SECTION 1: Identification

1.1. Identification
Product form : Mixture
Trade name : 52AG/28CU/20PD
Product code : A00000448

1.2. Recommended use and restrictions on use
No additional information available

1.3. Supplier
Lucas-Milhaupt, Inc.
5656 South Pennsylvania Ave.
Cudahy, WI 53110 - USA
T (414)-769-6000
LM_SDSinfo@lucasmilhaupt.com - www.Lucasmilhaupt.com

1.4. Emergency telephone number
Emergency number : CHEMTREC within the USA and Canada: 1-800-424-9300
CHEMTREC outside the USA and Canada +1 701-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture
GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements
GHS US labelling
No labelling applicable

2.3. Other hazards which do not result in classification
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>(CAS-No.) 7440-22-4</td>
<td>51.5 - 52.5</td>
</tr>
<tr>
<td>Copper</td>
<td>(CAS-No.) 7440-50-8</td>
<td>27.5 - 28.5</td>
</tr>
<tr>
<td>Palladium</td>
<td>(CAS-No.) 7440-05-3</td>
<td>19.5 - 20.5</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general : Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell. Rinse mouth.

4.2. Most important symptoms and effects (acute and delayed)
No additional information available

4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.
SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
- Suitable extinguishing media: Dry powder, Water spray, Foam.
- Unsuitable extinguishing media: Water.

5.2. Specific hazards arising from the chemical
- Reactivity: The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters
- Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
- Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders
- Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
- Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
- For containment: Collect spillage.
- Methods for cleaning up: Mechanically recover the product.
- Other information: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections
- For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
- Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment.
- Hygiene measures: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
- Storage conditions: Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>IDLH (mg/m³)</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (7440-50-8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
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<tr>
<td>IDLH</td>
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<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palladium (7440-05-3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver (7440-22-4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td></td>
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<tr>
<td>OSHA</td>
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<tr>
<td>IDLH</td>
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<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.2. **Appropriate engineering controls**

Appropriate engineering controls: Ensure good ventilation of the work station.

Environmental exposure controls: Avoid release to the environment.

8.3. **Individual protection measures/Personal protective equipment**

**Hand protection:**
Protective gloves

**Eye protection:**
Safety glasses

**Skin and body protection:**
Wear suitable protective clothing

**Respiratory protection:**
In case of insufficient ventilation, wear suitable respiratory equipment

### SECTION 9: Physical and chemical properties

9.1. **Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Colour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non flammable.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive limits</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. **Other information**

No additional information available

### SECTION 10: Stability and reactivity

10.1. **Reactivity**

The product is non-reactive under normal conditions of use, storage and transport.

10.2. **Chemical stability**

Stable under normal conditions.

10.3. **Possibility of hazardous reactions**

No dangerous reactions known under normal conditions of use.
10.4. **Conditions to avoid**
None under recommended storage and handling conditions (see section 7).

10.5. **Incompatible materials**
No additional information available

10.6. **Hazardous decomposition products**
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**SECTION 11: Toxicological information**

11.1. **Information on toxicological effects**
- Acute toxicity (oral): Not classified
- Acute toxicity (dermal): Not classified
- Acute toxicity (inhalation): Not classified

**Silver (7440-22-4)**
- LD50 oral rat: > 5000 mg/kg
- LD50 dermal rat: > 2000 mg/kg
- Skin corrosion/irritation: Not classified
- Respiratory or skin sensitisation: Not classified
- Germ cell mutagenicity: Not classified
- Carcinogenicity: Not classified
- Reproductive toxicity: Not classified
- STOT-single exposure: Not classified
- STOT-repeated exposure: Not classified
- Aspiration hazard: Not classified
- Viscosity, kinematic: No data available

**SECTION 12: Ecological information**

12.1. **Toxicity**
- Ecology - general: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. Very toxic to aquatic life.

**Copper (7440-50-8)**
- LC50 fish 1: 0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
- EC50 Daphnia 1: 0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
- LC50 fish 2: < 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

**Silver (7440-22-4)**
- LC50 fish 1: 0.00155 - 0.00293 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
- EC50 Daphnia 1: 0.00024 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
- LC50 fish 2: 0.0062 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

12.2. **Persistence and degradability**
No additional information available

12.3. **Bioaccumulative potential**
No additional information available

12.4. **Mobility in soil**
No additional information available

12.5. **Other adverse effects**
No additional information available
SECTION 13: Disposal considerations

13.1. Disposal methods
Waste treatment methods

Dispose of contents/container in accordance with licensed collector’s sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT
Not applicable

Transportation of Dangerous Goods
Not applicable

Transport by sea
Not applicable

Air transport
Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Copper (7440-50-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
CERCLA RQ 5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

Palladium (7440-05-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Silver (7440-22-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
CERCLA RQ 1000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

15.2. International regulations

Copper (7440-50-8)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Palladium (7440-05-3)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Silver (7440-22-4)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper(7440-50-8)</td>
<td>U.S. - Massachusetts - Right To Know List</td>
</tr>
<tr>
<td></td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List</td>
</tr>
<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
</tr>
</tbody>
</table>
### Component

<table>
<thead>
<tr>
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<tr>
<td>Palladium(7440-05-3)</td>
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</table>
| Silver(7440-22-4)  | U.S. - Massachusetts - Right To Know List  
|                   | U.S. - New Jersey - Right to Know Hazardous Substance List  
|                   | U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
|                   | U.S. - Pennsylvania - RTK (Right to Know) List                      |

### SECTION 16: Other information

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SDS US (GHS HazCom 2012)

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).

Lucas-Milhaupt, Inc.