



PRODUCT INFORMATION 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	ITO Targets
Registration number	-
Document number	G42
Synonyms	None.
Issue date	15-February-2019
Version number	03
Revision date	25-August-2021
Supersedes date	15-February-2021

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

Identified uses	Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development Other: Manufacture of medical and defense equipment
Uses advised against	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the product information sheet

Supplier

Company name	Materion Advanced Materials
Address	6070 Parkland Boulevard United States
Division	
Telephone	1.216.383.4019
e-mail	ehs@materion.com
Contact person	Theodore Knudson

1.4. Emergency telephone number

See Section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The substance 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

Hazard summary	The products are classified as articles and, as such, do not present a physical or health hazard in the present form. If the products are processed or handled in ways that generate particles (dust, fume, particles or powder) and/or chemical compounds, a potential health hazard could exist and risk management measures must be taken to minimize risk.
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2.2. Label elements

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

Contains:	Indium oxide, Tin oxide
Hazard pictograms	None.
Signal word	None.
Hazard statements	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.

Precautionary statements

Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

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

2.3. Other hazards

Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Indium oxide	80 - 99	1312-43-2 215-193-9	-	-	
Classification: -					
Tin oxide	1 - 20	18282-10-5 242-159-0	-	-	#
Classification: -					

SECTION 4: First aid measures**General information**

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.

4.1. Description of first aid measures**Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison centre or doctor/physician if you feel unwell.

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

None known.

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. None known.

5.1. Extinguishing media**Suitable extinguishing media**

Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.

Unsuitable extinguishing media

None known.

5.2. Special hazards arising from the substance or mixture

This product is not flammable.

5.3. Advice for firefighters**Special protective equipment for firefighters**

Use protective equipment appropriate for surrounding materials.

Special firefighting procedures

Use standard firefighting procedures and consider the hazards of other involved materials. 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. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. For personal protection, see section 8 of the PIS.

For emergency responders

Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Use personal protection recommended in Section 8 of the PIS.

6.2. Environmental precautions

Collect spillage.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the PIS.

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames and high temperatures.

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 oxide (CAS 1312-43-2)	MAK	0,1 mg/m ³	Inhalable fraction.
	STEL	0,2 mg/m ³	Inhalable fraction.
Tin oxide (CAS 18282-10-5)	MAK	2 mg/m ³	Inhalable fraction.
	STEL	4 mg/m ³	Inhalable fraction.

Belgium. Exposure Limit Values

Components	Type	Value
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³
Tin oxide (CAS 18282-10-5)	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 oxide (CAS 18282-10-5)	TWA	2 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 oxide (CAS 1312-43-2)	MAC	0,1 mg/m ³
	STEL	0,3 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value
Tin oxide (CAS 18282-10-5)	Ceiling	4 mg/m ³
	TWA	2 mg/m ³

Denmark. Exposure Limit Values

Components	Type	Value
Indium oxide (CAS 1312-43-2)	TLV	0,1 mg/m ³
Tin oxide (CAS 18282-10-5)	TLV	2 mg/m ³

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³

Finland. Workplace Exposure Limits

Components	Type	Value
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace			
Components	Type	Value	Form
Tin oxide (CAS 18282-10-5)	AGW	2 mg/m ³	Inhalable fraction.
Greece. OELs (Decree No. 90/1999, as amended)			
Components	Type	Value	
Indium oxide (CAS 1312-43-2)	STEL	1 mg/m ³	
	TWA	1 mg/m ³	
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Hungary. OELs. Joint Decree on Chemical Safety of Workplaces			
Components	Type	Value	
Tin oxide (CAS 18282-10-5)	STEL	8 mg/m ³	
	TWA	2 mg/m ³	
Iceland. OELs. Regulation 154/1999 on occupational exposure limits			
Components	Type	Value	Form
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³	Dust.
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Ireland. Occupational Exposure Limits			
Components	Type	Value	
Indium oxide (CAS 1312-43-2)	STEL	0,3 mg/m ³	
	TWA	0,1 mg/m ³	
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Italy. Occupational Exposure Limits			
Components	Type	Value	
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³	
Latvia. OELs. Occupational exposure limit values of chemical substances in work environment			
Components	Type	Value	
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Lithuania. OELs. Limit Values for Chemical Substances, General Requirements			
Components	Type	Value	
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³	
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A			
Components	Type	Value	
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)			
Components	Type	Value	
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	
Norway. Administrative Norms for Contaminants in the Workplace			
Components	Type	Value	
Indium oxide (CAS 1312-43-2)	TLV	0,1 mg/m ³	
Tin oxide (CAS 18282-10-5)	TLV	2 mg/m ³	
Poland. Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817			
Components	Type	Value	Form
Tin oxide (CAS 18282-10-5)	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 oxide (CAS 18282-10-5)	TWA	2 mg/m ³

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

Components	Type	Value
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³

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

Components	Type	Value
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³

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

Components	Type	Value
Tin oxide (CAS 18282-10-5)	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 oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³	Inhalable fraction.
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	

Spain. Occupational Exposure Limits

Components	Type	Value
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³

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

Components	Type	Value	Form
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³	Total dust.
Tin oxide (CAS 18282-10-5)	TWA	2 mg/m ³	Inhalable dust.

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value	Form
Indium oxide (CAS 1312-43-2)	TWA	0,1 mg/m ³	Inhalable dust.
Tin oxide (CAS 18282-10-5)	STEL	4 mg/m ³	Inhalable dust.
	TWA	2 mg/m ³	Inhalable dust.

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Indium oxide (CAS 1312-43-2)	STEL	0,3 mg/m ³
		0 ppm
	TWA	0,1 mg/m ³
Tin oxide (CAS 18282-10-5)	STEL	4 mg/m ³
	TWA	2 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value
Tin oxide (CAS 18282-10-5)	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 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	If contact is likely, safety glasses with side shields are recommended.
Skin protection	
- Hand protection	Wear gloves to prevent metal cuts and skin abrasions during handling.
- 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	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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state	Solid.
Form	Solid.
Colour	Black.

Odour None.

Odour threshold Not applicable.

pH Not applicable.

Melting point/freezing point 1630 °C (2966 °F) estimated / Not applicable.

Initial boiling point and boiling range Not applicable.

Flash point Not applicable.

Evaporation rate Not applicable.

Flammability (solid, gas) None known.

Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not applicable.

Explosive limit - lower (%) temperature Not applicable.

Explosive limit – upper (%) Not applicable.

Explosive limit - upper (%) temperature Not applicable.

Vapour pressure Not applicable.

Vapour density Not applicable.

Relative density Not applicable.

Solubility(ies)

Solubility (water) Insoluble.

Partition coefficient (n-octanol/water) Not applicable.

Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not explosive.
Oxidising properties	Not oxidising.

9.2. Other information

Density	6,95 g/cm ³ estimated
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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	None under normal conditions.
10.5. Incompatible materials	None known.
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.
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Information on likely routes of exposure

Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Not likely, due to the form of the product.
Ingestion	Expected to be a low ingestion hazard.

Symptoms	None known.
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11.1. Information on toxicological effects

Acute toxicity	None known.
Skin corrosion/irritation	Not likely, due to the form of the product.
Serious eye damage/eye irritation	None known.
Respiratory sensitisation	Not a respiratory sensitizer.
Skin sensitisation	Not a skin sensitiser.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.

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

Not listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Mixture versus substance information	No information available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	Not relevant, due to the form of the product.
12.2. Persistence and degradability	No data is available on the degradability of this substance.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log K_{ow})	Not applicable.

- Bioconcentration factor (BCF)** Not available.
- 12.4. Mobility in soil** No data available.
- 12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.
- 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 soil Data

Tin oxide (CAS 18282-10-5)	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. Dispose of contents/container in accordance with local/regional/national/international regulations.
- 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 (EU) 2019/1021 On persistent organic pollutants (recast), 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.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not applicable.

Training information

Follow training instructions when handling this material.

Further information

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

Disclaimer

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To avoid any misunderstandings or incorrect assumptions by the receiver of the safety information, it should be made clear that the supplied information is not in the form of a Safety Data Sheet (SDS), but is actually a voluntary Product Information Sheet closely following the guidelines of the Safety Data Sheet – COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 (REACH/SDS).

Other information

Revised information in Section 16.