SECTION 1: Identification

1.1. Identification
Product form: Mixture
Trade name: HANDY FLO 712
Product code: A00000918

1.2. Recommended use and restrictions on use
Recommended use: Binders for metal brazing

1.3. Supplier
Lucas-Milhaupt, Inc.
5656 South Pennsylvania Ave.
Cudahy, WI 53110 - USA
T (414)-769-6000
LM_SDSinfo@lacmasmilhaupt.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
Flammable liquids, Category 4 H227 - Combustible liquid
Skin corrosion/irritation, Category 2 H315 - Causes skin irritation.
Serious eye damage/eye irritation, Category 2A H319 - Causes serious eye 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): H227 - Combustible liquid
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.

Precautionary statements (GHS US): P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 - Specific treatment (see supplemental first aid instruction on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
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
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>Petroleum distillates, hydrotreated light</td>
<td>(CAS-No.) 64742-47-8</td>
<td>25 - 30</td>
</tr>
<tr>
<td>Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-</td>
<td>(CAS-No.) 13775-53-6</td>
<td>15 - 20</td>
</tr>
<tr>
<td>Lithium chloride</td>
<td>(CAS-No.) 7447-41-8</td>
<td>10   - 13</td>
</tr>
<tr>
<td>Naphtha, petroleum, hydrotreated heavy</td>
<td>(CAS-No.) 64742-48-9</td>
<td>8.88 - 11.84</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>(CAS-No.) 7646-85-7</td>
<td>0.95 - 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: IF exposed or concerned: Get medical advice/attention. 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: If skin irritation occurs: Get medical advice/attention. Rinse skin with water/shower. Take off immediately all contaminated clothing.

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 skin contact: 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


Unsuitable extinguishing media: Water.

5.2. Specific hazards arising from the chemical

Fire hazard: Flammable liquid and vapour.

Reactivity: The product is non-reactive under normal conditions of use, storage and transport. Flammable liquid and vapour.

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. Avoid contact with skin and eyes. Only qualified personnel equipped with suitable protective equipment may intervene. Do not breathe dust/fume/gas/mist/vapours/spray. 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. 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.

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. Avoid contact with skin and eyes. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Do not breathe dust/fume/gas/mist/vapours/spray. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment.

Hygiene measures:
Wash contaminated clothing before reuse. 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

Technical measures:
Ground/bond container and receiving equipment.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)- (13775-53-6) |
| Not applicable |

| Petroleum distillates, hydrotreated light (64742-47-8) |
| Not applicable |

| Zinc chloride (7646-85-7) |
| ACGIH TWA (mg/m³) | 1 mg/m³ (fume) |
| ACGIH STEL (mg/m³) | 2 mg/m³ (fume) |
| OSHA PEL (TWA) (mg/m³) | 50 mg/m³ (fume) |
| NIOSH REL (TWA) (mg/m³) | 1 mg/m³ (fume) |
| NIOSH REL (STEL) (mg/m³) | 2 mg/m³ (fume) |

| Lithium chloride (7447-41-8) |
| Not applicable |

| Naphtha, petroleum, hydrotreated heavy (64742-48-9) |
| 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:
**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>Liquid</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>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</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>No data available</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>No data available</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>No data available</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. Flammable liquid and vapour.

### 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.

### 10.5 Incompatible materials

Oxidizing agent.

### 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

<table>
<thead>
<tr>
<th>Compound</th>
<th>Acute toxicity (oral)</th>
<th>Acute toxicity (dermal)</th>
<th>Acute toxicity (inhalation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not classified</td>
<td>Not classified</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-(13775-53-6)**

- **LD50 oral rat**: > 5 g/kg
- **LD50 dermal rabbit**: > 2100 mg/kg
- **LC50 inhalation rat (mg/l)**: 4470 μg/l (Exposure time: 4 h)
- **ATE US (gases)**: 4500 ppmv/4h
- **ATE US (vapours)**: 4.47 mg/l/4h
- **ATE US (dust, mist)**: 4.47 mg/l/4h

**Petroleum distillates, hydrotreated light (64742-47-8)**

- **LD50 oral rat**: > 5000 mg/kg
- **LD50 dermal rabbit**: > 2000 mg/kg
- **LC50 inhalation rat (mg/l)**: > 5.2 mg/l/4h
- **ATE US (vapours)**: 3 mg/l/4h

**Zinc chloride (7646-85-7)**

- **LD50 oral rat**: 1100 mg/kg
- **LC50 inhalation rat (mg/l)**: <= 1975 mg/m³ (Exposure time: 10 min)
- **ATE US (oral)**: 1100 mg/kg bodyweight

**Lithium chloride (7447-41-8)**

- **LD50 oral rat**: 526 mg/kg
- **ATE US (oral)**: 526 mg/kg bodyweight

**Naphtha, petroleum, hydrotreated heavy (64742-48-9)**

- **LD50 oral rat**: > 6000 mg/kg
- **LD50 dermal rabbit**: > 3160 mg/kg
- **LC50 inhalation rat (mg/l)**: > 8500 mg/m³ (Exposure time: 4 h)

**Skin corrosion/irritation**: Causes skin irritation.

**Serious eye damage/irritation**: Causes serious eye irritation.

**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

**Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-(13775-53-6)**

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

**Aspiration hazard**: Not classified

**Viscosity, kinematic**: No data available

**Symptoms/effects after skin contact**: Irritation

**Symptoms/effects after eye contact**: Eye irritation

### 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. Toxic to aquatic life. Toxic to aquatic life with long lasting effects. Harmful to aquatic life.
### Section 12: Ecotoxicological properties

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>BCF fish 1</th>
<th>BCF fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-(13775-53-6)</td>
<td>(no bioaccumulation)</td>
<td></td>
</tr>
<tr>
<td>Petroleum distillates, hydrotreated light (64742-47-8)</td>
<td>61 - 159</td>
<td></td>
</tr>
<tr>
<td>Zinc chloride (7646-85-7)</td>
<td>16000</td>
<td></td>
</tr>
<tr>
<td>Lithium chloride (7447-41-8)</td>
<td>(no bioaccumulation)</td>
<td></td>
</tr>
</tbody>
</table>

#### 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.

Additional information: Flammable vapours may accumulate in the container.

### 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

### Section 15: Regulatory information

#### 15.1. US Federal regulations
### 15.2. International regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-(13775-53-6)</strong></td>
<td>Listed on the TCSI (Taiwan Chemical Substance Inventory)</td>
</tr>
<tr>
<td><strong>Petroleum distillates, hydrotreated light (64742-47-8)</strong></td>
<td>Listed on the TCSI (Taiwan Chemical Substance Inventory)</td>
</tr>
<tr>
<td><strong>Zinc chloride (7646-85-7)</strong></td>
<td>Listed on the TCSI (Taiwan Chemical Substance Inventory)</td>
</tr>
<tr>
<td><strong>Lithium chloride (7447-41-8)</strong></td>
<td>Listed on the TCSI (Taiwan Chemical Substance Inventory)</td>
</tr>
<tr>
<td><strong>Naphtha, petroleum, hydrotreated heavy (64742-48-9)</strong></td>
<td>Listed on the TCSI (Taiwan Chemical Substance Inventory)</td>
</tr>
</tbody>
</table>

### 15.3. US State regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>State or local regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aluminate(3-), hexafluoro-, trisodium, (OC-6-11)-(13775-53-6)</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Naphtha, petroleum, hydrotreated heavy(64742-48-9)** | 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 |
| **Petroleum distillates, hydrotreated light(64742-47-8)** |  |
| **Zinc chloride(7646-85-7)** |  |
| **Lithium chloride(7447-41-8)** |  |

### SECTION 16: Other information

Full text of H-statements:

- **H227**  Combustible liquid
- **H315**  Causes skin irritation.
- **H319**  Causes serious eye irritation.

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SDS US (GHS HazCom 2012)

05/20/2019  EN (English)  7/8
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