SECTION 1: Identification

1.1. Product identifier
Product form: Mixture
Trade name: 58AG/32CU/10PD VTG
Product code: A00000450
Product group: Trade product

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

1.3. Supplier
Lucas-Milhaupt Toronto
290 Carlingview Drive
M9W 5G1 Rexdale - Canada
T +1 (416) 675-1860
LM_SDInfo@lucasmilhaupt.com - www.lucasmilhaupt.com

1.4. Emergency telephone number
Emergency number: CHEMTREC Within the USA and Canada: 1-800-424-9300

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Classification (GHS CA)
Hazardous to the aquatic environment — Acute Hazard, Category 1 H400
Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements
GHS CA labelling
Hazard pictograms (GHS CA):

Signal word (GHS CA): Warning
Hazard statements (GHS CA): H400 - Very toxic to aquatic life.
Precautionary statements (GHS CA):
P273 - Avoid release to the environment.
P391 - Collect spillage.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS CA)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Chemical name / Synonyms</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS CA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver</td>
<td>Silver, metallic / Silver metal / CI 77820 / Nanoscale silver / Nanosilver / Silver, metal / Silver, elemental / C.I. 77820</td>
<td>(CAS-No.) 7440-22-4</td>
<td>57 - 59</td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td>Copper</td>
<td>C.I. 77400 / C.I. Pigment Metal 2 / Copper, elemental / CI 77400 / Copper metal / Copper, metallic / Pigment Metal 2 / Granulated copper</td>
<td>(CAS-No.) 7440-50-8</td>
<td>31 - 33</td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td>Palladium</td>
<td>Palladium Black</td>
<td>(CAS-No.) 7440-05-3</td>
<td>8 - 12</td>
<td>Not classified</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 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.
First-aid measures general     : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment  : Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media  : Dry powder. Water spray. Foam.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media  : Water.

5.3. Specific hazards arising from the hazardous product

No additional information available

5.4. 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

No additional information available

6.2. Methods and materials 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.

6.3. Reference to other sections

For further information refer to section 8: “Exposure controls/personal protection”

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>Copper (7440-50-8)</th>
<th>ACGIH TWA (mg/m³)</th>
<th>USA - ACGIH</th>
<th>0.2 mg/m³ (fume)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA - OSHA</td>
<td>OSHA PEL (TWA)  (mg/m³)</td>
<td>0.1 mg/m³ (fume)</td>
<td>1 mg/m³ (dust and mist)</td>
</tr>
<tr>
<td>Canada (Quebec)</td>
<td>VEMP (mg/m³)</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td>OEL TWA (mg/m³)</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>British Columbia</td>
<td>OEL TWA (mg/m³)</td>
<td>1 mg/m³ (dust and mist)</td>
<td></td>
</tr>
<tr>
<td>Manitoba</td>
<td>OEL TWA (mg/m³)</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>New Brunswick</td>
<td>OEL TWA (mg/m³)</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>OEL TWA (mg/m³)</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>OEL TWA (mg/m³)</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
</tr>
</tbody>
</table>
Copper (7440-50-8)

<table>
<thead>
<tr>
<th>Location</th>
<th>STEL (mg/m³)</th>
<th>TWA (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nunavut</td>
<td>3 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>3 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>Ontario</td>
<td>0.2 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>0.2 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>0.6 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
<tr>
<td>Yukon</td>
<td>0.2 mg/m³</td>
<td>0.2 mg/m³</td>
</tr>
</tbody>
</table>

Silver (7440-22-4)

<table>
<thead>
<tr>
<th>Location</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>0.1 mg/m³</td>
<td>0.01 mg/m³</td>
</tr>
<tr>
<td>Canada (Quebec)</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Alberta</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>British Columbia</td>
<td>0.03 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Manitoba</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>New Brunswick</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Nunavut</td>
<td>0.3 mg/m³ (metal)</td>
<td></td>
</tr>
<tr>
<td>North Territories</td>
<td>0.3 mg/m³ (metal)</td>
<td></td>
</tr>
<tr>
<td>Ontario</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>0.1 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>0.3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Yukon</td>
<td>0.03 mg/m³</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

Physical state: Solid
Appearance: No data available
Colour: No data available
Odour : No data available
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Relative evaporation rate (ether=1) : No data available
Melting point : No data available
Freezing point : Not applicable
Boiling point : No data available
Flash point : Not applicable
Auto-ignition temperature : Not applicable
Decomposition temperature : No data available
Flammability (solid, gas) : Non flammable.
Vapour pressure : No data available
Vapour pressure at 50 °C : No data available
Relative density : Not applicable
Solubility : No data available
Log Pow : No data available
Explosive limits : Not applicable

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : No dangerous reactions known under normal conditions of use.
Conditions to avoid : None under recommended storage and handling conditions (see section 7).
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
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : 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
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.
Acute aquatic toxicity: Very toxic to aquatic life.
Chronic aquatic toxicity: Not classified

| Copper (7440-50-8) | EC50 96h algae (1) | 0.031 - 0.054 mg/l (Species: Pseudokirchneriella subcapitata [static]) |

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
Ozone: Not classified

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

14.1. Basic shipping description
In accordance with TDG
Transportation of Dangerous Goods
Not regulated for transport

14.2. Transport information/DOT
Department of Transport
Not regulated for transport

14.3. Air and sea transport
IMDG
Not regulated for transport

IATA
Not regulated for transport

SECTION 15: Regulatory information

15.1. National regulations
Copper (7440-50-8)
Listed on the Canadian DSL (Domestic Substances List)

Palladium (7440-05-3)
Listed on the Canadian DSL (Domestic Substances List)

Silver (7440-22-4)
Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations
Copper (7440-50-8)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

Palladium (7440-05-3)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Silver (7440-22-4)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

SECTION 16: Other information

Date of issue : 29 November 2017

Full text of H-statements:

| H400 | Very toxic to aquatic life. |

SDS Canada (GHS)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.