



1. Chemical product and company identification

A. Product name	Tin Product
Other means of identification	
SDS number	G16
CAS number	7440-31-5
Synonym(s)	TIN, ELEMENTAL
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	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
C. Supplier information	
Company name	Materion Electronic Materials
Address	6070 Parkland Boulevard Mayfield Heights Ohio 44124 United States
Telephone	1.216.383.4019
Email	Materion-PS@materion.com
Contact person	Product Stewardship Director
Emergency telephone number	See Section 16.

2. Hazards identification

A. Hazard category/Classification	
Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
B. Warning label items including precautionary statement	
• Pictogram	None.
• Signal word	None.
• 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	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
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 (%)
Tin Product	TIN, ELEMENTAL	7440-31-5	KE-33838	100

4. First aid measures

A. In case of eye contact	Flush thoroughly with water. If irritation occurs, get medical assistance.
B. In case of skin contact	Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work.
C. In case of inhalation	Call a physician if symptoms develop or persist.
D. In case of swallowing	If swallowed: Immediately call a poison center/doctor.
E. Note to physician	Not available.
Most important symptoms/effects, acute and delayed	None known.

5. Fire-fighting measures

A. Suitable (and unsuitable) extinguishing media	
Suitable extinguishing media	Powder. Dry sand. Use methods for the surrounding fire.
Unsuitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
B. Specific hazards arising from the chemical (example: hazardous combustion products)	This product is not flammable.
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. For personal protection, see section 8 of the MSDS.
B. Environmental precautions	Collect spillage.
C. Methods and materials for containment and cleaning up	Collect spillage. 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. For waste disposal, see section 13 of the MSDS. The product is insoluble in water.

7. Handling and storage

A. Precautions for safe handling	Observe good industrial hygiene practices.
B. Conditions for safe storage (including any incompatibilities)	Store in tightly closed container. 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. Exposure Limits for Chemicals and Physical Agents, Occupational Safety and Health Act "K-OSHA" Article 106		
Material	Type	Value	
Tin Product (CAS 7440-31-5)	TWA	2 mg/m3	
US. ACGIH Threshold Limit Values (TLV)			
Material	Type	Value	Form
Tin Product (CAS 7440-31-5)	TWA	2 mg/m3	Inhalable fraction.
Biological limit values	No biological exposure limits noted for the ingredient(s).		
Exposure guidelines	This material does not have established exposure limits.		

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	KOSHA Certified respiratory protection not required. In case of insufficient ventilation, wear suitable KOSHA Certified respiratory equipment.
• Eye protection	Wear KOSHA Certified safety glasses with side shields (or goggles) .
• Hand protection	Wear gloves to prevent metal cuts and skin abrasions during handling.
• Body protection	Use personal protective equipment as required.
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.

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	449.42 °F (231.9 °C)
Freezing point	449.42 °F (231.9 °C)

F. Boiling point, initial boiling point, and boiling range Not applicable.

G. Flash point Not applicable.

H. Evaporation rate Not applicable.

I. Flammability (solid, gas) None known.

J. Upper/lower limit on 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.

K. Vapor pressure Not applicable.

Vapor pressure temp. 77 °F (25 °C)

L. Solubility

Solubility (water)	Insoluble
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M. Vapor density Not applicable.

N. Specific gravity Not applicable.

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 118.69 g/mol

Other data

Density	7.26 g/cm3 estimated
	7.26 g/cm3 estimated
	estimated Not applicable.

Dynamic viscosity	Not applicable.
Dynamic viscosity temp	Not applicable.
Explosive properties	Not explosive.
Kinematic viscosity	Not applicable.
Molecular formula	Sn
Oxidizing properties	Not oxidizing.
Surface tension	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) Contact with incompatible materials.

C. Incompatible materials Acids. Chlorine.

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

11. Toxicological information

A. Information on likely routes of exposure

• Respiratory organs	Not likely, due to the form of the product.
• Skin	Not likely, due to the form of the product.
• Eyes	Not likely, due to the form of the product.
• Mouth	Expected to be a low ingestion hazard.

B. Information on health hazards

• Acute toxicity (list all possible routes of exposure)	Not known.
• Corrosivity or irritation to the skin	Not relevant, due to the form of the product.
• Serious eye damage/eye irritation	Not likely, due to the form of the product.
• Respiratory sensitization	Not a respiratory sensitizer.
• Skin sensitization	Not a skin sensitizer.
• Carcinogenic properties /Carcinogenicity	Not classified.
• Mutagenic properties /Mutagenicity	Not classified.
• Reproductive toxicity	Not classified.
• Specific target organ toxicity - single exposure	Not classified.
• Specific target organ toxicity - repeated exposure	Not available.
• Aspiration hazard	Not an aspiration hazard.

12. Ecological information

A. Ecotoxicity The product is not classified as environmentally hazardous.

Hazardous to the aquatic environment, acute hazard 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. Persistence/degradability The product is not expected to be biodegradable.

C. Bioaccumulative potential	No data available.
D. Mobility in soil	The product is immiscible with water and will spread on the water surface. The product is insoluble in water.
E. 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

A. Method of disposal	Not available.
B. Disposal considerations (including disposal of contaminated containers or packaging)	Refer to manufacturer/supplier for information on recovery/recycling.
Waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

14. Transport information

National regulations

KSSTDG

A. UN number	Not regulated as dangerous goods.
B. UN proper shipping name	Not regulated as dangerous goods.
C. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
D. Packing group	-
E. Environmental hazards	
Marine pollutant	No.
EmS	Not assigned.
F. Special precautions for user	Not assigned.

International regulations

IATA

A. UN number	Not regulated as dangerous goods.
B. UN proper shipping name	Not regulated as dangerous goods.
C. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
D. Packing group	-
E. Environmental hazards	No.
F. Special precautions for user	Not assigned.

IMDG

A. UN number	Not regulated as dangerous goods.
B. UN proper shipping name	Not regulated as dangerous goods.
C. Transport hazard class(es)	
Class	Not assigned.
Subsidiary risk	-
D. Packing group	-
E. Environmental hazards	
Marine pollutant	No.
EmS	Not assigned.
F. Special precautions for user	Not assigned.

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

Tin Product (CAS 7440-31-5)

Harmful Substances Requiring Special Medical Examination

Tin Product (CAS 7440-31-5)

Workplace Environmental Monitoring Harmful Materials

Tin Product (CAS 7440-31-5)

Occupational Exposure Limit

Tin Product (CAS 7440-31-5)

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

Tin Product (CAS 7440-31-5)

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 Ministry of Employment and Labor Notice No 2020-130.

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

A. Source of information

ACGIH
EPA: AQUIRE database
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. GHS Labeling Requirements. Standards for Classification and Labeling of Chemical Substances and Material Safety Data Sheets (MSDS), as amended
Korea. KOSHA GHS Classifications List (Korea Occupational Safety & Health Agency)
Korea. NEMA GHS Classification List (National Emergency Management Agency GHS Guidance for Classification and Labeling for Dangerous Goods)
Toxic Release Inventory (TRI) Chemicals (MOE Public Notice No. 2002-166, Nov. 8, 2002), as amended

B. Issue date

10-17-2019

C. Number of revisions and date of most recent revision

07-31-2024 (03 revision)

D. Other

Revised information in Section 16.

Further information

Transportation Emergency
Call Chemtrec at:
US: 800.424.9300
International: 703.741.5970
Spain: 900.868.538
Switzerland: 0800.564.402
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059
South Korea Toll-free Number – 080-880-0468

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Revision information

This document has undergone significant changes and should be reviewed in its entirety.