



SAFETY DATA SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	Indium-Tin
Synonyms	None.
Document number	1TZ
Materion Code	1TZ
Issue date	22-September-2016
Version number	02
Revision date	12-January-2018
Supersedes date	22-September-2016

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Not available.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Supplier

Company name	Materion Advanced Chemicals Inc.
Address	407 N. 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States
Division	Milwaukee
Telephone	414.212.0257
e-mail	advancedmaterials@materion.com
Contact person	Noreen Atkinson

1.4. Emergency telephone number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary	Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects. The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.
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2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms



Signal word None.

Hazard statements

H335	May cause respiratory irritation.
H320	Causes eye irritation.

Precautionary statements

Prevention

P270	Observe good industrial hygiene practices.
P264	Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

Response

P305 + P351 + P338

Wash hands after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P314

Get medical advice/attention if you feel unwell.

P337 + P313

If eye irritation persists: Get medical advice/attention.

Storage

Store away from incompatible materials.

Disposal

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

100 % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. 100 % of the mixture consists of component(s) of unknown acute oral toxicity. 100 % of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 100 % of the mixture consists of component(s) of unknown acute dermal toxicity. For further information, please contact the Product Stewardship Department at +1.800.862.4118.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Tin	48	7440-31-5 231-141-8	-	-	#
Classification: -					
Other components below reportable levels	52				

List of abbreviations and symbols that may be used above

#: This substance has been assigned Union workplace exposure limit(s).

M: M-factor

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation

Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact

Rinse with water. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

Nausea, vomiting. Diarrhoea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards

No unusual fire or explosion hazards noted.

5.1. Extinguishing media

Suitable extinguishing media

Powder. Dry sand.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed.

5.3. Advice for firefighters

Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special firefighting procedures Use water spray to cool unopened containers.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid prolonged exposure. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value	Form
Indium (CAS 7440-74-6)	MAK	0,1 mg/m ³	Inhalable fraction.
	STEL	0,2 mg/m ³	Inhalable fraction.
Tin (CAS 7440-31-5)	MAK	2 mg/m ³	Inhalable fraction.
	STEL	4 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values.

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	0,1 mg/m ³

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Indium (CAS 7440-74-6)	MAC	0,1 mg/m ³
	STEL	0,3 mg/m ³
Tin (CAS 7440-31-5)	MAC	2 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Tin (CAS 7440-31-5)	Ceiling	4 mg/m ³
	TWA	2 mg/m ³

Denmark. Exposure Limit Values

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TLV	0,1 mg/m ³	Dust.

Finland. Workplace Exposure Limits Components

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Tin (CAS 7440-31-5)	TWA	0,02 mg/m ³	Vapor and aerosol, inhalable fraction.
		0,004 ppm	Vapor and aerosol, inhalable fraction.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
Indium (CAS 7440-74-6)	STEL	1 mg/m ³
	TWA	1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces Components

Components	Type	Value
Tin (CAS 7440-31-5)	STEL	8 mg/m ³
	TWA	2 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Dust.

Ireland. Occupational Exposure Limits Components

Components	Type	Value
Indium (CAS 7440-74-6)	STEL	0,3 mg/m ³
	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Italy. Occupational Exposure Limits Components

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Netherlands. OELs (binding)

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Norway. Administrative Norms for Contaminants in the Workplace Components

Components	Type	Value
Indium (CAS 7440-74-6)	TLV	0,1 mg/m ³
Tin (CAS 7440-31-5)	TLV	2 mg/m ³

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value	Form
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	Inhalable fraction.

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value
Tin (CAS 7440-31-5)	STEL	4 mg/m ³
	TWA	2 mg/m ³

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Inhalable fraction.
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	

Spain. Occupational Exposure Limits

Components	Type	Value
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Total dust.
Tin (CAS 7440-31-5)	TWA	2 mg/m ³	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Indium (CAS 7440-74-6)	TWA	0,1 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Indium (CAS 7440-74-6)	STEL	0,3 mg/m ³ 0 ppm
	TWA	0,1 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Tin (CAS 7440-31-5)	TWA	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Follow standard monitoring procedures.

Derived no effect levels (DNELs)

Not available.

Predicted no effect concentrations (PNECs)

Not available.

8.2. Exposure controls**Appropriate engineering controls**

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.

Individual protection measures, such as personal protective equipment**General information**

Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection**- Hand protection**

Wear appropriate chemical resistant gloves.

- Other

Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

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.

Environmental exposure controls

Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Colour	Not available.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Melting point/freezing point	156,6 °C (313,88 °F) estimated
Initial boiling point and boiling range	2072 °C (3761,6 °F) estimated
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	0,00001 hPa estimated
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	630 °C (1166 °F) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2. Other information

Density	7,29 g/cm3 estimated
Specific gravity	7,29 estimated

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Acids. Chlorine.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms Nausea, vomiting. Diarrhoea.

11.1. Information on toxicological effects

Acute toxicity Not known.
Skin corrosion/irritation Due to partial or complete lack of data the classification is not possible.
Serious eye damage/eye irritation Due to partial or complete lack of data the classification is not possible.
Respiratory sensitisation Due to partial or complete lack of data the classification is not possible.
Skin sensitisation Due to partial or complete lack of data the classification is not possible.
Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.
Carcinogenicity Due to partial or complete lack of data the classification is not possible.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

Reproductive toxicity Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure Due to partial or complete lack of data the classification is not possible.
Aspiration hazard Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information No information available.
Other information Not available.

SECTION 12: Ecological information

12.1. Toxicity Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.
12.2. Persistence and degradability No data is available on the degradability of this product.
12.3. Bioaccumulative potential No data available.
Partition coefficient n-octanol/water (log Kow) Not available.
Bioconcentration factor (BCF) Not available.
12.4. Mobility in soil No data available.
12.5. Results of PBT and vPvB assessment Not available.
12.6. 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.

12.7. Additional information

Estonia Dangerous substances in groundwater Data

Tin (CAS 7440-31-5)

Tin (Sn) 150 UG/L

Tin (Sn) 3 UG/L

Estonia Dangerous substances in soil Data

Tin (CAS 7440-31-5)

Tin (Sn) 10 mg/kg

Tin (Sn) 300 mg/kg

Tin (Sn) 50 mg/kg

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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).
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.
EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Special precautions Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation for work with chemical agents.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Disclaimer

Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.