SILVER SOLDER
Brazing Alloy

1 - IDENTIFICATION
Distributor: Ormco Corporation
Address: 1717 West Collins Avenue
City, State, Zip: Orange, CA 92867
Telephone: 1-800-854-1741
24-Hour Emergency: Chemtrec 1-800-424-9300
Date Prepared: January 11, 2002

2 - COMPOSITION INFORMATION
Hazardous Ingredients

<table>
<thead>
<tr>
<th>CAS #</th>
<th>PEL</th>
<th>TLV</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>0.1 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>0.01 mg/m³</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>Tin</td>
<td>7440-31-5</td>
<td>2 mg/m³</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Zinc</td>
<td>7440-66-6</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

3 - PHYSICAL AND CHEMICAL PROPERTIES
Melting Point: 1145-1270 °F (620-690 °C)
Specific Gravity (H₂O = 1): 8.7-9.4
Vapor Pressure (mm Hg): N/D
Vapor Density (AIR = 1): N/D
Solubility in Water: Insoluble
Appearance and Odor: Odorless white to light-yellow metals in the form of wires, rods or strips.

4 - FIRE AND EXPLOSION HAZARD DATA
Flash Point (Method Used): N/A
Flammable Limits: LEL: N/D UEL: N/D
Extinguishing Media: Use dry chemical. Do not use water.
Special Fire Fighting Procedures: Wear a self-contained breathing apparatus.
Unusual Fire and Explosion Hazards: In finely-divided form, this product may ignite when exposed to flame or by reaction with incompatible materials. No unusual explosion hazards

5 - REACTIVITY DATA
Stability: Stable
Conditions to Avoid: Silver and copper can form unstable acetyldides if in contact with acetylene gas.
Incompatibility (Material to Avoid): Strong acids and bases, sulfur and organic peroxides
Hazardous Decomposition Byproducts: Heating to elevated temperatures may liberate metal/metal oxide fumes.
Hazardous Polymerization: Will not occur

6 - HEALTH HAZARD DATA
Routes of Entry:
Skin: May cause irritation, argyria, discoloration and/or dermatitis.
Eyes: May cause irritation, conjunctivitis, ulceration of the cornea and/or argyria-a discoloration of eyes, skin and mucous membranes.
Inhalation: Inhalation is not known to present a significant risk to health when appropriate protective measures are taken. Copper has been shown to cause respiratory tract irritation, fever, muscle aches, weakness and a metallic taste. Chronic silver exposure may cause argyria. Exposure to tin dust may cause respiratory tract irritation, stannosis and shortness of breath. Zinc may cause respiratory tract irritation, cough, chills, headache, nausea, shortness of breath, vomiting and fatigue.
Carcinogenicity - NTP: No
IARC Monographs: No OSHA Regulated Carcinogen: No

7 - EMERGENCY FIRST AID PROCEDURES
Skin: Remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary.
Eyes: Flush with large amounts of water for at least 15 minutes. Seek medical attention.
Inhalation: If signs and symptoms of toxicity are observed, remove subject from area, administer oxygen and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.
Ingestion: If subject is conscious, induce vomiting. If unconscious or convulsive, seek immediate medical assistance.

8 - PRECAUTIONS FOR SAFE HANDLING & USE
Steps to be taken in case material is released or spilled: If a finely divided form of product is spilled, clean up spillage so as to minimize dispersion of dust. Wet sweeping or vacuuming using HEPA filtration are recommended.
Waste Disposal Method: Dispose of in accordance with all federal, state and local regulations.
Precautions to be taken in handling and storing: Store in a cool, dry place.

9 - CONTROL MEASURES
Respiratory Protection: If an exposure level exceeds an applicable exposure standard, use a NIOSH-approved respirator having a configuration (type of facepiece, filter media, assigned protection factor, etc.) appropriate to the concentration of the contaminant(s) generated. For guidance on selection and use of respiratory protection, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA)
VENTILATION:
Local Exhaust: Use appropriate ventilation adequate to maintain concentrations of all components and their byproducts to within their respective OSHA PELs or other applicable standards.
Mechanical (General): Should be adequate.
Protective Gloves: Wear appropriate protective gloves and clothing to prevent skin injuries from the hazards of brazing and/or for prolonged or repeated contact with finely-divided forms of product. Avoid flammable fabrics.
Eye Protection: Wear eye protection adequate to prevent eye contact with finely-divided forms of product and eye injury from the hazards of brazing. Plastic-frame spectacles with side shields and filter lenses are recommended.
Work/Hygiene Practices: Handle in accordance with good personal hygiene and safety practices. These practices include avoiding unnecessary exposure.

10 - TRANSPORTATION INFORMATION
This product is not a Hazardous Substance or Dangerous Goods per USDOT/ICAO/IMO regulations.

11 - SPECIAL INFORMATION
HMIS (Hazardous Material Identification System) Rating:
H1 F0 R0
[HMIS Hazard Index: 4 – Severe Hazard; 3 – Serious Hazard; 2 – Moderate Hazard; 1 – Slight Hazard; 0 – Minimum Hazard]

Note: This MSDS was prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and is to be used only for this product. The information contained in this MSDS is, to the best of our knowledge, believed to be accurate.