

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Trade name : SILVALOY® 452 Flux Coated  
Product code : A00000198

#### 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](mailto:LM_SDSinfo@lucasmilhaupt.com) - [www.Lucasmilhaupt.com](http://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

Reproductive toxicity, Category 2 H361 Suspected of damaging fertility or the unborn child.  
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation H335 May cause respiratory 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) : H335 - May cause respiratory irritation.  
H361 - Suspected of damaging fertility or the unborn child.

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.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
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  
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

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

| Name                           | Product identifier     | %          |
|--------------------------------|------------------------|------------|
| Silver                         | (CAS-No.) 7440-22-4    | 5.5 - 34.2 |
| Proprietary Fluoride Compound* | (CAS-No.) Trade Secret | 5 - 20     |
| Copper                         | (CAS-No.) 7440-50-8    | 2.1 - 13.8 |
| Zinc                           | (CAS-No.) 7440-66-6    | 1.5 - 11.4 |
| Tin                            | (CAS-No.) 7440-31-5    | 0.45 - 3.3 |

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

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 physician immediately. Call a doctor.
- First-aid measures after skin contact : Wash skin with plenty of water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- 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)

- Symptoms/effects after inhalation : May cause respiratory irritation.
- Symptoms/effects after eye contact : Eye irritation.

#### 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 : Water spray. Dry powder. 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 : Do not breathe dust/fume/gas/mist/vapours/spray. Only qualified personnel equipped with suitable protective equipment may intervene.

##### 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. Notify authorities if product enters sewers or public waters.

#### 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.

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### 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 : Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapours/spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately.

### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| Copper (7440-50-8)            |                                      |   |
|-------------------------------|--------------------------------------|---|
| ACGIH                         | ACGIH TWA (mg/m <sup>3</sup> )       | 0.2 mg/m <sup>3</sup> (fume)  |
| OSHA                          | OSHA PEL (TWA) (mg/m <sup>3</sup> )  | 0.1 mg/m <sup>3</sup> (fume)<br>1 mg/m <sup>3</sup> (dust and mist) |
| IDLH                          | US IDLH (mg/m <sup>3</sup> )         | 100 mg/m <sup>3</sup> (dust, fume and mist)                         |
| NIOSH                         | NIOSH REL (TWA) (mg/m <sup>3</sup> ) | 1 mg/m <sup>3</sup> (dust and mist)<br>0.1 mg/m <sup>3</sup> (fume) |
| Silver (7440-22-4)            |                                      |   |
| ACGIH                         | ACGIH TWA (mg/m <sup>3</sup> )       | 0.1 mg/m <sup>3</sup> (dust and fume)                               |
| OSHA                          | OSHA PEL (TWA) (mg/m <sup>3</sup> )  | 0.01 mg/m <sup>3</sup>  |
| IDLH                          | US IDLH (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (dust)   |
| NIOSH                         | NIOSH REL (TWA) (mg/m <sup>3</sup> ) | 0.01 mg/m <sup>3</sup> (dust)                                       |
| Tin (7440-31-5)               |                                      |   |
| ACGIH                         | ACGIH TWA (mg/m <sup>3</sup> )       | 2 mg/m <sup>3</sup>   |
| IDLH                          | US IDLH (mg/m <sup>3</sup> )         | 100 mg/m <sup>3</sup>   |
| NIOSH                         | NIOSH REL (TWA) (mg/m <sup>3</sup> ) | 2 mg/m <sup>3</sup>   |
| Zinc (7440-66-6)              |                                      |   |
| ACGIH                         | ACGIH TWA (mg/m <sup>3</sup> )       | 2 mg/m <sup>3</sup> (as ZnO)  |
| Proprietary Fluoride Compound |                                      |   |
| 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:

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[In case of inadequate ventilation] wear respiratory protection.

### 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.    |
| 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                         | : No data available |
| 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.

#### 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.

#### 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 : Not classified

| Silver (7440-22-4) |              |
|--------------------|--------------|
| LD50 oral rat      | > 5000 mg/kg |
| LD50 dermal rat    | > 2000 mg/kg |

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| <b>Tin (7440-31-5)</b>               |                      |
|--------------------------------------|----------------------|
| LD50 oral rat                        | 700 mg/kg            |
| ATE US (oral)                        | 700 mg/kg bodyweight |
| <b>Zinc (7440-66-6)</b>              |                      |
| LD50 oral rat                        | 630 mg/kg            |
| <b>Proprietary Fluoride Compound</b> |                      |
| LD50 oral rat                        | 4250 mg/kg           |
| Skin corrosion/irritation            | : Not classified     |
| Serious eye damage/irritation        | : Not classified     |
| Respiratory or skin sensitisation    | : Not classified     |
| Germ cell mutagenicity               | : Not classified     |
| Carcinogenicity                      | : Not classified     |

Reproductive toxicity : Suspected of damaging fertility or the unborn child.  
Specific target organ toxicity (single exposure) : May cause respiratory irritation.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/effects after inhalation : May cause respiratory irritation.

Symptoms/effects after eye contact : Eye irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Very toxic to aquatic life.

| <b>Copper (7440-50-8)</b> |   |
|---------------------------|---|
| 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])              |
| <b>Silver (7440-22-4)</b> |   |
| 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])       |
| <b>Zinc (7440-66-6)</b>   |   |
| LC50 fish 1               | 2.16 - 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])  |
| EC50 Daphnia 1            | 0.139 - 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])            |
| LC50 fish 2               | 0.211 - 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas [semi-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

No additional information available

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### 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

##### 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

##### Tin (7440-31-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

##### 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

##### Proprietary Fluoride Compound

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)

##### Silver (7440-22-4)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

##### Tin (7440-31-5)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

##### Zinc (7440-66-6)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

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### Proprietary Fluoride Compound

Listed on the TCSI (Taiwan Chemical Substance Inventory)

### 15.3. US State 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

#### 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

#### Tin (7440-31-5)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance 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

Full text of H-statements:

|      |  |
|------|--|
| H335 | May cause respiratory irritation.                    |
| H361 | Suspected of damaging fertility or the unborn child. |

SDS US (GHS HazCom 2012)

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