

**MATERION****1. Chemical and company identification**

Name of chemical (Product name)	Tin Product	
Supplier's company name, address and phone number		
Company name	Materion Advanced Materials	
Address	6070 Parkland Boulevard Mayfield Heights, OH 44124 United States	
Contact person	Theodore Knudson	
Telephone	EH&S	1.216.383.4019
e-mail address	ehs@materion.com	
Emergency telephone number	See Section 16.	
Reference number	G16	

**2. Hazards identification****GHS classification**

The product is not classified according to GHS.

**GHS label elements**

**Pictograms** None.

**Signal words** 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** None.

**Response** None.

**Storage** Store away from incompatible materials.

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

**Other hazards which do not result in classification** None known.

**Supplemental information** None.

**Main symptoms and emergency overview**

**Emergency overview** 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.

**3. Composition/information on ingredients**

**Substance or mixture** Substance

Chemical name or generic name	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Tin Product	7440-31-5			100

**Synonym(s)** TIN, ELEMENTAL

**Chemical formula** Sn (7440-31-5)

**4. First aid measures**

**If inhaled** Call a physician if symptoms develop or persist.

**If on skin** 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.

**If in eyes** Flush thoroughly with water. If irritation occurs, get medical assistance.

<b>If swallowed</b>	If swallowed: Immediately call a poison center/doctor.		
<b>Most important symptoms/effects, acute and delayed</b>	None known.		
<b>Protection of first-aid responders</b>	If you feel unwell, seek medical advice (show the label where possible).		
<b>5. Fire-fighting measures</b>			
<b>Extinguishing media</b>	Powder. Dry sand. Use methods for the surrounding fire.		
<b>Extinguishing media to avoid</b>	Use fire-extinguishing media appropriate for surrounding materials.		
<b>Specific hazards</b>	This product is not flammable.		
<b>Protection of fire-fighters</b>	Wear suitable protective equipment.		
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.		
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.		
<b>6. Accidental release measures</b>			
<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away.		
<b>Environmental precautions</b>	Collect spillage.		
<b>Methods and materials for containment and cleaning up</b>	Collect spillage.		
<b>7. Handling and storage</b>			
<b>Handling</b>			
<b>Technical measures (e.g. Local and general ventilation)</b>	Provide adequate ventilation.		
<b>Safe handling advice</b>	Avoid prolonged exposure. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Observe good industrial hygiene practices.		
<b>Contact avoidance measures</b>	Strong oxidizing agents. Acids. Chlorine.		
<b>Storage</b>			
<b>Safe storage conditions</b>	Not available.		
<b>Safe packaging materials</b>	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.		
<b>8. Exposure controls/personal protection</b>			
<b>Control parameters</b>	Not available.		
<b>Occupational exposure limits</b>			
<b>US. ACGIH Threshold Limit Values</b>			
<b>Material</b>	<b>Type</b>	<b>Value</b>	<b>Form</b>
Tin Product (CAS 7440-31-5)	TWA	2 mg/m3	Inhalable fraction.
<b>Exposure guidelines</b>	This material does not have established exposure limits.		
<b>Engineering measures</b>	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.		
<b>Personal protective equipment</b>			
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.		
<b>Hand protection</b>	Wear gloves to prevent metal cuts and skin abrasions during handling.		
<b>Eye protection</b>	Wear safety glasses with side shields (or goggles).		
<b>Skin and body protection</b>	Use personal protective equipment as required.		

## 9. Physical and chemical properties

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

## 10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	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

<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.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	Not classified.
<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.

## 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>Hazardous to the ozone layer</b>	No data available.
<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>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 of contents/container in accordance with local/regional/national/international regulations.

## 14. Transport information

<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.
<b>National regulations</b>	Follow regulation in section 15 for domestic transportation.

## 15. Regulatory information

### Industrial Safety and Health Act

#### Notifiable substances

TIN AND TIN COMPOUNDS

Table 9 Ordinance No. 322

#### Labeling substances

TIN (POWDER)

TIN AND TIN COMPOUNDS

## Poisonous and Deleterious Substances Control Act

### Specified poisonous substances

Not regulated.

### Poisonous substances

Not regulated.

### Deleterious substances

Not regulated.

## Act on the Regulation of Manufacture and Evaluation of Chemical Substances

### Class I specified chemical substances

Not regulated.

### Class II specified chemical substances

Not regulated.

### Monitoring chemical substances

Not regulated.

### Priority Assessment Chemical Substances (PACs)

Not regulated.

### Reporting Exempted Substances

Not regulated.

## Law concerning Pollutant Release and Transfer Register

### Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

### Class 1 substances (substance name, ordinance number and content)

Not regulated.

### Class 2 substances (substance name, ordinance number and content)

Not regulated.

### Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule

Not regulated.

### Air Law, Enforcement Rule

Not regulated.

### Explosives Control Act

Not regulated.

## 16. Other information

### Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012  
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"  
JIS Z 7253:2012 Hazard communication of chemicals based on GHS – Labelling and Safety Data Sheet (SDS)

### Further information

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

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### Other information

Revised information in Section 16.