



SAFETY DATA SHEET

MATERION

1. Identification of the chemical and information about the manufacturer or supplier

1.1 Identification of the chemical products

1.1.1 Technical name Tin Product

Other means of identification

SDS number G16

CAS number 7440-31-5

Synonyms TIN, ELEMENTAL

1.1.2 Recommended use of the chemical and restrictions on use

Recommended use Manufacture of computer, electronic and optical products, electrical equipment
Scientific research and development
Other: Manufacture of medical and defense equipment

Limitations on use Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Consumer uses: Private households (= general public = consumers)

1.2 Manufacturer/Importer/Supplier/Distributor information

1.2.1 Manufacturer

Company name Materion Advanced Materials Germany GmbH

1.2.2 Address (post and legal) Borsigstrasse 10

Website www.materion.com

Contact person Hermann Schmiing

1.2.3 Telephone, including Emergency consultations and time limits

Telephone 49.60.23.91.82.0 Hermann Schmiing

Emergency phone number 49.60.23.91.82.0

1.2.4 Fax

1.2.5 E-mail Materion.Germany@materion.com

2. Hazard(s) identification

2.1. Hazard identification of chemical product as a whole (classification according to GOST 12.1.007-76 and GHS)

Classification according to GOST 12.1.007-76 Not available.

GHS classification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

2.2 Labeling elements in compliance with GOST 31340-2013

2.2.1 Signal word None.

2.2.2 Symbols None.

2.2.3 Hazard statement 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 statement

Prevention Not available.

Response Not available.

Storage Store away from incompatible materials.

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards None known.

Supplemental information None.

3. Composition/information on ingredients

3.1 Information on product as a whole

3.1.1 Chemical name (IUPAC)	Tin Product
3.1.2 Chemical formula	Sn (7440-31-5)
3.1.3 General description of the composition (taking into account the brand assortment; preparation method)	Not applicable.

3.2 Components

Components	Hygienic standards in the working area				CAS-No.	EC No.
	Concentration by weight (%)	MAC, mg/m ³	TSEL, mg/m ³	Hazard classification		
Tin Product	100	None.	None.		7440-31-5	231-141-8

4. First-aid measures

4.1. Observed symptoms

4.1.1 In case of exposure via inhalation	Not likely, due to the form of the product.
4.1.2 In contact with skin	Not likely, due to the form of the product.
4.1.3 In contact with eyes	Not likely, due to the form of the product.
4.1.4 In case of exposure via ingestion	Expected to be a low ingestion hazard.

4.2 First-aid measures to be provided to victims

4.2.1 In case of exposure via inhalation	Call a physician if symptoms develop or persist.
4.2.2 In contact with skin	Get medical attention if irritation develops and persists.
4.2.3 In contact with eyes	Get medical attention if irritation develops and persists.
4.2.4 In case of exposure via ingestion	Get medical advice/attention if you feel unwell.
4.2.5 Contraindications	None known.

General advice

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

5. Fire-fighting and explosion safety measures and means

5.1 General characteristics of fire-explosion properties	No unusual fire or explosion hazards noted.
5.2 Fire-explosion indicators	Not available.
5.3 Combustion and/or thermal destruction products and hazards arising from these	During fire, gases hazardous to health may be formed.
5.4 Recommended extinguishing media	Powder. Dry sand. Use methods for the surrounding fire.
5.5 Forbidden extinguishing media	None known.
5.6 Special protective equipment for firefighters	Wear suitable protective equipment.
5.7 Specific extinguishing methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Special fire fighting procedures	Use water spray to cool unopened containers.

6. Accident and emergency prevention and response measures and their consequences

6.1 Measures to prevent harmful effects on people, environment, buildings, constructions, etc. in case of accidents and emergencies

6.1.1 General required actions in case of an accident or emergency	Keep unnecessary personnel away. Wear appropriate personal protective equipment. For personal protection, see section 8 of the SDS.
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6.1.2 Personal protection equipment in case of the accident Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2 Procedures for the elimination of accidents and emergencies

6.2.1 Procedures in case of leaks, spills, splashes In solid form this material poses no special clean-up problems.

6.2.2 Actions in case of fire None known.

Methods and materials for containment and cleaning up Collect spillage. For waste disposal, see section 13 of the SDS.

Environmental precautions Collect spillage.

7. Storage and handling requirements of chemicals during loading and unloading

7.1 Safety precautions when handling chemical products

7.1.1 Technical safety measures No specific recommendations.

7.1.2 Environmental protection measures Use care in handling/storage.

7.1.3 Recommended safe handling and transportation advice Use personal protection recommended in Section 8 of the SDS.

Local and general ventilation Provide adequate ventilation.

7.2 Chemical storage requirements

7.2.1 Terms and conditions for safe storage Store away from incompatible materials (see Section 10 of the SDS).

7.2.2 Packaging No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product.

7.3 Safety measures and storage requirements at domestic use No specific recommendations.

8. Equipment for monitoring exposure and personal protective equipment

8.1 Parameters of the working area that require monitoring No exposure limits noted for ingredient(s).

8.2 Measures to ensure the content of harmful substances in the working area below the exposure level concentration This material does not have established exposure limits.

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.

8.3 Worker personal protective equipment

8.3.1 General recommendations Use personal protective equipment as required.

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

8.3.3 Protective equipment

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

Hand protection Wear gloves to prevent metal cuts and skin abrasions during handling.

Other Use personal protective equipment as required.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

8.3.4 Personal protection equipment in case of domestic use Not applicable.

General hygiene considerations Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

9.1 Physical appearance

Physical state Solid.

Form Solid.

Color	Silver-white.
Odor	None.
Odor threshold	Not applicable.

9.2 Parameters characterizing basic properties of the product

pH	Not applicable.
Melting point/freezing point	449,42 °F (231,9 °C)
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Density	7,26 g/cm ³ estimated
Viscosity	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.

Other data

Dynamic viscosity	Not applicable.
Dynamic viscosity temp	Not applicable.
Explosive properties	Not explosive.
Kinematic viscosity	Not applicable.
Flammability (solid, gas)	None known.
Molecular formula	Sn
Molecular weight	118,69 g/mol
Oxidizing properties	Not oxidizing.
Surface tension	Not applicable.

10. Stability and reactivity

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

11. Toxicological information

11.1 General exposure characteristics	None known.
11.2 Routes of exposure	Not established.
11.3 Affected/target organs, tissues and systems of humans	
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.

11.4 Information on health hazards in case of direct exposure to the product and its effect

Effect on upper respiratory tract irritation Not applicable.

Respiratory or skin sensitization

Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended.

Not listed.

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization Not a skin sensitizer.

Skin corrosion/irritation Not relevant, due to the form of the product.

Serious eye damage/eye irritation Not likely, due to the form of the product.

Aspiration hazard Not an aspiration hazard.

11.5 Information on long-term hazardous health effects

Carcinogenicity Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Not classified.

Mutagenicity Not classified.

Cumulativeness Not available.

Chronic effects No data recorded.

11.6 Acute toxicity data Not available.

12. Environmental impact information

12.1 General description of the impact on the environment Not classified as an environmental hazard.

12.2 Routes of exposure to environment Not available.

12.3 The most important characteristics of the environmental impact

12.3.1 Hygienic standards Not available.

12.3.2 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.

12.3.3 Biomigration and transformation of the environment due to the biodegradation or other processes

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. Recommendations for waste (residues) disposal

13.1 Safety precautions when handling the waste generated during use, storage, transportation 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.

13.2 Information on the location and disposal methods, recycling or disposal of product waste, including packaging Dispose in accordance with all applicable regulations.

13.3 Recommendation on the waste disposal generated during its domestic use 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.

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).

14. Transport information

ADR

Not regulated as dangerous goods.

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.

15. National and international regulatory information

15.1 National legislation

15.1.1 Laws of the Russian Federation Not available.

15.1.2 Information about the documentation, regulatory requirements for the protection of human health and environment

Sanitary-Epidemiological Rules, 1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008

Not listed.

Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended.

Not listed.

15.2 International Conventions and Agreements

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	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

16.1 Information on revision of the SDS

Issue date 11-27-2018
Version # 01
Previous SDS number Not applicable.

16.2 List of references used in compiling the safety data sheet

GOST 30333-2007 Chemical production safety passport. General requirements.
GOST 31340-2013 Labeling of chemicals. General requirements.
GOST 32419-2013 Classification of chemical products. General requirements.
GOST 32424-2013 Classification of chemicals for environmental hazards. General principles.
GOST 12.1.007-76 Occupational safety standard system. Noxious substances. Classification and general safety requirements.
GOST 12.1.044-89. Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of substances and materials. Nomenclature of indices and methods of their determination.
GOST 19433-88. Dangerous goods. Classification and marking.
GOST 12.1.004-91. Occupational safety standards system. Fire safety. General requirements.

List of abbreviations

Not available.

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