SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : HANDY ONE® SILVALOY® 505
Product code : A00000200

1.2. Recommended use and restrictions on use

Recommended use : Alloys for brazing/soldering and other metallurgical processes

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
Skin sensitisation, category 1B H317 - May cause an allergic skin reaction.
Carcinogenicity, Category 2 H351 - Suspected of causing cancer.
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labelling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Warning
Hazard statements (GHS US) : H317 - May cause an allergic skin reaction.
H335 - May cause respiratory irritation.
H351 - Suspected of causing cancer.
Precautionary statements (GHS US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - If on skin: Wash with plenty of water
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention.
P312 - Call a poison center/doctor if you feel unwell
P321 - Specific treatment (see supplemental first aid instruction on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P363 - Wash contaminated clothing before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
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 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>45 - 55</td>
</tr>
<tr>
<td>Zinc</td>
<td>(CAS-No.) 7440-66-6</td>
<td>25 - 35</td>
</tr>
<tr>
<td>Copper</td>
<td>(CAS-No.) 7440-50-8</td>
<td>15 - 25</td>
</tr>
<tr>
<td>Potassium fluoride</td>
<td>(CAS-No.) 7789-23-3</td>
<td>3 - 5</td>
</tr>
<tr>
<td>Potassium borate tetrahydrate</td>
<td>(CAS-No.) 12045-78-2</td>
<td>3 - 5</td>
</tr>
<tr>
<td>Nickel</td>
<td>(CAS-No.) 7440-02-0</td>
<td>1 - 2</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 physician immediately.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
First-aid measures after skin contact: Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion: Rinse mouth. Do not induce vomiting. Call a physician immediately.

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

Symptoms/effects after inhalation: May cause respiratory irritation.
Symptoms/effects after skin contact: May cause an allergic skin reaction. Burns.
Symptoms/effects after eye contact: Serious damage to eyes.
Symptoms/effects after ingestion: Burns.

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.

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. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes.

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”.

05/20/2019 EN (English) 2/8
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. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area.

Hygiene measures: Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. 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 locked up. Store in a well-ventilated place. Keep cool. Keep container tightly closed.

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><strong>Copper (7440-50-8)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>0.1 mg/m³ (fume)</td>
<td>1 mg/m³ (dust and mist)</td>
<td></td>
</tr>
<tr>
<td>IDLH</td>
<td></td>
<td>100 mg/m³ (dust, fume and mist)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td>1 mg/m³ (dust and mist)</td>
<td>0.1 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td><strong>Nickel (7440-02-0)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>1.5 mg/m³ (inhaled particulate matter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDLH</td>
<td></td>
<td>10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td>0.015 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Potassium borate tetrahydrate (12045-78-2)</strong></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><strong>Silver (7440-22-4)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>0.1 mg/m³ (dust and fume)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>0.01 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDLH</td>
<td></td>
<td>10 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td>0.01 mg/m³ (dust)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Zinc (7440-66-6)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>2 mg/m³ (as ZnO)</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.
### 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

Acids. Alkali earth metals.
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

**Potassium fluoride (7789-23-3)**

- **LD50 oral rat:** 245 mg/kg
- **ATE US (oral):** 245 mg/kg bodyweight
- **ATE US (dermal):** 300 mg/kg bodyweight
- **ATE US (gases):** 700 ppmv/4h
- **ATE US (vapours):** 3 mg/l/4h
- **ATE US (dust,mist):** 0.5 mg/l/4h

**Nickel (7440-02-0)**

- **LD50 oral rat:** > 9000 mg/kg
- **LC50 inhalation rat (mg/l):** > 10.2 mg/l (Exposure time: 1 h)

**Silver (7440-22-4)**

- **LD50 oral rat:** > 5000 mg/kg
- **LD50 dermal rat:** > 2000 mg/kg

**Zinc (7440-66-6)**

- **LD50 oral rat:** 630 mg/kg

**Skin corrosion/irritation:** Not classified

**Serious eye damage/irritation:** Not classified

**Respiratory or skin sensitisation:** May cause an allergic skin reaction.

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Suspected of causing cancer.

**Nickel (7440-02-0)**

- **IARC group:** 2B - Possibly carcinogenic to humans
- **National Toxicity Program (NTP) Status:** Reasonably anticipated to be Human Carcinogen
- **In OSHA Hazard Communication Carcinogen list:** Yes

**Reproductive toxicity:** Not classified

**STOT-single exposure:** May cause respiratory irritation.

**STOT-repeated exposure:** Not classified

**Nickel (7440-02-0)**

**STOT-repeated exposure:** Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard:** Not classified

**Viscosity, kinematic:** No data available

**Symptoms/effects after inhalation:** May cause respiratory irritation.

**Symptoms/effects after skin contact:** May cause an allergic skin reaction. Burns.

**Symptoms/effects after eye contact:** Serious damage to eyes.

**Symptoms/effects after ingestion:** Burns.

SECTION 12: Ecological information

12.1. Toxicity

**Ecology - general:** Very toxic to aquatic life.
### Persistence and degradability

No additional information available

### Bioaccumulative potential

No additional information available

### Mobility in soil

No additional information available

### Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 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 regulated

#### Transportation of Dangerous Goods

Not applicable

#### Transport by sea

Not applicable

#### Air transport

Not applicable
### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Carcinogenicity</th>
<th>Developmental toxicity</th>
<th>Reproductive toxicity male</th>
<th>Reproductive toxicity female</th>
<th>No significant risk level (NSRL)</th>
<th>Maximum allowable dose level (MADL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (7440-02-0)</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WARNING:** This product can expose you to Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

**Potassium fluoride (7789-23-3)**
- Listed on the United States TSCA (Toxic Substances Control Act) inventory

**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 |

**Nickel (7440-02-0)**
- Listed on the United States TSCA (Toxic Substances Control Act) inventory
- Subject to reporting requirements of United States SARA Section 313

| CERCLA RQ | 100 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 |

**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 |

**Zinc (7440-66-6)**
- Listed on the United States TSCA (Toxic Substances Control Act) inventory
- Subject to reporting requirements of United States SARA Section 313

| CERCLA RQ | 454 kg 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

**Potassium fluoride (7789-23-3)**
- Listed on the TCSI (Taiwan Chemical Substance Inventory)

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

**Nickel (7440-02-0)**
- Listed on the TCSI (Taiwan Chemical Substance Inventory)

**Potassium borate tetrahydrate (12045-78-2)**
- Listed on the TCSI (Taiwan Chemical Substance Inventory)

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

**Zinc (7440-66-6)**
- Listed on the TCSI (Taiwan Chemical Substance Inventory)

#### 15.3. US State regulations

**WARNING:** This product can expose you to Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.
### Component | State or local regulations
--- | ---
Copper(7440-50-8) | 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
Nickel(7440-02-0) | 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) - Special Hazardous Substances  
U.S. - Pennsylvania - RTK (Right to Know) List
Potassium fluoride(7789-23-3) | U.S. - New Jersey - Right to Know Hazardous Substance List
Potassium borate tetrahydrate(12045-78-2) |  
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
Zinc(7440-66-6) | 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

Full text of H-statements:

<table>
<thead>
<tr>
<th>H</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>H317</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer.</td>
</tr>
</tbody>
</table>

**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.