1. Supplier and Manufacturer
Aufhauser Corporation
39 West Mall
Plainview NY 11803 USA
Telephone: 516-694-8696 www.brazing.com
Emergency Phone Number: 516-694-8696 or 212-246-0205
CHEMTREC 24-hour Emergency Response: 800-424-9300 or 703-527-3887
SDS Number: PhosCu 201507
Product Codes: PhosCopper alloys: 0, 2, 5, 5HP, 6, 6HP, 6D, 15
Product Use(s): Alloys for brazing and other metallurgical processes.

2. Hazards identification
Classification(s)
Acute Toxicity, Inhalation: Hazard Category 3; Carcinogenicity: not classifiable as to carcinogenicity to humans; Reproductive Toxicity: not classified; Germ Cell Mutagenicity: not classified

Label Symbol(s): Health Hazard, Exclamation Point
Label Signal Word(s): Warning
Label Hazard Statement(s)
May cause respiratory irritation. May cause an allergic skin reaction. Phosphorus is toxic and may produce poisoning if taken by mouth.

Label Precautionary Statement(s)
Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Avoid breathing dust or fumes. Use only outdoors or in a well-ventilated area. Store locked up. Wear protective gloves and eye/face protection. If skin irritation or rash occurs, get medical advice or attention. If exposed or concerned, get medical advice/attention. IF ON SKIN: Wash with plenty of water. Wash contaminated clothing before reuse. Contaminated work clothing must not be allowed out of the workplace. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a Poison Control Center or doctor if you feel unwell.
Dispose of contents and container in accordance with applicable regulations. 1-93% of the products consist of ingredient(s) of unknown acute toxicity.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>%wt.</th>
<th>Impurities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>80 - 93</td>
<td>None known</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>7723-14-04</td>
<td>&lt;0.1 - 8</td>
<td>None known</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>0 - 15</td>
<td>None known</td>
</tr>
</tbody>
</table>
4. First aid measures
   **Eye:** Flush affected areas with water for at least fifteen minutes. Remove any contact lenses. Seek medical assistance if necessary.
   **Skin:** Remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary. Launder or dry-clean clothing before reuse.
   **Ingestion:** Do NOT induce vomiting. Immediately rinse mouth and drink a cupful of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
   **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.
   **Note to Physician:** Treat symptomatically.

5. Firefighting measures
   **Fire and Explosion Hazards:** Solid metal is not flammable. Finely divided metallic dust or powder may form an explosive mixture with air. If present in a fire or explosion, may emit fumes of the constituent metals or their oxides.
   **Extinguishing Media:** Use dry chemical, foam or carbon dioxide. Do not use water.
   **Fire Fighting Instructions:** If fighting a fire in which these products are present, wear a self-contained breathing apparatus with full face piece operated in pressure-demand or other positive pressure mode. Remove containers of product from fire risk area if possible.

6. Accidental release measures
   **Methods and Materials:** If a finely-divided form of product is spilled, clean up spillage so as to minimize dispersion of dust. Either wet sweeping or vacuuming using HEPA filtration is recommended.
   **Personal Precautions:** Avoid contact with skin, eyes, and mucous membranes. Avoid inhalation of dust. Wear PPE.
   **Environmental Precautions:** Prevent spills from entering sewers or contaminating soil.

7. Handling and storage
   Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation where dust is formed. Wear PPE.
   **Work and Hygiene Practices:** To prevent ingestion following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing or protective equipment before entering eating/drinking areas
   **Storage Precautions:** Do not store in proximity to incompatible materials (see Section #10).

8. Exposure controls/personal protection
   **Ingredients – Exposure Limits**
<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLVs</th>
<th>OSHA PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>0.2 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists)</td>
<td>0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists)</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.1 mg/m3 TWA</td>
<td>0.1 mg/m3 TWA</td>
</tr>
<tr>
<td>Silver</td>
<td>0.1 mg/m3 TWA (metal)</td>
<td>0.01 mg/m3 TWA</td>
</tr>
</tbody>
</table>

   **Ingredients – Biological Limits**
<table>
<thead>
<tr>
<th>Component</th>
<th>No ACGIH BEI(s) or other biological limit(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td></td>
</tr>
<tr>
<td>Phosphorus</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td></td>
</tr>
</tbody>
</table>

   **Engineering Controls:** Use appropriate local exhaust ventilation adequate to maintain concentrations of all components and their byproducts to within their applicable standards.
   **Eye/Face Protection:** Wear eye protection adequate to prevent eye contact with finely-divided product and eye injury if the products are used with a flame. Plastic-frame spectacles with side shields and filter lenses (shade #3 / #4) are recommended.
   **Skin Protection:** Wear appropriate protective gloves and clothing to prevent skin injury if the products are used with a flame and/or for prolonged or repeated contact with finely-divided forms of product. Avoid flammable fabrics
   **Respiratory Protection:** If an exposure level to a component(s) exceeds an applicable standard, use a NIOSH-approved respirator having a configuration (face piece, filter media, assigned protection factor, etc.) effective for the concentration of the component(s) generated. For guidance on selection and use of respirators, consult American National Standard Z88.2 (ANSI, New York, NY 10036, USA).

9. Physical and chemical properties
   **Appearance:** Light-copper metals, various forms
   **Odor:** none
   **Odor threshold:** not applicable
   **pH:** not applicable
   **Melting Point:** >1190 F/645 C.
   **Freezing point:** not applicable
   **Boiling point/boiling range:** not determined
Flash Point, Evaporation Rate, Flammability Class, Lower and Upper Explosive Limit: not applicable
Vapor pressure and density: not applicable
Relative density (H2O): 7.8-10.5
Solubility (H2O): insoluble
Specific gravity: 8.94 (H2O=1)
Oil-water partition coefficient, Auto-ignition point, Decomposition Temp, Viscosity: Not Applicable.

10. Stability and reactivity

- **Reactivity:** none reasonably foreseeable
- **Stability:** stable
- **Hazardous Polymerization:** will not occur
- **Risk of Dangerous Reactions:** see "Conditions to Avoid"

**Conditions to Avoid:** Silver and copper can form unstable acetylides in contact with acetylene gas.

**Incompatible Materials:** Strong oxidizing agents. Strong acids. Strong bases. Halogens. Acid chlorides. (Including but not limited to: Acetylene; ammonia; azides; nitric acid; halogens; ethylene imine; ethylene oxide; chlorine trifluoride; sulfuric acid; peroxides; peroxymonosulfuric acid; oxalic acid; tartaric acid; 1-bromo-2-propyne; permonsulfuric acid; hydrogen sulfide; hydrazine mononitrate; hydrazoic acid; bromates, chlorates, and iodates of alkali and alkali earth metals; hydroxylamine; selenium; carbon disulfide; ammonium nitrate; hydrazoic acid; tellurium.)

**Hazardous Decomposition Products:** Heating to elevated temperatures may liberate metal/metal oxide fumes and or phosphorus pentoxide.

11. Toxicological information

This product has not been subject to toxicological testing by the supplier/manufacturer.

**Toxicological Data by components:**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 (oral)</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Phosphorus</td>
<td>&gt;15,000 mg/kg (oral/rat)</td>
<td>4,300 mg/m3 for 1 hr (rat)</td>
</tr>
<tr>
<td>Silver</td>
<td>&gt;2,000 mg/kg (oral/rat)</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Primary Routes(s) of Entry:** Ingestion; inhalation.

**Eye Hazards:** Eye contact with these products in finely-divided forms may cause irritation, conjunctivitis, ulceration of the cornea, and/or argyria, a permanent gray discoloration of the eyes, skin, mucous membranes, and respiratory tract.

**Skin Hazards:** Skin contact with these products, particularly in finely-divided forms, may cause irritation, argyria, discoloration, and/or contact dermatitis.

**Ingestion Hazards:** Ingestion of these products in finely-divided forms may cause nausea, vomiting, and gastrointestinal irritation. Phosphorus is toxic and may produce poisoning if taken by mouth.

**Inhalation Hazards:** Inhalation of toxicologically-significant quantities of the components is unlikely when the product is used in accordance with instructions and specified protective measures (see Section #8).

**Symptoms Related to Overexposure:** Pre-existing pulmonary diseases (e.g., bronchitis, asthma) may be aggravated by inhalation overexposure, particularly as fume.

**Delayed Effects from Long Term Overexposure:** Chronic overexposure by inhalation and/or ingestion may aggravate pre-existing diseases of the liver, kidneys, and gastrointestinal system.

**Carcinogenicity:** The product contains no chemicals classified as potential or demonstrated carcinogens by IARC, NTP, or OSHA.

**Germ Cell Mutagenicity:** The product contains no chemicals determined to be germ cell mutagens.

**Reproductive Effects:** The product contains no chemicals determined to be damaging to fertility of the unborn child.

**Acute Toxicity Estimates:**
- LD50 (oral): >2,000 mg/kg
- LD50 (dermal): no data available
- LC50: no data available

**Interactive Effects of Components:** no data available

12. Ecological information

No ecological data is available for the product. Available ecological data for the components is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Aquatic: EC50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>0.0076 - 0.026 mg/L/48 hrs (water flea)</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>0.0019 - 0.003 mg/L/96 hrs (fathead minnow fish)</td>
<td></td>
</tr>
<tr>
<td>Phosphorus</td>
<td>0.025 - 0.037 mg/L/48 hrs (water flea)</td>
<td>0.002 - 0.006 mg/L/96 hrs (bluegill fish)</td>
</tr>
</tbody>
</table>

**Ecotoxicity:** Alloys in massive forms present limited hazard for environment.

**Environmental effects:** Significant environmental persistence and bioaccumulation can be expected.

**Aquatic toxicity:** May cause long-lasting harmful effects to aquatic life.

**Persistence and degradability:** This product is not biodegradable.

**Bioaccumulation/Accumulation:** This product contains potentially bioaccumulating substances.

**Mobility in environmental media:** Alloys in massive forms are not mobile in environment.

**Ozone Depletion Potential:** This product contains no ingredients listed in the Annexes to the Montréal Protocol on Substances that Deplete the Ozone Layer.
13. Disposal considerations  
**Waste code**: D011 Waste Silver  
Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Consult applicable Federal, State/Provincial, and local regulations. Scrapped material should be sent for refining to recover precious metal content.

14. Transport information  
Transport is not regulated by USDOT, TDG (Canada), IATA, or IMDG.

15. Regulatory information  
**United States Regulatory Information**  
All components of this product are listed on the EPA's TSCA inventory.  
SARA Hazard Classes: Acute Health Hazard; Chronic Health Hazard  
SARA Section 313 Notification  
These products contain these ingredients in concentrations greater than 1% (for carcinogens 0.1%) regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.  
Copper (CASRN 7440-50-8)  
Phosphorus (CASRN 7723-14-0)  
Silver (CASRN 7440-22-4)  
Ingredient(s) - State Regulations  
May be regulated and listed.  
**Canadian Regulatory Information**  
All components of these products are listed on either the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).  
WHMIS Class(es) and Division(s): D1A, D2A, D2B Component(s) on Ingredients Disclosure List:  
Phosphorus (CASRN 7723-14-0)  
Copper, elemental (CASRN 7440-50-8)  
Silver, elemental (CASRN 7440-22-4)  
This product has been classified according to the hazard criteria of the CPR and this SDS contains all of the information required by the CPR.

16. Other information including information on preparation and revision of the SDS

<table>
<thead>
<tr>
<th>NFPA Ratings</th>
<th>HMIS Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health - 1</td>
<td>Health - 1</td>
</tr>
<tr>
<td>Flammability - 0</td>
<td>Flammability - 0</td>
</tr>
<tr>
<td>Reactivity - 0</td>
<td>Physical Hazard - 0</td>
</tr>
</tbody>
</table>

**PPE**: Aufhauser Corporation recommends use of protective eyewear and gloves (Personal Protection Index "B") as standard PPE. HMIS recommends that its ratings be used only in conjunction with a fully implemented HMIS program, and that specific PPE codes be created by the user, who is familiar with the actual conditions under which the product is used. We cannot anticipate every condition of the product's use, and it is the user's responsibility to evaluate the hazards pertinent to its specific operations, and to determine the specific PPE required.

**Date of Preparation**: 2015-July

**Disclaimer**

*Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).*  
**Aufhauser Corporation**