



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Indium Based Products

**Other means of identification**  
**SDS number** W33

**Manufacturer/Importer/Supplier/Distributor information**  
**Manufacturer**

**Company name** Materion Advanced Materials Technologies and Services Inc.  
**Address** 2978 Main Street  
Buffalo, NY 14214  
Buffalo, NY 14214  
United States

**Telephone** 716-837-1000  
**Website** materion.com  
**E-mail** ehs1@materion.com

**Emergency phone number** (800) 424-9300 Chemtrec

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards**

Acute toxicity, oral	Category 4
Acute toxicity, inhalation	Category 4
Serious eye damage/eye irritation	Category 2B
Carcinogenicity	Category 2
Reproductive toxicity (fertility, the unborn child)	Category 1A
Specific target organ toxicity, repeated exposure	Category 2

**Environmental hazards**

Hazardous to the aquatic environment, acute hazard	Category 1
Hazardous to the aquatic environment, long-term hazard	Category 1

**OSHA defined hazards** Not classified.

**Label elements**



**Signal word** Danger

**Hazard statement** Harmful if swallowed. Causes eye irritation. Harmful if inhaled. Suspected of causing cancer. May damage fertility. May damage the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

**Precautionary statement**  
**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

<b>Response</b>	If swallowed: Call a poison center/doctor if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Rinse mouth. If eye irritation persists: Get medical advice/attention. Collect spillage.
<b>Storage</b>	Store locked up.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	63.49% of the mixture consists of component(s) of unknown acute oral toxicity. 87.14% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 87.14% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

### 3. Composition/information on ingredients

#### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Indium		7440-74-6	65 - 80
Lead		7439-92-1	25 - 40
Silver		7440-22-4	3 - 20
Copper		7440-50-8	2 - 6

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.
<b>Skin contact</b>	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
<b>Most important symptoms/effects, acute and delayed</b>	Exposed individuals may experience eye tearing, redness, and discomfort. Prolonged exposure may cause chronic effects.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

### Methods and materials for containment and cleaning up

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Collect spillage.

Large Spills: Wet down with water and dike for later disposal. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

### Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

### Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Do not taste or swallow. Avoid breathing dust. Avoid contact with eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

### Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of the reach of children.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Lead (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>

#### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Copper (CAS 7440-50-8)	PEL	1 mg/m <sup>3</sup>	Dust and mist.
		0.1 mg/m <sup>3</sup>	Fume.
Silver (CAS 7440-22-4)	PEL	0.01 mg/m <sup>3</sup>	

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0.1 mg/m <sup>3</sup>	
Lead (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	
Silver (CAS 7440-22-4)	TWA	0.1 mg/m <sup>3</sup>	Dust and fume.

#### US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m <sup>3</sup>	Dust and mist.
Indium (CAS 7440-74-6)	TWA	0.1 mg/m <sup>3</sup>	
Lead (CAS 7439-92-1)	TWA	0.05 mg/m <sup>3</sup>	
Silver (CAS 7440-22-4)	TWA	0.01 mg/m <sup>3</sup>	Dust.

## Biological limit values

### ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead (CAS 7439-92-1)	300 µg/l	Lead	Blood	*

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

**Control parameters** Follow standard monitoring procedures.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

#### Skin protection

**Hand protection** Wear protective gloves.

**Other** Wear appropriate chemical resistant clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** When using, do not eat, drink or smoke. 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

### Appearance

**Physical state** Solid.

**Form** Solid.

**Color** Not available.

**Odor** Not applicable.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** 313.88 °F (156.6 °C) estimated

**Initial boiling point and boiling range** 3164 °F (1740 °C) estimated

**Flash point** Not available.

**Evaporation rate** Not available.

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

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** 0.02 hPa estimated

**Vapor density** Not available.

**Relative density** Not available.

### Solubility(ies)

**Solubility (water)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not applicable.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Other information**

Density 8.75 g/cm<sup>3</sup> estimated  
 Specific gravity 8.76 estimated

**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** Acids. Strong oxidizing agents. Ammonia. Chlorine.  
**Hazardous decomposition products** No hazardous decomposition products are known.

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

**Inhalation** Harmful if inhaled.  
**Skin contact** No adverse effects due to skin contact are expected.  
**Eye contact** Causes eye irritation.  
**Ingestion** Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Exposed individuals may experience eye tearing, redness, and discomfort.

**Information on toxicological effects**

**Acute toxicity** Harmful if inhaled. Harmful if swallowed.

Product	Species	Test Results
Indium Based Products		
<u>Acute</u>		
<b>Dermal</b>		
LD50	Rat	20956 mg/kg estimated
<b>Oral</b>		
LD50	Rat	52391 mg/kg estimated
Components	Species	Test Results
Silver (CAS 7440-22-4)		
<u>Acute</u>		
<b>Dermal</b>		
LD50	Rat	> 2000 mg/kg
<b>Oral</b>		
LD50	Rat	> 5000 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation** Causes eye irritation.

**Respiratory or skin sensitization**

**Respiratory sensitization** Not available.

**Skin sensitization** This product is not expected to cause skin sensitization.

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** Suspected of causing cancer.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Lead (CAS 7439-92-1)

2B Possibly carcinogenic to humans.

**US. National Toxicology Program (NTP) Report on Carcinogens**

Lead (CAS 7439-92-1)

Reasonably Anticipated to be a Human Carcinogen.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**Reproductive toxicity** May damage the unborn child. May damage fertility.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** May cause damage to organs through prolonged or repeated exposure.

**Aspiration hazard** Not available.

**Chronic effects** Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. May cause damage to organs through prolonged or repeated exposure.

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product		Species	Test Results
Indium Based Products			
<b>Aquatic</b>			
Crustacea	EC50	Daphnia	0.0505 mg/l, 48 hours estimated
Fish	LC50	Fish	20.0406 mg/l, 96 hours estimated
Components		Species	Test Results
Silver (CAS 7440-22-4)			
<b>Aquatic</b>			
Crustacea	EC50	Water flea (Daphnia magna)	0.0002 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0023 - 0.0033 mg/l, 96 hours

\* Estimates for product may be based on additional component data not shown.

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available.

**Mobility in soil** No data available.

**Other adverse 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

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** 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).

**Contaminated packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**14. Transport information****DOT**

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substances, solid, n.o.s.
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Label(s)</b>	9
<b>Packing group</b>	III
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Special provisions</b>	8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33
<b>Packaging exceptions</b>	155
<b>Packaging non bulk</b>	213
<b>Packaging bulk</b>	240

**IATA**

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	Environmentally hazardous substance, solid, n.o.s.
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	No.
<b>ERG Code</b>	9L
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Other information</b>	
<b>Passenger and cargo aircraft</b>	Allowed.
<b>Cargo aircraft only</b>	Allowed.

**IMDG**

<b>UN number</b>	UN3077
<b>UN proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
<b>Transport hazard class(es)</b>	
<b>Class</b>	9
<b>Subsidiary risk</b>	-
<b>Packing group</b>	III
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-A, S-F
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.

**DOT; IATA; IMDG****General information**

DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

## 15. Regulatory information

### US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Copper (CAS 7440-50-8)

Listed.

Lead (CAS 7439-92-1)

Listed.

Silver (CAS 7440-22-4)

Listed.

### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Lead (CAS 7439-92-1)

Reproductive toxicity

Central nervous system

Kidney

Blood

Acute toxicity

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### Hazard categories

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

#### SARA 302 Extremely hazardous substance

Not listed.

#### SARA 311/312 Hazardous chemical

No

#### SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Lead	7439-92-1	25 - 40
Silver	7440-22-4	3 - 20
Copper	7440-50-8	2 - 6

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Lead (CAS 7439-92-1)

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

#### Safe Drinking Water Act (SDWA)

Not regulated.

### US state regulations

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

#### US - New Jersey RTK - Substances: Listed substance

Copper (CAS 7440-50-8)

Indium (CAS 7440-74-6)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

#### US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards

Copper (CAS 7440-50-8)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

#### US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.



**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd.**

**(a))**

Copper (CAS 7440-50-8)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

**US. Massachusetts RTK - Substance List**

Copper (CAS 7440-50-8)

Indium (CAS 7440-74-6)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

**US. New Jersey Worker and Community Right-to-Know Act**

Copper (CAS 7440-50-8)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

**US. Pennsylvania RTK - Hazardous Substances**

Copper (CAS 7440-50-8)

Indium (CAS 7440-74-6)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

**US. Pennsylvania Worker and Community Right-to-Know Law**

Copper (CAS 7440-50-8)

Indium (CAS 7440-74-6)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

**US. Rhode Island RTK**

Copper (CAS 7440-50-8)

Lead (CAS 7439-92-1)

Silver (CAS 7440-22-4)

**US. California Proposition 65**

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

Lead (CAS 7439-92-1)

Listed: October 1, 1992

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

Lead (CAS 7439-92-1)

Listed: February 27, 1987

**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

Lead (CAS 7439-92-1)

Listed: February 27, 1987

**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

Lead (CAS 7439-92-1)

Listed: February 27, 1987

**16. Other information, including date of preparation or last revision**

**Issue date** 08-20-2015

**Version #** 01

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