



# SAFETY DATA SHEET

**MATERION**

## 1. Product and company identification

Name of the chemical	Tin Product
Other means of identification	
SDS number	G16
CAS number	7440-31-5
Synonyms	TIN, ELEMENTAL
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
Recommended restrictions	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Manufacturer/Importer/Supplier/ Distributor information	Materion Advanced Materials
Address	6070 Parkland Boulevard Mayfield Heights OH 44124 United States
Telephone	EH&S 1.216.383.4019
E-mail	ehs@materion.com
Contact person	Theodore Knudson
Emergency telephone number	See Section 16.

## 2. Hazards identification

Hazard classification	
Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
Label elements	
Symbols	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	None.
Storage	Store away from incompatible materials.
Disposal	Not available.
Other hazards	None known.
Supplemental information	None.

## 3. Composition/information on ingredients

Substance	CAS Number	Concentration (%)
Tin Product	7440-31-5	100

## 4. First aid measures

### First aid measures for different exposure routes

Inhalation	Call a physician if symptoms develop or persist.
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.
Eye contact	Flush thoroughly with water. If irritation occurs, get medical assistance.
Ingestion	If swallowed: Immediately call a poison center/doctor.
Most important symptoms and effects	None known.
Personal protection for first-aid responders	Not available.
Notes to physician	Treat symptomatically.

## 5. Fire-fighting measures

Extinguishing media	Powder. Dry sand. Use methods for the surrounding fire.
Extinguishing media to avoid	Use fire-extinguishing media appropriate for surrounding materials.
Specific hazards during fire fighting	This product is not flammable.
Special fire fighting procedures	None.
Protection of fire-fighters	Wear suitable protective equipment.
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

Personal precautions	Keep unnecessary personnel away.
Environmental precautions	Collect spillage.
Spill cleanup methods	Collect spillage.

## 7. Handling and storage

Handling	Observe good industrial hygiene practices.
Storage	Not available.

## 8. Exposure controls/personal protection

### Exposure limits

#### OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)

Material	Type	Value
Tin Product (CAS 7440-31-5)	STEL	4 mg/m3
	TWA	2 mg/m3

#### US. ACGIH Threshold Limit Values

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.
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	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	Wear gloves to prevent metal cuts and skin abrasions during handling.
Other	Use personal protective equipment as required.

<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Not available.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Silver-white.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.
<b>Melting point/freezing point</b>	449.42 °F (231.9 °C)
<b>pH</b>	Not applicable.
<b>Boiling point, initial boiling point, and boiling range</b>	Not applicable.
<b>Flammability (solid, gas)</b>	None known.
<b>Flash point</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Density</b>	7.26 g/cm <sup>3</sup> estimated
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Other data</b>	
<b>Dynamic viscosity</b>	Not applicable.
<b>Dynamic viscosity temp</b>	Not applicable.
<b>Explosive properties</b>	Not explosive.
<b>Kinematic viscosity</b>	Not applicable.
<b>Molecular formula</b>	Sn
<b>Molecular weight</b>	118.69 g/mol
<b>Oxidizing properties</b>	Not oxidizing.
<b>Surface tension</b>	Not applicable.
<b>Viscosity</b>	Not applicable.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Stability</b>	Material is stable under normal conditions.

<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Acids. Chlorine.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Not likely, due to the form of the product.
<b>Skin contact</b>	Not likely, due to the form of the product.
<b>Eye contact</b>	Not likely, due to the form of the product.
<b>Ingestion</b>	Expected to be a low ingestion hazard.

**Symptoms** None known.

### Information on toxicological effects

<b>Acute toxicity</b>	Not available.
<b>Skin corrosion/irritation</b>	Not relevant, due to the form of the product.
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.

### Respiratory or skin sensitization

<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	Not a skin sensitizer.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** Not classified.

**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.

**Chronic effects** None known.

**Other information** This product has no known adverse effect on human health.

## 12. Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous.
<b>Persistence and degradability</b>	The product is not expected to be biodegradable.
<b>Bioaccumulation</b>	No data available.
<b>Mobility in soil</b>	The product is insoluble in water.
<b>Other hazardous effects</b>	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

<b>Disposal instructions</b>	Not available.
<b>Residual waste</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Refer to manufacturer/supplier for information on recovery/recycling.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.

## 14. Transport information

### 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. Regulatory information

### Applicable regulations

#### Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Not listed.

#### Priority Management Chemical List (Regulations on Handling Priority Managed Chemicals), as amended

Not listed.

#### Toxic Chemical Substances (TCS) List (EPA Toxic Substances Notice No. 0960095331E, Tables 1-3, Dec. 17, 2007, as amended)

Not listed.

#### Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Tin Product (CAS 7440-31-5) Listed.

### International regulations

#### 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
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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

### References

ACGIH  
EPA: AQUIRE database  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)  
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)  
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)  
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)  
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)

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### Prepared by

Not available.