



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Tin Powder

### Other means of identification

**SDS number** 2BF  
**Materion Code** 2BF  
**CAS number** 7440-31-5  
**Synonyms** Tin

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

**Company name** Materion Advanced Chemicals Inc.  
**Address** 407 N 13th Street  
1316 W. St. Paul Avenue  
Milwaukee, WI 53233  
United States  
**Telephone** 414.212.0257  
**E-mail** advancedmaterials@materion.com  
**Contact person** Laura Hamilton  
**Emergency phone number** Chemtrec 800.424.9300

## 2. Hazard(s) identification

**Physical hazards** Flammable solids Category 2  
**Health hazards** Skin corrosion/irritation Category 2  
Serious eye damage/eye irritation Category 2A  
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation  
**Environmental hazards** Not classified.  
**OSHA defined hazards** Combustible dust

### Label elements



**Signal word** Danger  
**Hazard statement** Causes eye irritation. Causes skin irritation. May cause respiratory irritation.  
**Precautionary statement**  
**Prevention** Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear suitable protective clothing and eye/face protection.  
**Response** IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Gently wash with plenty of soap and water. If skin irritation occurs, seek medical advice/attention.  
**Storage** Store in a well-ventilated place. Keep container tightly closed. Store locked up.  
**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.  
**Hazard(s) not otherwise classified (HNOC)** None known.

Supplemental information None.

### 3. Composition/information on ingredients

#### Substances

| Chemical name | Common name and synonyms | CAS number | %   |
|---------------|--------------------------|------------|-----|
| Tin           | Tin                      | 7440-31-5  | 100 |

### 4. First-aid measures

|   |  |
|---|--|
| <b>Inhalation</b>   | Move to fresh air. If not breathing, give artificial respiration. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | Wash off with soap and water. If skin irritation or rash occurs: Get medical advice/attention.   |
| <b>Eye contact</b>  | Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops and persists. |
| <b>Ingestion</b>  | In the unlikely event of swallowing contact a physician or poison control center.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Irritation of eyes. Coughing. Irritant effects. Prolonged exposure may cause chronic effects.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Treat symptomatically.   |
| <b>General information</b>  | If you feel unwell, seek medical advice (show the label where possible).   |

### 5. Fire-fighting measures

|  |   |
|--|---|
| <b>Suitable extinguishing media</b>                                  | Confining and smothering metal fires is preferable rather than applying water. Powder. Dry sand.  |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.  |
| <b>Specific hazards arising from the chemical</b>                    | Decomposition of this product may yield metallic oxides.  |
| <b>Special protective equipment and precautions for firefighters</b> | No specific recommendations.  |
| <b>Fire fighting equipment/instructions</b>                          | Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.  |
| <b>General fire hazards</b>  | Flammable solid. High concentration of airborne dust may form explosive mixture with air.   |

### 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Ensure adequate ventilation. Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. |
| <b>Methods and materials for containment and cleaning up</b>               | Avoid the generation of dusts during clean-up. Sweep up or vacuum up spillage and collect in suitable container for disposal.     |
| <b>Environmental precautions</b>   | Attempt to stop the gas leak, if no risk is involved.   |

### 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Avoid heat, sparks, open flames and other ignition sources. Avoid prolonged exposure. Mechanical ventilation or local exhaust ventilation may be required. Practice good housekeeping. Avoid conditions which create dust. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store in original tightly closed container.  |

### 8. Exposure controls/personal protection

#### Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Material            | Type | Value               |
|---------------------|------|---------------------|
| Tin (CAS 7440-31-5) | PEL  | 2 mg/m <sup>3</sup> |

**US. ACGIH Threshold Limit Values**

| Material            | Type | Value               |
|---------------------|------|---------------------|
| Tin (CAS 7440-31-5) | TWA  | 2 mg/m <sup>3</sup> |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Material            | Type | Value               |
|---------------------|------|---------------------|
| Tin (CAS 7440-31-5) | TWA  | 2 mg/m <sup>3</sup> |

|  |   |
|--|---|
| <b>Biological limit values</b>   | No biological exposure limits noted for the ingredient(s).  |
| <b>Appropriate engineering controls</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>Individual protection measures, such as personal protective equipment</b> |   |
| <b>Eye/face protection</b>   | Wear safety glasses with side shields (or goggles).   |
| <b>Skin protection</b>   |   |
| <b>Hand protection</b>   | Wear appropriate chemical resistant gloves.   |
| <b>Other</b>   | Wear suitable protective clothing.  |
| <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>  | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.   |

**9. Physical and chemical properties**

|   |                                 |
|---|---------------------------------|
| <b>Appearance</b>                                   | Powder.                         |
| <b>Physical state</b>                               | Solid.                          |
| <b>Form</b>   | Solid. Powder.                  |
| <b>Color</b>  | Not available.                  |
| <b>Odor</b>   | Not available.                  |
| <b>Odor threshold</b>                               | Not available.                  |
| <b>pH</b>   | Not available.                  |
| <b>Melting point/freezing point</b>                 | 449.42 °F (231.9 °C)            |
| <b>Initial boiling point and boiling range</b>      | 4544.6 °F (2507 °C)             |
| <b>Flash point</b>                                  | Not available.                  |
| <b>Evaporation rate</b>                             | Not available.                  |
| <b>Flammability (solid, gas)</b>                    | Not available.                  |
| <b>Upper/lower flammability or explosive limits</b> |                                 |
| <b>Flammability limit - lower (%)</b>               | Not available.                  |
| <b>Flammability limit - upper (%)</b>               | Not available.                  |
| <b>Explosive limit - lower (%)</b>                  | Not available.                  |
| <b>Explosive limit - upper (%)</b>                  | Not available.                  |
| <b>Vapor pressure</b>                               | < 0.0000001 kPa (77 °F (25 °C)) |
| <b>Vapor density</b>                                | Not available.                  |

|  |                                     |
|--|-------------------------------------|
| <b>Relative density</b>                        | Not available.                      |
| <b>Solubility(ies)</b>                         |                                     |
| <b>Solubility (water)</b>                      | Insoluble                           |
| <b>Partition coefficient (n-octanol/water)</b> | Not available.                      |
| <b>Auto-ignition temperature</b>               | 1166 °F (630 °C)                    |
| <b>Decomposition temperature</b>               | Not available.                      |
| <b>Viscosity</b>                               | Not available.                      |
| <b>Other information</b>                       |                                     |
| <b>Density</b>                                 | 7.26 g/cm <sup>3</sup> estimated    |
| <b>Dynamic viscosity</b>                       | 1.85 mPa.s (464 °F (240 °C))        |
| <b>Explosive properties</b>                    | Not explosive.                      |
| <b>Kinematic viscosity</b>                     | 0.2547 mm <sup>2</sup> /s estimated |
| <b>Molecular formula</b>                       | Sn                                  |
| <b>Molecular weight</b>                        | 118.69 g/mol                        |
| <b>Oxidizing properties</b>                    | Not oxidizing.                      |
| <b>Specific gravity</b>                        | 7.27                                |
| <b>Surface tension</b>                         | 544 mN/m                            |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical 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>             | Water, moisture. Acids. Oxidizing material. Halogenated materials. Chlorine.                  |
| <b>Hazardous decomposition products</b>   | Decomposition of this product may yield metallic oxides.                                      |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Prolonged inhalation may be harmful.                     |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected.     |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation. |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.                   |

**Symptoms related to the physical, chemical and toxicological characteristics** Nausea, vomiting. Diarrhea.

### Information on toxicological effects

|  |  |
|--|--|
| <b>Acute toxicity</b>                    | Not known.   |
| <b>Skin corrosion/irritation</b>         | Prolonged skin contact may cause temporary irritation.   |
| <b>Serious eye damage/eye irritation</b> | Direct contact with eyes may cause temporary irritation.   |
| <b>Respiratory or skin sensitization</b> |  |
| <b>Respiratory sensitization</b>         | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>                | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>            | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>                   | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.                                  |

## IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

## OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

## US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects. |
| <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.  |
| <b>Chronic effects</b>                                    | Prolonged inhalation may be harmful.   |

## 12. Ecological information

|                                      |  |
|--------------------------------------|--|
| <b>Ecotoxicity</b>                   | 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 and degradability</b> | No data is available on the degradability of this product.   |
| <b>Bioaccumulative potential</b>     | No data available.   |
| <b>Mobility in soil</b>              | No data available.   |
| <b>Other adverse 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>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site.   |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | 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). |
| <b>Contaminated packaging</b>                | 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.       |

## 14. Transport information

### DOT

|                                     |                                  |
|-------------------------------------|----------------------------------|
| <b>UN number</b>                    | UN3089                           |
| <b>UN proper shipping name</b>      | Metal powders, flammable, n.o.s. |
| <b>Transport hazard class(es)</b>   |                                  |
| <b>Class</b>                        | 4.1                              |
| <b>Subsidiary risk</b>              | -                                |
| <b>Label(s)</b>                     | 4.1                              |
| <b>Packing group</b>                | III                              |
| <b>Special precautions for user</b> | Not available.                   |
| <b>Special provisions</b>           | IB6, T1, TP33                    |
| <b>Packaging exceptions</b>         | 151                              |
| <b>Packaging non bulk</b>           | 213                              |
| <b>Packaging bulk</b>               | 240                              |

### IATA

|                                |                                  |
|--------------------------------|----------------------------------|
| <b>UN number</b>               | UN3089                           |
| <b>UN proper shipping name</b> | Metal powders, flammable, n.o.s. |

**Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -  
**Label(s)** 4.1

**Packing group** III

**Environmental hazards** No.

**Special precautions for user** Not available.

**IMDG**

**UN number** UN3089

**UN proper shipping name** Metal powders, flammable, n.o.s.

**Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -  
**Label(s)** 4.1

**Packing group** III

**Environmental hazards**

**Marine pollutant** No.

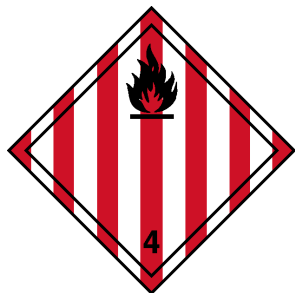
**EmS** Not available.

**Special precautions for user** Not available.

**DOT**



**IATA; IMDG**



## 15. Regulatory information

### US federal regulations

**Toxic Substances Control Act (TSCA)**

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

Not regulated.

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

Not listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)**

Not regulated.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Flammable (gases, aerosols, liquids, or solids)  
Combustible dust  
Skin corrosion or irritation  
Serious eye damage or eye irritation  
Specific target organ toxicity (single or repeated exposure)

**SARA 313 (TRI reporting)**

Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

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

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**California Proposition 65**

**US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))**

Tin (CAS 7440-31-5)

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

**Issue date** 12-12-2017

**Revision date** 12-10-2019

**Version #** 03

**Disclaimer** Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.