**SECTION 1: Identification**

1.1. Identification

- **Product form**: Mixture
- **Trade name**: 60AG/24CU/14IN/2TI
- **Product code**: A00000447

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
- **Emergency number**: 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>59 - 61</td>
</tr>
<tr>
<td>Copper</td>
<td>(CAS-No.) 7440-50-8</td>
<td>23 - 25</td>
</tr>
<tr>
<td>Indium</td>
<td>(CAS-No.) 7440-74-6</td>
<td>13 - 15</td>
</tr>
<tr>
<td>Titanium</td>
<td>(CAS-No.) 7440-32-6</td>
<td>2 - 2.5</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. Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
- **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**

| Fire hazard | Flammable solid. |
| Reactivity | The product is non-reactive under normal conditions of use, storage and transport. Flammable solid. |

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. No open flames, no sparks, and no smoking.

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. Notify authorities if product enters sewers or public waters.

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. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving 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**

Technical measures: Ground/bond container and receiving equipment.

Storage conditions: Store in a well-ventilated place. Keep cool. Protect from sunlight. Keep away from ignition sources.

### SECTION 8: Exposure controls/personal protection

8.1. **Control parameters**

<table>
<thead>
<tr>
<th>Copper (7440-50-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
</tr>
<tr>
<td>OSHA</td>
</tr>
<tr>
<td>IDLH</td>
</tr>
<tr>
<td>NIOSH</td>
</tr>
</tbody>
</table>
Indium (7440-74-6)

<table>
<thead>
<tr>
<th>Source</th>
<th>Value (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.1 mg/m³</td>
</tr>
<tr>
<td>NIOSH</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

Silver (7440-22-4)

<table>
<thead>
<tr>
<th>Source</th>
<th>Value (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.1 mg/m³ (dust and fume)</td>
</tr>
<tr>
<td>OSHA</td>
<td>0.01 mg/m³</td>
</tr>
<tr>
<td>IDLH</td>
<td>10 mg/m³ (dust)</td>
</tr>
<tr>
<td>NIOSH</td>
<td>0.01 mg/m³ (dust)</td>
</tr>
</tbody>
</table>

Titanium (7440-32-6)

Not applicable

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

- **Physical state**: Solid
- **Colour**: No data available
- **Odour**: No data available
- **Odour threshold**: No data available
- **pH**: No data available
- **Melting point**: No data available
- **Freezing point**: Not applicable
- **Boiling point**: No data available
- **Flash point**: Not applicable
- **Relative evaporation rate (butylacetate=1)**: No data available
- **Flammability (solid, gas)**: Non flammable. Flammable solid.
- **Vapour pressure**: No data available
- **Relative vapour density at 20 °C**: No data available
- **Relative density**: Not applicable
- **Solubility**: No data available
- **Log Pow**: No data available
- **Auto-ignition temperature**: Not applicable
- **Decomposition temperature**: No data available
- **Viscosity, kinematic**: Not applicable
- **Viscosity, dynamic**: Not applicable
- **Explosive limits**: Not applicable
Explosive properties : No data available
Oxidising properties : No data available

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. Flammable solid.

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). Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition. Do not allow contact with air.

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

<table>
<thead>
<tr>
<th>Indium (7440-74-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>4200 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>4200 mg/kg bodyweight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Silver (7440-22-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>STOT-repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Copper (7440-50-8)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)</td>
</tr>
</tbody>
</table>
Copper (7440-50-8)
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

Indium (7440-74-6)
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 RO 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

Titanium (7440-32-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

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

Indium (7440-74-6)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

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

Titanium (7440-32-6)
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>
<tr>
<td>Indium(7440-74-6)</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) List</td>
</tr>
<tr>
<td>Silver(7440-22-4)</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>
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<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List</td>
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<tr>
<td></td>
<td>U.S. - Pennsylvania - RTK (Right to Know) List</td>
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<td>Titanium(7440-32-6)</td>
<td>U.S. - New Jersey - Right to Know Hazardous Substance List</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

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

SDS US (GHS HazCom 2012)

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Lucas-Milhaupt, Inc.