

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** TIN METAL

**Other means of identification**

**Product No.:** 4144, 4150

**Recommended use and restriction on use**

**Recommended use:** Not available.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company Name:** Avantor Performance Materials, Inc.  
**Address:** 3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

**Telephone:** Customer Service: 855-282-6867

**Fax:**  
**Contact Person:** Environmental Health & Safety  
**e-mail:** info@avantormaterials.com

**Emergency telephone number:**

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

## 2. Hazard(s) identification

**Hazard classification**

**Label elements**

**Hazard symbol:** No symbol

**Signal word:** Warning

**Hazard statement:** May form combustible dust concentrations in air.

**Precautionary statement** Not applicable

**Other hazards which do not result in GHS classification:** None.

## 3. Composition/information on ingredients

**Substances**

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
TIN		7440-31-5	100%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First-aid measures

<b>General information:</b>	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
<b>Ingestion:</b>	Rinse mouth thoroughly. Get medical attention if symptoms occur.
<b>Inhalation:</b>	Move to fresh air. Get medical attention if symptoms persist.
<b>Skin contact:</b>	Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.
<b>Eye contact:</b>	Flush thoroughly with water. If irritation occurs, get medical assistance.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** May cause irritation to skin, eyes, and respiratory tract.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Treat symptomatically.

**5. Fire-fighting measures**

**General fire hazards:** Powdered material may form explosive dust-air mixtures.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Dry sand, graphite powder, dry sodium chloride based extinguishers.

**Unsuitable extinguishing media:** Water.

**Specific hazards arising from the chemical:** During fire, gases hazardous to health may be formed. Dust clouds may be explosive under certain conditions. Contact with strong oxidizers may cause fire.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment.

**Methods and material for containment and cleaning up:** Avoid dust formation. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination.

**Notification Procedures:** Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling:** Avoid generation and spreading of dust. Ground/bond container and receiving equipment. Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Avoid inhalation of dust. Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Keep containers tightly closed. Store in cool, dry place. Store in a well-ventilated place.

## 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
TIN	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (2011)
TIN - as Sn	REL	2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	2 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

**Appropriate engineering controls** No data available.

### Individual protection measures, such as personal protective equipment

**General information:** 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. Use explosion-proof ventilation equipment.

**Eye/face protection:** Use tight fitting goggles if dust is generated.

#### Skin protection

**Hand protection:** Wear protective gloves.

**Other:** Wear suitable protective clothing.

**Respiratory protection:** In case of inadequate ventilation use suitable respirator.

**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. Provide eyewash station and safety shower.

## 9. Physical and chemical properties

### Appearance

**Physical state:** Solid  
**Form:** Granules  
**Color:** Silver  
**Odor:** Odorless

<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	231.9 °C
<b>Initial boiling point and boiling range:</b>	2,507 °C
<b>Flash Point:</b>	No data available.
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	0.13 kPa (1,609 °C)
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	7.31
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Insoluble in water
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	630 °C Cloud ignition temperature. 430 °C Layer ignition temperature.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	118.69 g/mol (Sn)

## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Contact with incompatible materials. Heat, sparks, flames. Avoid dust formation.
<b>Incompatible materials:</b>	Acids. Halogens and halogenated compounds. Peroxides. Sulfur oxides.
<b>Hazardous decomposition products:</b>	None known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion:</b>	May cause irritation of the gastrointestinal tract.
<b>Inhalation:</b>	May cause irritation to the respiratory system.
<b>Skin contact:</b>	May cause irritation.
<b>Eye contact:</b>	May cause temporary eye irritation.

**Information on toxicological effects****Acute toxicity (list all possible routes of exposure)****Oral****Product:** No data available.**Dermal****Product:** No data available.**Inhalation****Product:** No data available.**Repeated dose toxicity****Product:** No data available.**Skin corrosion/irritation****Product:** May cause skin irritation.**Serious eye damage/eye irritation****Product:** May irritate eyes.**Respiratory or skin sensitization****Product:** Not a skin sensitizer.**Carcinogenicity****Product:** This substance has no evidence of carcinogenic properties.**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**

No carcinogenic components identified

**Germ cell mutagenicity****In vitro****Product:** No mutagenic components identified**In vivo****Product:** No mutagenic components identified**Reproductive toxicity****Product:** No components toxic to reproduction**Specific target organ toxicity - single exposure****Product:** No data available.**Specific target organ toxicity - repeated exposure****Product:** No data available.**Aspiration hazard****Product:** Not classified**Other effects:**

None known.

## 12. Ecological information

### Ecotoxicity:

#### Acute hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Specified substance(s):

TIN LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 28 d): > 0.17  
- < 15.61 mg/l Mortality

##### Aquatic invertebrates

**Product:** No data available.

#### Chronic hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Aquatic invertebrates

**Product:** No data available.

##### Toxicity to Aquatic Plants

**Product:** No data available.

### Persistence and degradability

#### Biodegradation

**Product:** There are no data on the degradability of this product.

#### BOD/COD ratio

**Product:** No data available.

### Bioaccumulative potential

#### Bioconcentration factor (BCF)

**Product:** No data available on bioaccumulation.

#### Partition coefficient n-octanol / water (log Kow)

**Product:** No data available.

**Mobility in soil:** No data available.

**Other adverse effects:** The product components are 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.

## 13. Disposal considerations

**Disposal instructions:** Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated packaging:** Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

### DOT

Not regulated.

**IMDG**

Not regulated.

**IATA**

Not regulated.

**15. Regulatory information**

**US federal regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

None present or none present in regulated quantities.

**Superfund amendments and reauthorization act of 1986 (SARA)**

**Hazard categories**

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

**SARA 302 Extremely hazardous substance**

None present or none present in regulated quantities.

**SARA 304 Emergency release notification**

None present or none present in regulated quantities.

**SARA 311/312 Hazardous chemical**

Chemical identity	Threshold Planning Quantity
TIN	500 lbs

**SARA 313 (TRI reporting)**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**US state regulations**

**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

**US. New Jersey Worker and Community Right-to-Know Act**

TIN Listed

**US. Massachusetts RTK - Substance List**

TIN Listed

**US. Pennsylvania RTK - Hazardous Substances**

TIN Listed

**US. Rhode Island RTK**

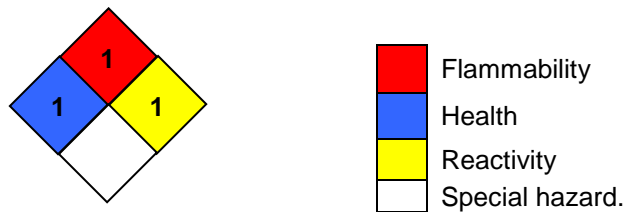
No ingredient regulated by RI Right-to-Know Law present.

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

**16. Other information, including date of preparation or last revision**

**NFPA Hazard ID**



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

<b>Issue date:</b>	07-24-2014
<b>Revision date:</b>	No data available.
<b>Version #:</b>	1.0
<b>Further information:</b>	No data available.



**Disclaimer:**

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED "AS IS," AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION<(>,<)> WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.