



# SAFETY DATA SHEET (SDS)

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## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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**Product Name:** Lead-Free Ruby Solder Alloy

**Product Type:** Bar/Wire

**Recommended Use:** Soldering

**Latest Revision Date:** March 20, 2024

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

**Manufacturer:** Amerway Inc.  
3701 Beale Ave.,  
Altoona, PA 16601

**Phone:** 814-944-0200  
**Fax Number:** 814-944-1463

**Emergency Telephone Numbers:** CHEMTREC: 800-424-9300  
CHEMTREC (Outside US & Canada): 703-527-3887

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## SECTION 2: HAZARDS IDENTIFICATION

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**OSHA/HCS Status:** This material is considered non-hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this SDS contains critical information pertaining to proper use, storage, and handling. Copies of this SDS should be made available to all relevant employees.

**Physical Hazards:** Not applicable.

**Health Hazards:** Not applicable.

**Environmental Hazards:** Not applicable.

**Signal Word:** No signal word.

**Hazard Statement(s):** No known immediate or chronic effects. No significant health hazards present.

**Precautionary Statement(s):**

**Prevention:** Not applicable.

**Response:** Not applicable.

**Storage:** Not applicable.

**Disposal:** Not applicable.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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**Composition:**

<b><u>CAS No.</u></b>	<b><u>Common Name/Synonyms</u></b>	<b><u>% WT</u></b>
7440-31-5	Tin (Sn)	98-100
7440-50-8	Copper (Cu)	2-3
7440-22-4	Silver (Ag)	<1.0

Concentrations listed within a range protect proprietary information or account for batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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**SECTION 4: FIRST AID MEASURES**

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**Emergency Overview:** Take off all contaminated clothing immediately. Ensure that proper training of the hazards associated with the materials involved are provided to handlers and medical personnel, and that precautions are maintained to prevent further exposure.

**Potential Health Effects Following:**

**Eye Contact:** Immediately flush eyes with running water for at least 15 minutes. Remove contact lenses if present and easy to do so. Get medical advice or attention if eye irritation occurs or damage is caused to the eye.

**Skin Contact:** Rinse skin with water, wash with a recognized skin cleaner. Cuts should be treated and covered.

**Ingestion:** Rinse mouth with water.

**Inhalation:** Not applicable

**Acute and Delayed Health Hazards:**

**Eye Contact:** No known significant hazards.

**Skin Contact:** No known significant hazards.

**Ingestion:** No known significant hazards.

**Inhalation:** No known significant hazards.

**Most Important Symptoms/Effects:** No known significant health effects or hazards arise from this product.

**Notes to Physicians and First Aid Providers:** Treat patients symptomatically. Contact a physician if large quantities have been ingested. No action involving personal risk shall be taken by personnel without suitable training.

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**SECTION 5: FIRE-FIGHTING MEASURES**

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**Suitable Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide. a tri-class dry chemical fire extinguisher. Sand or earth may be used for small fires, only.

**Unsuitable Extinguishing Media:** None known.

**Flash Point:** Not applicable.

**Autoignition Temperature:** No specific data.

**Explosion Limits:**

**Upper:** No specific data.  
**Lower:** No specific data.

**Specific Hazards Arising from the Chemical:** No specific fire or explosive hazards.

**Hazardous Thermal Decomposition Products:** Metal oxide/oxides.

<b>Regulatory Ratings:</b>	<b>NFPA (scale 0-4)</b> Health= 0 Fire= 0 Reactivity= 0	<b>HMIS (scale 0-4)</b> Health= 0 Fire= 0 Reactivity= 0
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**Special Fire Fighting Equipment/Procedures:** Promptly isolate the scene by removing all non-essential personnel away from the incident in case of fire. No actions involving personal risk shall be taken by personnel without training.

**Special Protective Equipment for Personnel:** Fire-fighters and emergency personnel must utilize self-contained breathing apparatuses (SCBA) operating in positive pressure or other appropriate protection. Wear full protective clothing.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions and Protective Equipment:** Ensure adequate ventilation. Use personal protective equipment, including proper respiratory, eye/face, and skin protection. See section 8 for appropriate personal protective equipment. Remove unnecessary personnel and restrict access to the incident area. Refer to section 13 for proper waste disposal methods. No action shall be taken involving personnel who are without suitable training.

**Environmental Precautions:** Should not be released into the environment. Avoid discharge into sewers/surface or ground water. Do not flush into surface water or sanitary sewer system. Inform relevant authorities if the product has caused environmental pollution. Use appropriate containment methods to prevent environmental contamination.

**Containment and Cleanup:** Sweep up or vacuum up and collect in suitable container for recovery or disposal. For small incidents, absorb with inert absorbent material such as vermiculite, sand, or earth and place into a well labeled container for later disposal. Keep in suitable, closed containers for disposal. Refer to section 13 for proper waste disposal methods.

## SECTION 7: HANDLING AND STORAGE

**Safe Handling Methods:** Use proper protective equipment and avoid exposure to material. Observe good hygiene practices. Eating, drinking, and smoking should be prohibited where material is in use. Handlers of material should wash hands before eating, drinking, or smoking. Remove contaminated clothing before entering eating areas.

**Safe Storage Conditions:** Keep product in well-ventilated areas.

**Other Precautions and Incompatibilities:** Prevent material from contact with incompatible materials. Contact with strong oxidizing materials may result in degradation of materials. Store away from direct sunlight. Do not reuse empty containers. Remaining residues in empty containers have the potential to be an environmental pollutant and should be handled and stored as if they were the material itself.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines:** (as tin) PEL 2 mg/m<sup>3</sup> (OSHA); TLV 2 mg/m<sup>3</sup> (ACGIH)

### Occupational Exposure Limits:

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

<u>Component</u>	<u>Type</u>	<u>Values</u>
Tin	PEL	2 mg/m <sup>3</sup> , 8 hr
Silver	PEL	0.01 mg/m <sup>3</sup> , 8 hr

#### US. ACGIH Threshold Limit Values (TLV)

<u>Component</u>	<u>Type</u>	<u>Values</u>
Tin	TWA	2 mg/m <sup>3</sup> , 8 hr
Silver	TWA	0.1 mg/m <sup>3</sup> , 8 hr

#### US. NIOSH: Pocket Guide to Chemical Hazards (REL)

<u>Component</u>	<u>Type</u>	<u>Values</u>
Tin	PEL	2 mg/m <sup>3</sup> , 10 hr
Silver	PEL	0.01 mg/m <sup>3</sup> , 8 hr

**Engineering Controls:** Use with adequate ventilation systems. Monitor airborne concentration levels and keep within regulatory limits. Provide eyewash stations and safety showers for emergency use.

**Environmental Exposure Controls:** Work process equipment used that handles this product should be monitored regularly to ensure that environmental emissions do not exceed local, state, or federal regulations. If needed, utilize filters and scrubbers to maintain acceptable emissions. Engineering modifications may be necessary if material is being overexposed to the environment.

### Personal Protective Equipment and Protective Measures:

**Skin and Body:** Protective, puncture and heat resistant gloves and clothing complying with approved standards. Check glove manufacturers' specifications to determine approximate breakthrough times. Ensure that glove materials are compatible with all materials used in the workplace.

<b>Respiratory:</b>	If needed, utilize a respirator that meets the appropriate standards for the level of exposure.
<b>Eye and Face:</b>	If not using a full face respirator, ensure that safety eyewear complies with approved standards. Depending on the degree of exposure, higher eye/face protection may be needed. Ensure that eyewash stations and safety showers are present in areas where material is handled.
<b>Other:</b>	Higher degrees of protection may be required dependent on the specific application and workplace conditions. When evaluating additional protective equipment, consider the inherent environmental conditions and ergonomic considerations.
<b>Additional Considerations:</b>	The above personal protective equipment (PPE) are recommendations based on the material used and may not include environmental considerations such as workplace conditions, practices, etc. The employer/user of this product must perform a Hazard Assessment of the workplace according to OSHA regulations 29 CFR 1910.132 to determine the appropriate protective equipment necessary for the application and task involving exposure.
<b>Work Hygienic Practices:</b>	Always observe good personal hygiene measures during and after handling of materials. Wash hands or exposed areas before eating, drinking, or smoking to avoid accidental ingestion. Handlers of material should remove all contaminated clothing and protective equipment before entering eating facilities. Keep material separated from foodstuffs, beverages, and feed. Potentially contaminated clothing and protective equipment should not leave the workplace facilities. Provide eyewash stations and safety showers.

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## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

<b>Physical State:</b>	Solid
<b>Color:</b>	Metallic, gray/silver
<b>Odor:</b>	Not Applicable
<b>Odor Threshold:</b>	Not Determined
<b>pH:</b>	Not Applicable
<b>Melting Point/Range:</b>	226 – 240 °C (439 – 464 °F)
<b>Boiling Point/Range:</b>	Not Determined
<b>Critical Temperature:</b>	Not Determined
<b>Flash Point:</b>	Not Determined
<b>Evaporation Rate:</b>	Not Applicable
<b>Flammability (Solid, Gas):</b>	Not Determined
<b>Explosive Limits</b>	
<b>Upper:</b>	Not Applicable
<b>Lower:</b>	Not Applicable
<b>Vapor Pressure, 38 °C:</b>	Not Determined
<b>Vapor Density:</b>	Not Determined
<b>Relative Density:</b>	Not Determined
<b>Solubility in Water:</b>	Not Determined
<b>Partition Coefficient:</b>	Not Determined
(n-octanol/water)	
<b>Autoignition Temperature:</b>	Not Determined
<b>Decomposition Temperature:</b>	Not Determined
<b>Viscosity, 20 °C:</b>	Not Determined

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## SECTION 10: STABILITY AND REACTIVITY

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<b>Reactivity:</b>	This product is non-reactive under standard conditions of use, storage, and transport.
<b>Chemical Stability:</b>	This product is stable under standard conditions.
<b>Hazardous Reactions:</b>	Hazardous reactions will not occur. Hazardous polymerization does not occur.
<b>Conditions to Avoid:</b>	Contact with oxidizing materials.
<b>Incompatible materials:</b>	Avoid contact with strong oxidizers, acetaldehyde, chlorine, ethylene oxide, acids, and isocyanates. Contact with oxidizers could result in degradation of material quality.
<b>Hazardous Decomposition Products:</b>	No hazardous decomposition products are known. Under standard conditions of storage and use, decomposition does not occur.

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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<b>Acute Toxicity:</b>	LD50 Oral - Rat - >2000 mg/kg LD50 Dermal - Rabbit - >2000 mg/kg
<b>Skin Corrosion/Irritation:</b>	Skin - Rabbit Result: Mild skin irritation
<b>Serious Eye Damage or Eye Irritation:</b>	Eyes - Rabbit Result: Eye irritation - 24 h
<b>Respiratory or Skin Sensitization:</b>	Respiratory: Not studied, classification is not possible. Skin: Not studied, classification is not possible.
<b>Germ Cell Mutagenicity:</b>	No data available. Not studied, classification is not possible.
<b>Carcinogenicity:</b>	This product does not contain components that are classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Isopropyl)
<b>Reproductive Toxicity:</b>	No data available. Not studied, classification is not possible.
<b>Specific Target Organ Toxicity, Single:</b>	No data available. Not studied, classification is not possible.
<b>Specific Target Organ Toxicity, Repeated:</b>	No data available. Not studied, classification is not possible.
<b>Aspiration Hazard:</b>	No data available. Not studied, classification is not possible.

**Routes of Exposure – Acute Health Effects**

<b>Eyes:</b>	No data available. Not studied, classification is not possible.
<b>Skin:</b>	No data available. Not studied, classification is not possible.
<b>Ingestion:</b>	No data available. Not studied, classification is not possible.
<b>Inhalation:</b>	No data available. Not studied, classification is not possible.

**Chronic Health Hazards:** No data available. Not studied, classification is not possible..

**Symptoms Arising from Chemical/Toxicological Characteristics**

<b>Eyes:</b>	No data available. Not studied, classification is not possible.
<b>Skin:</b>	No data available. Not studied, classification is not possible.
<b>Ingestion:</b>	No data available. Not studied, classification is not possible.
<b>Inhalation:</b>	No data available. Not studied, classification is not possible.

**Additional Information or Definitions:** To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12: ECOLOGICAL INFORMATION**

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<b>Ecotoxicity, Aquatic Toxicity:</b>	This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills or other serious environmental exposure can have a harmful or damaging effect on the environment.
<b>Toxicity to fish:</b>	LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 hr LC50 - Lepomis macrochirus (bluegill) - > 1,400 mg/l, 96 hr
<b>Toxicity to daphnia And other aquatic invertebrates:</b>	EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 hr Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 hr
<b>Toxicity to algae:</b>	EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 hr EC50 - Algae - > 1,000.00 mg/l - 24 hr

<b>Persistence and Biodegradability:</b>	No data is available on the degradability of any components of the product mixture.
<b>Bioaccumulative Potential:</b>	No data available, not well studied.
<b>Mobility in Soil:</b>	No data available, not well studied.
<b>Other Adverse Effects:</b>	No data available, not well studied.

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#### **SECTION 13: DISPOSAL CONSIDERATIONS**

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<b>Waste Disposal Methods:</b>	When possible, avoid generation of waste. Collect and reclaim or dispose of materials in sealed containers at licensed waste disposal sites, or for collection by approved, licensed disposal contractors. Disposal must be made according to all federal, state, and local regulations that may apply.
<b>Hazardous Waste Code:</b>	Not applicable.
<b>Waste from Residues</b> <b>Empty Containers:</b>	Empty containers or liners retain product residues and have the potential to be hazardous. Empty containers and liners <b>Or</b> should be handled as if they were the material itself. Material residues and containers should be disposed of in a safe manner, see Waste Disposal Methods. Do not reuse containers that have not been properly washed.

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#### **SECTION 14: TRANSPORT INFORMATION**

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##### **Land Transport (DOT/ADR/RID), Sea Transport (IMDG), Air Transport (ICAO-TI/ITA-DGR)**

<b>UN/NA Number:</b>	Not regulated.
<b>UN Proper Shipping Name:</b>	Not regulated.
<b>Transport Hazard Class(es):</b>	Not regulated.
<b>Packing Group:</b>	Not regulated.
<b>Environmental Hazards:</b>	Not regulated.
<b>ERG Number:</b>	Not regulated.
<b>Special Precautions:</b>	Within user's premises: transport in closed, upright containers.

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#### **SECTION 15: REGULATORY INFORMATION**

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##### **U.S. Federal Regulations**

<b>TSCA 12(b):</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.
<b>SARA 303/304 Hazardous Categorization:</b>	None of the ingredients are listed.

<b>SARA 311/312 Hazardous Categorization:</b>	None of the ingredients are listed.
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##### **Proposition 65, Chemicals Known to Cause:**

<b>Cancer:</b>	None of the ingredients are listed.
<b>Reproductive Toxicity (Females):</b>	None of the ingredients are listed.
<b>Reproductive Toxicity (Males):</b>	None of the ingredients are listed.
<b>Developmental Toxicity:</b>	None of the ingredients are listed.

**Other Regulations**

**Clean Air Act:** Not regulated.

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**SECTION 16: OTHER INFORMATION**

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**Preparation Information**

**Name:** Ethan Miller  
**Company:** Amerway, Inc.  
**E-Mail:** emiller@amerway.com

**Creation Date:** 01/01/2020  
**Latest Revision:** 03/20/2024

**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**