

## Material Safety Data Sheet

### Section 1: Chemical Product Identification

Product Name: Silver Solder

Trade Name & Synonyms: Solder

Chemical Family: Silver Brazing Alloy

Formula: Proprietary

#### HMIS Hazard Index

4 – Severe  
3 – Serious  
2 – Moderate  
1 – Slight  
0 - Minimal

#### HMIS Ratings

Health – 2  
Flammability – 0  
Reactivity – 0

### Section 2: Ingredients and Hazards

Component	CAS No.	TLV mg/m <sup>3</sup>	PEL mg/m <sup>3</sup>
Silver	7440-22-4	0.10	0.10
Copper	7440-50-8	1.00	1.00
Zinc	7440-66-6	5.00	5.00
Tin	7440-31-5	2.00	2.00

### Section 3: Physical and Chemical Properties

Physical Form:

Color: Yellow/gold  
Odor: No Odor  
Specific Gravity (H<sub>2</sub>O = 1): N/A  
Melting Point: 1205°F  
Vapor Pressure @ 20C (68F): N/A  
Vapor Density (Air = 1): N/A  
Boiling Point: N/A  
Solubility in H<sub>2</sub>O: Insoluble  
Percent Volatile: N/A  
Evaporation Rate: N/A

#### **Section 4: Fire and Explosion Hazard Data**

Flash point: N/A  
Flammable Limits: N/A  
LEL: N/A  
UEL: N/A  
Extinguishing Media: CO<sub>2</sub>, Dry Chemical, Foam, Water  
Special Fire-Fighting Procedures: Firefighters should wear self-contained breathing apparatus and full protective clothing.  
Unusual Fire or Explosion Hazards: None  
Auto Ignition Temperature: None

#### **Section 5: Stability and Reactivity**

Stability: Stable  
Conditions to Avoid: Moisture, excessive heat during storage  
Incompatibility: Acids and Alkalai's  
Hazardous Decomposition or byproducts: Cadmium fumes or gas, zinc fumes  
Hazardous Polymerization: Will not occur

#### **Section 6: Health Hazard Data and First Aid Procedures**

Routes of Entry: Inhalation, eye, skin, ingestion

Inhalation: Immediately remove to fresh air. If breathing is difficult, give oxygen if a qualified operator is available. Get medical evaluation. If not breathing, give artificial respiration, preferably mouth-to-mouth. Call a physician and give supportive treatment for chills and fever.

Ingestion: Do not induce vomiting. If conscious, give soluble calcium or magnesium in any form: milk, calcium gluconate or calcium lactate solutions, if available; or milk of magnesia; otherwise give large quantities of water. Call a physician. Do not give carbonates or bicarbonates.

Skin: Promptly wash with soap and water; then flush with water until all chemical is removed. Remove contaminated clothing promptly and wash before reuse. If symptoms persist, get medical attention.

Eyes: For dust or solution in eyes, flush immediately for 15-20 minutes with large amounts of water. Seek medical evaluation of potential corneal damage.

Carcinogenicity? Not listed as a carcinogen by NTP, IARC, or OSHA

Signs and Symptoms of Exposure:

Silver: Overexposure of silver dust or fumes may cause a grayish pigmentation of the skin and can cause irritation of the skin and mucous membranes. Prolonged overexposure can lead to kidney damage.

Copper: Industrial exposure to copper fumes, dusts or mists results in metal fume fever with atrophic changes in nasal mucous membranes. Chronic poisoning results in Wilson's Disease, characterized by hepatic cirrhosis, brain damage, demyelination, renal disease and copper deposition in the cornea.

Zinc: Excessive inhalation of freshly formed zinc may produce characteristic symptoms known as metal fume fever or zinc shakes. Onset of the symptoms may be delayed 4 to 12 hours. Symptoms include: irritation of the nose, mouth and throat; coughing, stomach pain, nausea, vomiting, metallic taste, chills, fever, muscle and joint pain, thirst, bronchitis or pneumonia, and a bluish tint to the skin. These symptoms go away in 24 to 48 hours and leave no effect.

Tin: Inhalation of tin oxide may lead to benign pneumoconiosis. Certain tin salts are mild irritants to the skin and mucous membranes.

**Section 7: Precautions for Safe Handling and Use**

Steps in case material is released or spilled: Dilute and wash spillage with water. Wear rubber gloves during clean up. Avoid high temperatures. Place in closed, labeled container for disposal or recycling.

Waste Disposal: Disposal of waste product may be subject to federal, state, and local regulations. Users should review their own operations in terms of applicable federal, state and local laws and regulations, then consult with appropriate regulatory agencies before discharge or disposing of the waste material.

Precautions to be taken in Handling and Storage: Maintain at normal room temperature. Keep covered and store in a dry area.

Other precautions: Refer to ANSI Z49.1 "Safety in Cutting and Welding"

## **Section 8: Exposure Controls and Personal Protection**

Ventilation: (For fumes and gases)

Local Exhaust: Air flow to produce velocity of 100 lineal ft/min in brazing zone.

Mechanical (General): 2000 cu. ft/min/brazer

Special: Refer to ANSI Z 49.1 "Safety in Cutting and Welding" published by: The AWS, P.O. Box 351040

Protective Gloves: Heat protective rubber

Eye Protection: Safety goggles or full face shield

Respiratory Protection: In confined space, use a NIOSH approved airline respirator, hose mask, or self-contained breathing apparatus.

Other Protective Equipment: Normal clothing for torch brazing (avoid flammable fabrics); Eye bath and safety shower.

Hygienic Work Practices: Wash hands before eating, drinking and smoking. The drinking water supply is prohibited under Federal Law in the working area. Do not permit eating, drinking, or the use of tobacco products while handling.

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4-29-02

Supercedes 12-14-99