

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
 Trade name : HANDY FLO 731  
 Product code : A00001135

#### 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@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

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2B	H320	Causes 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) :

H302 - Harmful if swallowed.  
 H315 - Causes skin irritation.  
 H320 - Causes eye irritation

Precautionary statements (GHS US) :

P264 - Wash hands, forearms and face thoroughly after handling.  
 P270 - Do not eat, drink or smoke when using this product.  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P301+P312 - If swallowed: Call a poison center/doctor if you feel unwell  
 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)  
 P330 - Rinse mouth.  
 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.  
 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	%
Lithium chloride	(CAS-No.) 7447-41-8	14 - 27
Zinc fluoride	(CAS-No.) 7783-49-5	0.7 - 4.5
Trisodium hexafluoroaluminate	(CAS-No.) 15096-52-3	0.7 - 4.5
Potassium fluoride	(CAS-No.) 7789-23-3	0.7 - 4.5
Zinc chloride	(CAS-No.) 7646-85-7	< 1.8
Sodium fluoride	(CAS-No.) 7681-49-4	< 1.8

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.
- 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 skin contact : Irritation. Burns.
- Symptoms/effects after eye contact : Eye irritation. 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.

#### 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. Do not breathe dust/fume/gas/mist/vapours/spray.

##### 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.
- 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 : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapours/spray.

Hygiene measures : 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 in a well-ventilated place. Keep cool. Store locked up.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Lithium chloride (7447-41-8)		
Not applicable		
Zinc fluoride (7783-49-5)		
Not applicable		
Zinc chloride (7646-85-7)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (fume)
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (fume)
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (fume)
IDLH	US IDLH (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup> (fume)
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (fume)
NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> (fume)
Potassium fluoride (7789-23-3)		
Not applicable		
Trisodium hexafluoroaluminate (15096-52-3)		
IDLH	US IDLH (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup>
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>
Sodium fluoride (7681-49-4)		
IDLH	US IDLH (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup>
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	2.5 mg/m <sup>3</sup>

### 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

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### 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	: No data available
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

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

Acute toxicity (oral)	: Oral: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ATE US (oral)	500 mg/kg bodyweight
<b>Lithium chloride (7447-41-8)</b>	
LD50 oral rat	526 mg/kg
ATE US (oral)	526 mg/kg bodyweight

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<b>Zinc chloride (7646-85-7)</b>	
LD50 oral rat	1100 mg/kg
LC50 inhalation rat (mg/l)	<= 1975 mg/m <sup>3</sup> (Exposure time: 10 min)
ATE US (oral)	1100 mg/kg bodyweight

<b>Potassium fluoride (7789-23-3)</b>	
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

<b>Trisodium hexafluoroaluminate (15096-52-3)</b>	
LD50 oral rat	> 5 g/kg
LD50 dermal rabbit	> 2000 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

<b>Sodium fluoride (7681-49-4)</b>	
LD50 oral rat	52 mg/kg
LD50 dermal rat	175 mg/kg
ATE US (oral)	52 mg/kg bodyweight
ATE US (dermal)	175 mg/kg bodyweight

Skin corrosion/irritation : Causes skin irritation.  
Serious eye damage/irritation : Causes eye irritation.  
Respiratory or skin sensitisation : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

<b>Sodium fluoride (7681-49-4)</b>	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified  
STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

<b>Trisodium hexafluoroaluminate (15096-52-3)</b>	
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. Burns.  
Symptoms/effects after eye contact : Eye irritation. Serious damage to eyes.  
Symptoms/effects after ingestion : Burns.

## 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.

<b>Potassium fluoride (7789-23-3)</b>	
LC50 fish 1	9.3 mg/l (Exposure time: 96 h - Species: Ctenopharyngodon idella)

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<b>Sodium fluoride (7681-49-4)</b>	
LC50 fish 1	> 530 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
EC50 Daphnia 1	338 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	830 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [semi-static])
EC50 Daphnia 2	98 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

<b>Lithium chloride (7447-41-8)</b>	
BCF fish 1	(no bioaccumulation)
Log Pow	-2.66

  

<b>Zinc chloride (7646-85-7)</b>	
BCF fish 1	16000

### 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

<b>Lithium chloride (7447-41-8)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

  

<b>Zinc fluoride (7783-49-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	1000 lb

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<b>Zinc chloride (7646-85-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	1000 lb
<b>Potassium fluoride (7789-23-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Trisodium hexafluoroaluminate (15096-52-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Sodium fluoride (7681-49-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	1000 lb

### 15.2. International regulations

<b>Lithium chloride (7447-41-8)</b>	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
<b>Zinc fluoride (7783-49-5)</b>	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
<b>Zinc chloride (7646-85-7)</b>	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
<b>Potassium fluoride (7789-23-3)</b>	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
<b>Trisodium hexafluoroaluminate (15096-52-3)</b>	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	
<b>Sodium fluoride (7681-49-4)</b>	
Listed on the TCSI (Taiwan Chemical Substance Inventory)	

### 15.3. US State regulations

Component	State or local regulations
Lithium chloride(7447-41-8)	
Zinc fluoride(7783-49-5)	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List
Trisodium hexafluoroaluminate(15096-52-3)	U.S. - New Jersey - Right to Know Hazardous Substance List
Potassium fluoride(7789-23-3)	U.S. - New Jersey - Right to Know Hazardous Substance List
Zinc chloride(7646-85-7)	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
Sodium fluoride(7681-49-4)	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

## SECTION 16: Other information

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Full text of H-statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H320	Causes eye irritation

SDS US (GHS HazCom 2012)

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