition temperature** Not applicable.

**R. Viscosity** Not applicable.

**S. Molecular weight** 114.82 g/mol

**Other data**

Density 7.31 g/cm<sup>3</sup> at 20 °C

Explosive limit Not applicable.

Explosive properties Not explosive.

Molecular formula In

Oxidizing properties Not oxidizing.

Relative density Not applicable.

**10. Stability and reactivity**

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

**A. Stability and hazardous reaction potential**

**Stability** Material is stable under normal conditions.

**Hazardous reaction potential** No dangerous reaction known under conditions of normal use.

**B. Conditions to avoid (e.g. static discharge, shock or vibration, etc)** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

**C. Incompatible materials** Strong oxidizing agents. Acids. Sulfur. Halogens.

**D. Hazardous decomposition products** No hazardous decomposition products are known.

**11. Toxicological information****A. Information on likely routes of exposure**

- **Respiratory organs** No adverse effects due to inhalation are expected.
- **Skin** No adverse effects due to skin contact are expected.
- **Eyes** May cause eye irritation.
- **Mouth** Expected to be a low ingestion hazard.

**B. Information on health hazards**

- **Acute toxicity (list all possible routes of exposure)** None known.

• Corrosivity or irritation to the skin	Not relevant, due to the form of the product.
• Serious eye damage/eye irritation	May cause eye irritation.
• Respiratory sensitization	Not a respiratory sensitizer.
• Skin sensitization	This product is not expected to cause skin sensitization.
• Carcinogenic properties /Carcinogenicity	Not classifiable as to carcinogenicity to humans.
• Mutagenic properties /Mutagenicity	Not classified.
• 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	Causes damage to organs through prolonged or repeated exposure.
• Aspiration hazard	Not an aspiration hazard.

## 12. Ecological information

<b>A. Ecotoxicity</b>	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.
<b>Hazardous to the aquatic environment, acute hazard</b>	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.
<b>B. Persistence/degradability</b>	No data is available on the degradability of this substance.
<b>C. Bioaccumulative potential</b>	No data available.
<b>D. Mobility in soil</b>	The product is immiscible with water and will spread on the water surface. No data available.
<b>E. Other adverse effects</b>	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

<b>A. Method of disposal</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container (in accordance with related regulations).
<b>B. Disposal considerations (including disposal of contaminated containers or packaging)</b>	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.
<b>Waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

## 14. Transport information

<b>IATA</b>	
<b>A. UN number</b>	Not applicable.
<b>B. UN proper shipping name</b>	Not applicable.
<b>C. Transport hazard class(es)</b>	
<b>Class</b>	Not applicable.
<b>Subsidiary risk</b>	-
<b>D. Packing group</b>	Not applicable.
<b>E. Environmental hazards</b>	No.
<b>F. Special precautions for user</b>	Not applicable.
<b>IMDG</b>	
<b>A. UN number</b>	Not applicable.
<b>B. UN proper shipping name</b>	Not applicable.
<b>C. Transport hazard class(es)</b>	
<b>Class</b>	Not applicable.
<b>Subsidiary risk</b>	-
<b>D. Packing group</b>	Not applicable.

**E. Environmental hazards**

**Marine pollutant** No.

**EmS** Not applicable.

**F. Special precautions for user** Not applicable.

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

**15. Regulatory information**

**A. Restrictions under the Industrial Safety and Health Law**

**Harmful Substances Prohibited from Manufacturing**

Not regulated.

**Harmful Substances Requiring Permission for Manufacture or Use**

Not regulated.

**Controlled Hazardous Substances**

Not regulated.

**Harmful Substances Requiring Special Medical Examination**

Not regulated.

**Workplace Environmental Monitoring Harmful Materials**

Not regulated.

**Occupational Exposure Limit**

Indium (CAS 7440-74-6)

**B. Restrictions under the Chemicals Control Law (Previously Toxic Chemicals Control Law)**

**Accidental Release Prevention Substances**

Not regulated.

**Act on the Registration and Evaluation of Chemicals**

**Banned Toxic Chemicals**

Not regulated.

**Designated Existing Chemicals Subject to Registration (PEC) (MoE No. 2015-92)**

Not listed.

**Restricted Chemical Substances**

Not regulated.

**Toxic Chemicals**

Not regulated.

**C. Restrictions under the Dangerous Substance Safety Management Act**

**D. Restrictions under the Wastes Control Act**

**Halogenated Materials in Waste Organic Solvents**

Not regulated.

**Hazardous Substances**

Not regulated.

**E. Restrictions under other foreign or domestic laws**

**Clean Air Conservation Act**

**Air Pollutants**

Not regulated.

**Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides (Rules on PIC, MoE No. 2014-252, Dec. 31, 2014; Standards for Pesticides, RDA No. 2014-26), as amended**

Not listed.

**Specific Air Pollutants**

Not regulated.

**Further information**

This material safety data sheet was prepared in accordance with Article 41 of the Industrial Safety and Health Law.

## Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

### Bibliography

ACGIH  
EPA: ACQUIRE database  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)  
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)  
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)  
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)  
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)  
Korea. Prohibited Chemical Substances (TCCL Article 11)  
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)  
Korea. Restricted Chemical Substances (TCCL Article 11)  
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)  
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List  
Korea. Toxic Chemicals (TCCL Article 10)  
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)  
Korea. Accidental Release Prevention Substances (Pres. Decree of Toxic Chemical Control Law, Ex. Order No. 19203, Tables 2 & 3, Dec 28, 2005)  
Korea. OELs (ISHL Article 42; MOL Public Notice No. 1986-45, as amended through MOEL Notice 2013-38, August 14, 2013)  
Korea. Prohibited Chemical Substances (AREC "K-REACH" Article 27; Designation of Toxic, Restricted or Banned Chemicals Appendices 4 and 5)  
Korea. Restricted Chemical Substances (AREC "K-REACH" Article 27; Designation of Toxic, Restricted or Banned Chemicals Appendices 2 and 3)  
KECI, January 27, 2015, amended through MoE 2016-138, July 13, 2016  
Korea. Toxic Chemicals (AREC "K-REACH" Article 20; Designation of Toxic, Restricted or Banned Chemicals Appendix 1)  
Korea. Toxic Release Inventory (TRI) Chemicals (MOE Public Notice No. 2002-166, Nov. 8, 2002)

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