

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND SUPPLIER

**Product Name:** Bernzomatic Lead-Free Silver Bearing Solder; Tin/Copper/Silver Acid Core Solder Alloys

**Other Names:** Tin/Copper/Silver formulation (<1% silver content) solders or alloys in the following form: wire with acid flux core

**Recommended use:** Metalwork solder for industrial applications.

**Supplier:** Irwin Industrial Tool Company Pty Ltd  
**ABN:** 30 005 543 966  
**Address:** 2 National Drive  
 Lyndhurst VIC 3975  
 Australia

**Telephone:** +61 8 9277 5277 (WA) or +61 3 8787 3888 (all other states)

**Facsimile:** +61 8 9277 6277 (WA) or +61 3 8787 3800 (all other states)

**Emergency Phone:** (08) 9277 5277 (WA: 8.30 am – 5 pm) or (03) 8787 3888 (Vic: 8 am – 6 pm)

## 2. HAZARDS IDENTIFICATION

## NON-HAZARDOUS SUBSTANCE – NON-DANGEROUS GOODS

**Risk phrases:** None allocated

**Safety phrases:** None allocated

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical identity	CAS Number	Proportion
Tin	7440-31-5	> 80 %
Copper	7440-50-8	1.0 – 10.0 %
Urea (core component)	57-13-6	1.0 – 6.0 %
Silver	7440-22-4	< 1.0 %

## 4. FIRST AID MEASURES

Exposure to the solid form presents few health hazards in itself. However, normal handling or processing of this material may result in the generation of tin and copper dusts and/or fumes, which may present a health hazard. Persons with pre-existing medical conditions of the lungs (e.g. Wilson's Disease) may experience aggravation by exposure. If poisoning occurs, contact a doctor or Poisons Information Centre on 13 11 26.

**Swallowed:** Not considered a normal route of exposure. If swallowed, affected person should drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by a physician. Obtain immediate medical attention.

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**Eye:** Immediately flush eyes with plenty of running water to remove particulate, lifting lower and upper eyelids occasionally. Seek medical attention if irritation occurs or persists.

**Skin:** Immediately wash affected skin with soap and plenty of water. If irritation develops or persists obtain medical attention.

**Inhaled:** Remove from exposure. Obtain immediate medical attention. If breathing has stopped, initiate artificial respiration.

**Notes to doctor:** Treat symptomatically and supportively.

**5. FIRE FIGHTING MEASURES**

**Specific hazards:** The solid metal form is not a fire hazard. However, dust generated from processing operations may present a moderate fire or explosion hazard.

**Extinguishing media:** Use extinguishing agents appropriate for the surrounding materials.

**Fire fighting procedures:** If involved in a fire, firefighters must wear self-contained breathing apparatus with full face-mask and full protective clothing.

**Hazardous Decomposition Products:** At temperatures above the melting point, metal oxide fumes may be evolved.

**Hazchem Code:** None allocated

**6. ACCIDENTAL RELEASE MEASURES**

Eliminate all sources of ignition – no smoking. Take precautionary measures against static discharges. Evacuate all personnel from the affected area. Ventilate area well and ensure appropriate personal protective equipment is worn (e.g. protective clothing and respiratory protection where significant dust/fume exposure exists). Minimise all exposure to the dust form of product. Clean up spills using dustless methods (e.g. vacuum cleaner) and place in sealed, labelled containers for recycling or disposal. Do not use compressed air. Do not flush to waterways.

**7. HANDLING AND STORAGE**

Observe good housekeeping procedures to prevent dust accumulation. Keep material dry. Avoid storage near incompatible materials (see Section 10). Keep product away from children.

**Handling:** Do not allow eating, drinking or the use of cosmetics or tobacco products while handling or processing material or in solder work areas. Observe good oral hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Full protective clothing is required to be worn by workers exposed to concentrations of dust and/or fume above the occupational exposure standards (see Section 8), and showering is required before changing into street clothes. Avoid inhalation and ingestion of product, and activities which generate dust or fume. Keep melting/soldering temperatures as low as possible to minimise the generation of fumes.

**Storage:** Store in a tightly closed container in a cool, dry location. Ensure storage area is well-ventilated. Avoid dust generation. Store away from heat sources and incompatible materials.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## National occupational exposure standards

Substance	TWA		STEL		Carcinogen Category	Notices
Tin, metal	--	2 mg/m <sup>3</sup>	None allocated	None allocated	None allocated	None allocated
Copper, fume	--	0.2 mg/m <sup>3</sup>	None allocated	None allocated	None allocated	None allocated
Copper, dusts and mists	--	1 mg/m <sup>3</sup>	None allocated	None allocated	None allocated	None allocated
Silver, metal	--	0.1 mg/m <sup>3</sup>	None allocated	None allocated	None allocated	None allocated

As published by Australian Safety and Compensation Council.

Exposure Standard (TWA) is the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life. According to current knowledge this concentration should neither impair the health nor cause undue discomfort to nearly all workers.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These Exposure Standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

**Engineering controls:** Local exhaust ventilation and/or mechanical (general) exhaust is recommended.

**Personal Protection**

**Skin:** If prolonged contact/heat is likely to occur, wear thermal resistant gloves (e.g. welder's glove/gauntlet).

**Eye:** Safety glasses or goggles are recommended where the possibility exists of getting dust particulates in the eyes. Safety glasses with face shield are recommended for work around molten metal.

**Respiratory:** Respiratory protection (solid/liquid particulate filter) is required where airborne concentrations are likely to exceed the national occupational exposure standards.

Do not smoke while handling product. Safety equipment should be worn as appropriate for the work environment. Keep working clothing separate from street clothes.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	silver to silver-grey metallic solid with no odour
<b>Boiling Point:</b>	no data available
<b>Melting Point:</b>	227 - 250°C
<b>Vapour pressure:</b>	not applicable
<b>Specific gravity:</b>	7.39
<b>Flash Point:</b>	non-flammable
<b>pH:</b>	not applicable
<b>Flammability Limits:</b>	not applicable
<b>Autoignition temperature:</b>	no data available
<b>Solubility in water:</b>	insoluble

## 10. STABILITY AND REACTIVITY

<b>Chemical stability:</b>	Stable.
<b>Hazardous polymerization:</b>	Will not occur.
<b>Incompatible materials:</b>	Chlorine, mineral turpentine, magnesium and acetylene gas.
<b>Conditions to avoid:</b>	Not applicable.
<b>Hazardous decomposition products:</b>	At temperatures above the melting point, metal oxide fumes may be evolved.

**11. TOXICOLOGICAL INFORMATION**

**Swallowed:** Not considered a likely route of exposure for the solid product.

**Eye:** Eye contact with molten particulates will most certainly result in loss of sight. Acute overexposure to dusts and/or fumes during processing can cause irritation of the eyes and mucous membranes.

**Skin:** Skin contact with the molten product can cause severe burns. Acute overexposure to dusts and/or fumes during processing can cause irritation of the skin.

**Inhaled:** Acute overexposure to copper dusts or fumes can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining of the mouth which is generally attributable to localised tissue effect rather than general toxicity. Acute overexposure to dusts and/or fumes during processing can cause irritation of the respiratory system.

**Chronic:** Chronic or prolonged overexposure to tin can result in benign pneumoconiosis (stannous). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors.

**12. ECOLOGICAL INFORMATION**

**Environmental Fate:** This material is not expected to biodegrade when released into the soil.

**13. DISPOSAL CONSIDERATIONS****Disposal Method:**

Recycle or reuse wherever possible. Otherwise, dispose of waste and containers in compliance with all applicable federal, state and local regulations. Suitable for disposal to landfill sites. Keep out of sewerage systems, drains and waterways.

**14. TRANSPORT INFORMATION****Road and Rail Transport (Australian Dangerous Goods Code):**

<b>UN Number:</b>	None allocated
<b>Proper Shipping Name:</b>	None allocated
<b>Class:</b>	None allocated
<b>Hazchem Code:</b>	None allocated
<b>Packing Group:</b>	None allocated

**Marine Transport (International Maritime Dangerous Goods Code):**

<b>UN Number:</b>	None allocated
<b>Proper Shipping Name:</b>	None allocated
<b>Class:</b>	None allocated
<b>Packing Group:</b>	None allocated
<b>Marine Pollutant:</b>	No

**Air Transport (International Air Transport Association Dangerous Goods Regulations):**

<b>UN Number:</b>	None allocated
<b>Proper Shipping Name:</b>	None allocated
<b>Class:</b>	None allocated
<b>Subsidiary Risk:</b>	None allocated
<b>Packing Group:</b>	None allocated

**15. REGULATORY INFORMATION**

**Australian Inventory of Chemical Substances (AICS):** All components are listed on the inventory.

**Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP):** Not scheduled.

**16. OTHER INFORMATION**

This Material Safety Data Sheet has been prepared by Hodson & Associates Pty Ltd on behalf of Irwin Industrial Tool Company Pty Ltd.

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