



## SAFETY DATA SHEET (SDS)

Tin / Bismuth Solder Alloy

Date: 1/1/2020

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Tin / Bismuth Solder Alloy

**CAS No:** 7440-31-5 Tin (Sn)

**Index No:**

**EC No:** 231-141-8

**CAS No:** 7440-69-9 Bismuth (Bi)

**Index number:**

**EC number:** 231-177-4

**RECOMMENDED USE:** Solder

#### Details of the supplier of the safety data sheet:

**MANUFACTURER**

Amerway Inc.  
3701 Beale Ave.,  
Altoona, PA 16601

**PHONE:** 814-944-0200

**FAX PHONE:** 814-944-1463

**EMERGENCY TELEPHONE NUMBER:**

**CHEMTREC:** 800-424-9300

**CHEMTREC (Outside US & Canada):** 703-527-3887

### SECTION 2: HAZARDS IDENTIFICATION

**CLASSIFICATION OF CHEMICAL:** This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

#### **GHS PICTOGRAMS:**



GHS07



GHS08

**SIGNAL WORD:** Warning

**HAZARD STATEMENT:**

**H302** Harmful if swallowed.

**H320** Causes eye

**PRECAUTIONARY STATEMENT:**





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**P261** Avoid breathing dust/fume/gas/mist/vapours/spray.  
**P264** Wash face, hands and any exposed skin thoroughly after handling  
**P281** Use personal protective equipment as required.  
**P333+313** If skin irritation or rash occurs: Get medical attention.

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### INGREDIENT:

<u>CAS NO.</u>	<u>DESCRIPTION</u>	<u>% WT</u>
7440-31-5	Tin (Sn)	38-46
7440-69-9	Bismuth (Bi)	54-62

### SECTION 4: FIRST AID MEASURES

**EMERGENCY OVERVIEW:** IF exposed or concerned: Get medical attention/advice

#### POTENTIAL HEALTH EFFECTS FOLLOWING

**EYE CONTACT:** Rinse immediately with plenty of water, also under eyelids, for at least 15 minutes.

**SKIN CONTACT:** Immediately wash with soap and water and rinse thoroughly, for at least 15 minutes.

**INGESTION:** Do not induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth

**INHALATION:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** Treat symptomatically.

### SECTION 5: FIRE-FIGHTING MEASURES

**SUITABLE EXTINGUISHING MEDIA:** Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), sand, extinguishing powder.

**UNSUITABLE EXTINGUISHING MEDIA:** No information available

**FLASH POINT:** No information available

**F:** No information available

**C:** No information available

**METHOD USED:** No information available

#### EXPLOSION LIMITS

**UPPER:** No data available.

**LOWER:** No data available.

**SENSITIVITY TO MECHANICAL IMPACT:** No information available.

**SENSITIVITY TO STATIC DISCHARGE:** No information available.

**SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:** Keep product and empty container away from heat and sources of ignition.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Lead and Antimonial fumes at high temperatures.

#### NFPA HAZARD CLASSIFICATION

**HEALTH:** 1 **FLAMMABILITY:** 0 **REACTIVITY:** 0

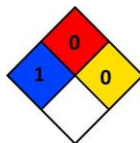




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### HMIS HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

HEALTH	1
FIRE	0
REACTIVITY	0

**SPECIAL FIRE FIGHTING EQUIPMENT/PROCEDURES:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS AND PROTECTIVE EQUIPMENT:** Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

**ENVIRONMENTAL PRECAUTIONS:** Should not be released into the environment. Do not allow to enter sewers/surface or ground water. Do not flush into surface water or sanitary sewer system.

**CONTAINMENT AND CLEANUP:** Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

### SECTION 7: HANDLING AND STORAGE

**HANDLING:** Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

**STORAGE:** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep under nitrogen.

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### EXPOSURE GUIDELINES:

##### ROUTES OF EXPOSURE:

**EYES:** Dust or fume will be irritant.

**SKIN:** Irritant to skin and mucous membranes.

**INGESTION:** Ingestion of dust or fume must be avoided. Lead is toxic and cumulative, affecting the kidneys, reproductive system and nervous system. Symptoms of chronic overexposure include anemia, insomnia, weakness, irritability, constipation and stomach pains.

Tin is not regarded as toxic but excessive exposure can cause fever, nausea, stomach cramps or diarrhea. This product when used for welding and similar applications, produces chemicals known to cause cancer and birth defects (or reproductive harm). (California Health & Safety Code 25249.5 et seq).

**INHALATION:** Inhalation of dust and fumes must be avoided. This product, when used for welding and similar applications produces chemicals known to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25249.5 et seq).

**ENGINEERING CONTROLS:** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.





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### PERSONAL PROTECTIVE EQUIPMENT

**SKIN AND BODY PROTECTION :** Wear appropriate protective gloves and clothing to prevent skin exposure.

**RESPIRATORY PROTECTION** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**EYE/FACE PROTECTION:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**WORK HYGIENIC PRACTICES:** Lead use is regulated under OSHA 29CFR 1910.1025. No food or drink should be allowed in areas where these products are handled. Personnel must wash thoroughly after handling the metal before drinking, eating or smoking.

### **EXPOSURE CONTROLS:**

**ACGIH TLV-TWA:** Tin                      2mg/cu ACGIH  
   2mg/cu m (inorganic) OSHA  
   0/1mg/cu m (organic) OSHA

Bismuth                      Not Regulated ACGIH/OSHA

### **COMPONENTS WITH LIMIT VALUES THAT REQUIRE MONITORING AT THE WORKPLACE:**

#### **7440-31-5 TIN (Sn)**

**PEL – Long term value:** 2 mg/m<sup>3</sup>

**REL – Long term value:** 2 mg/m<sup>3</sup>

**TLV – long term value:** 2 mg/m<sup>3</sup>

#### **7440-69-9 Bismuth (Bi)**

**PEL – Long term value:** 15 mg/m<sup>3</sup> (total); 5 mg/m<sup>3</sup> (resp)

**REL – Long term value:** 10 mg/m<sup>3</sup> (total); 5 mg/m<sup>3</sup> (resp)

**TLV – Long term value:** mg/m<sup>3</sup> (Not listed)

### **NOTES:**

**PEL=** Permissible Exposure Limit (OSHA)

**TLV=** Threshold Limit Value (ACGIH)

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### **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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**PHYSICAL STATE:** Solid

**APPEARANCE:** Silver grey

**ODOR:** Odorless

**ODOR THRESHOLD:**

**pH Value (-g/l):** N/A

**MELTING POINT/RANGE:** 183-238 °C (361-460 °F)

**BOILING POINT/RANGE:**

**FLASH POINT:**

**FREEZING POINT/RANGE:**





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EVAPORATION RATE:

FLAMMABILITY (SOLID, GAS):

FLAMMABILITY OR EXPLOSIVE LIMITS

UPPER:

LOWER:

VAPOR PRESSURE: Not applicable

VAPOR DENSITY: Not applicable

RELATIVE DENSITY: at 20 °C (68 °F): 8.4 – 9.3 g/cm<sup>3</sup> (70.098 – 77.60 lbs/gal)

SOLUBILITY IN WATER: Insoluble

PARTITION COEFFICIENT; N-OCTANOL/WATER:

AUTOIGNITION TEMPERATURE:

DECOMPOSITION TEMPERATURE:

VISCOSITY:

MOLECULAR FORMULA:

MOLECULAR WEIGHT:

SOLVENT CONTENT: Organic solvents = 0/0%, Solid Content = 100.0%

### SECTION 10: STABILITY AND REACTIVITY

REACTIVE HAZARD:

STABILITY: Stable under normal conditions.

HAZARDOUS REACTIONS: None under normal processing.

CONDITIONS TO AVOID: Incompatible products. Excess heat. Avoid dust formation. Exposure to air.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents, oxidizers,

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: No decomposition if used according to specifications.

HAZARDOUS POLYMERIZATION: Will not occur

### SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

**IARC: (International Agency for Research on Cancer) IARC: (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

**NTP: (National Toxicity Program) NTP: (National Toxicity Program)**

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human

Carcinogen

**ACGIH: (American Conference of Governmental Industrial Hygienists)**

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

**Mexico - Occupational Exposure Limits - Carcinogens**

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects: No information available





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**Reproductive Effects:** No information available.  
**Developmental Effects:** No information available.  
**Teratogenicity:** No information available.

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed:** Bismuth Causes damage to the following organs: lungs, mucous membranes.

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

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### SECTION 12: ECOLOGICAL INFORMATION

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**ECOTOXICITY:** No further relevant information available.

**PERSISTENCE AND DEGRADABILITY:** Bismuth- Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**BIOACCUMULATIVE POTENTIAL:** No further relevant information available.

**MOBILITY IN SOIL:** No further relevant information available.

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### SECTION 13: DISPOSAL CONSIDERATIONS

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**WASTE DISPOSAL METHODS:** Disposal must be made according to official regulations. If proper disposal methods are not available, return product to supplier for reprocessing.

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### SECTION 14: TRANSPORT INFORMATION

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#### LAND TRANSPORT (DOT/ADR/RID)

**UN/NA NUMBER:** Not Regulated.  
**UN PROPER SHIPPING NAME:** Not Regulated.  
**TRANSPORT HAZARD CLASS(ES):** Not Regulated.  
**PACKING GROUP:** Not Regulated.

#### INLAND WATERWAY TRANSPORT (ADN)

**UN/NA NUMBER:** Not Regulated.  
**UN PROPER SHIPPING NAME:** Not Regulated.  
**TRANSPORT HAZARD CLASS(ES):** Not Regulated.  
**PACKING GROUP:** Not Regulated.

#### SEA TRANSPORT (IMDG)

**UN/NA NUMBER:** Not Regulated.  
**UN PROPER SHIPPING NAME:** Not Regulated.  
**TRANSPORT HAZARD CLASS(ES):** Not Regulated.  
**PACKING GROUP:** Not Regulated.

#### AIR TRANSPORT (ICAO-TI/IATA-DGR)

**UN/NA NUMBER:** Not Regulated.  
**UN PROPER SHIPPING NAME:** Not Regulated.  
**TRANSPORT HAZARD CLASS(ES):** Not Regulated.  
**PACKING GROUP:** Not Regulated.

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### SECTION 15: REGULATORY INFORMATION

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### U.S. Federal Regulations

**TSCA 12(b)** All components listed for the subject finished product are on the TSCA Inventory of Chemical Substances and are not subject to any chemical specific regulation under TSAC Section 12(b) export notification requirements delineated at 40 CFR part 707, subpart D.

All ingredients are listed or exempt from listing.

**SARA 313** Substance is listed.

### **SARA 311/312 Hazardous Categorization**

**Acute Health Hazard**

**Chronic Health Hazard**

**Fire Hazard**

**Sudden Release of Pressure Hazard**

**Reactive Hazard**

### **Proposition 65**

**Chemicals known to cause cancer:** None of the ingredients listed.

**Chemicals known to cause reproductive toxicity for females:** None of the ingredients listed.

**Chemicals known to cause reproductive toxicity for males:** None of the ingredients listed.

**Chemicals known to cause developmental toxicity:** This product contains a chemical(s) known to the State of California to cause birth defects and/or other reproductive harm.

### **Carcinogenic Categories**

**EPA (Environmental Protection Agency):**

**TLV (Threshold Limit Value established by ACGIH)**

**NIOSH-Ca (National Institute of Occupational Safety and Health)**

**OSHA-Ca (Occupational Safety & Health Administration)**

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### **SECTION 16: OTHER INFORMATION**

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#### **PREPARATION INFORMATION**

**NAME:** Terry Buck

**COMPANY:** Amerway, Inc.

**EMAIL:** tbuck@amerway.com

**CREATION DATE:** 01/01/2012

**REVISION DATE:** 11/25/2019

**REVISION SUMMARY:** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

#### **DISCLAIMER:**

This information is given in good faith, no warranty, express or implied is made. Amerway Inc. makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchasers use. The data on this Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Safety Data Sheet as a source for hazard information.

**End of SDS**