SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade name</td>
<td>BLACK FLUX</td>
</tr>
<tr>
<td>Product code</td>
<td>A00000211</td>
</tr>
<tr>
<td>Product group</td>
<td>Trade product</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

No additional information available

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Lucas-Milhaupt, Inc.
5656 South Pennsylvania Ave.
53110 Cudahy - 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: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

| Acute toxicity (oral), Category 4 | H302 |
| Acute toxicity (inhalation:dust,mist) Category 3 | H331 |
| Skin corrosion/irritation, Category 1B | H314 |
| Reproductive toxicity, Category 1B | H360 |

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects

Fatal if inhaled. Harmful if swallowed. Causes severe skin burns and eye damage. Suspected of damaging fertility or the unborn child. Causes serious eye irritation.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)

GHS05  GHS06  GHS08

Signal word (CLP)  : Danger

Hazardous ingredients : Potassium fluoride (K(HF2)); Boron

Hazard statements (CLP) : H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H331 - Toxic if inhaled.
H360 - May damage fertility or the unborn child.
Precautionary statements (CLP) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P353 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P305 + P351 + P338 - IF INhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor.
P308 + P313 - IF exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER or doctor.
P312 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.

2.3. Other hazards
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>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium fluoride (K(HF2))</td>
<td>(CAS-No.) 7789-29-9</td>
<td>15-35</td>
<td>Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 232-156-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 009-008-00-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boron</td>
<td>(CAS-No.) 7440-42-8</td>
<td>&gt;=1.026</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 231-151-2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Specific concentration limits:

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>Specific concentration limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium fluoride (K(HF2))</td>
<td>(CAS-No.) 7789-29-9</td>
<td>(0.1 &lt;=C &lt; 1) Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 232-156-2</td>
<td>(0.1 &lt;=C &lt; 1) Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td>(EC Index-No.) 009-008-00-9</td>
<td>(1 &lt;=C &lt; 100) Skin Corr. 1B, H314</td>
</tr>
</tbody>
</table>

Full text of 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 : Rinse skin with water/shower. Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 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 : Do not induce vomiting. Rinse mouth. Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after skin contact : Burns.
Symptoms/effects after eye contact : Serious damage to eyes. Eye irritation.
Symptoms/effects after ingestion : Burns.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.
### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

| Suitable extinguishing media | Water spray. Dry powder. Foam. |
| Unsuitable extinguishing media | Water. |

#### 5.2. Special hazards arising from the substance or mixture

| Hazardous decomposition products in case of fire | Toxic fumes may be released. |

#### 5.3. Advice for firefighters

| 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 | Only qualified personnel equipped with suitable protective equipment may intervene. 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. Notify authorities if product enters sewers or public waters. |

#### 6.3. Methods and material for containment and cleaning up

| 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 | Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Do not breathe dust/fume/gas/mist/vapours/spray. 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. Wash contaminated clothing before reuse. |

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

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

#### 7.3. Specific end use(s)

No additional information available.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Boron (7440-42-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bulgaria</strong></td>
</tr>
<tr>
<td><strong>Germany</strong></td>
</tr>
<tr>
<td><strong>Lithuania</strong></td>
</tr>
</tbody>
</table>

#### 8.2. Exposure controls

<table>
<thead>
<tr>
<th>Hand protection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective gloves</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eye protection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety glasses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin and body protection:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear suitable protective clothing</td>
</tr>
</tbody>
</table>
Respiratory protection:
[In case of inadequate ventilation] wear respiratory protection.

Environmental exposure controls:
Avoid release to the environment.

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>Appearance</td>
<td>black or brown paste.</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>Relative evaporation rate (butylacetate=1)</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>Auto-ignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition temperature</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>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</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>
<tr>
<td>Explosive limits</td>
<td>Not applicable</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
Alkali earth metals.

10.6. Hazardous decomposition products
Boron oxide, Potassium oxide, and/or fluorides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Harmful if swallowed.</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Toxic if inhaled.</td>
</tr>
</tbody>
</table>

ATE CLP (oral) 572.194 mg/kg bodyweight

Potassium fluoride (K(HF2)) (7789-29-9)

LD50 oral rat 160 mg/kg
### Boron (7440-42-8)

**LD50 oral rat**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>650 mg/kg</td>
</tr>
</tbody>
</table>

- **Skin corrosion/irritation**: Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**: Serious eye damage, category 1, implicit
- **Respiratory or skin sensitisation**: Not classified
- **Germ cell mutagenicity**: Not classified
- **Carcinogenicity**: Not classified
- **Reproductive toxicity**: May damage fertility or the unborn child.
- **STOT-single exposure**: Not classified
- **STOT-repeated exposure**: Not classified
- **Aspiration hazard**: Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

- **Ecology - general**: Before neutralisation, the product may represent a danger to aquatic organisms.
- **Acute aquatic toxicity**: Not classified
- **Chronic aquatic toxicity**: Not classified

#### 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. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

- Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

- **UN-No. (ADR)**: Not applicable
- **UN-No. (IMDG)**: UN 3266
- **UN-No. (IATA)**: UN 3266
- **UN-No. (ADN)**: Not applicable
- **UN-No. (RID)**: Not applicable

#### 14.2. UN proper shipping name

- **Proper Shipping Name (ADR)**: Not applicable
- **Proper Shipping Name (IMDG)**: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.
- **Proper Shipping Name (IATA)**: Corrosive liquid, basic, inorganic, n.o.s.
- **Proper Shipping Name (ADN)**: Not applicable
- **Proper Shipping Name (RID)**: Not applicable

- **Transport document description (IMDG)**: UN 3266 CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., 8, III
- **Transport document description (IATA)**: UN 3266 Corrosive liquid, basic, inorganic, n.o.s., 8, III

#### 14.3. Transport hazard class(es)

- **ADR**: Not applicable
- **IMDG**
  - **Transport hazard class(es) (IMDG)**: 8
  - **Danger labels (IMDG)**: 8
IATA
Transport hazard class(es) (IATA) : 8
Hazard labels (IATA) : 8

ADN
Transport hazard class(es) (ADN) : Not applicable

RID
Transport hazard class(es) (RID) : Not applicable

14.4. Packing group
Packing group (ADR) : Not applicable
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport
Not applicable

Transport by sea
Special provisions (IMDG) : 223, 274
Packing instructions (IMDG) : P001, LP01
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T7
Tank special provisions (IMDG) : TP1, TP28
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW2
Segregation (IMDG) : SG35
Properties and observations (IMDG) : Reacts violently with acids. Causes burns to skin, eyes and mucous membranes.

Air transport
PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y841
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 852
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 856
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3, A803
ERG code (IATA) : 8L

Inland waterway transport
Not applicable

Rail transport
Not applicable
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

15.1.2. National regulations

**Germany**
Reference to AwSV: Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV, Annex 1)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

**Netherlands**
SZW-lijst van kankerverwekkende stoffen: Potassium fluoride (K(HF2)) is listed
SZW-lijst van mutagene stoffen: Potassium fluoride (K(HF2)) is listed
NIET-limitatieve lijst van voor de voortplanting gifige stoffen – Borstvoeding: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting gifige stoffen – Vruchtbaarheid: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting gifige stoffen – Ontwikkeling: None of the components are listed

**Denmark**
Danish National Regulations: Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product
The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

**Full text of H- and EUH-statements:**

| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H360 | May damage fertility or the unborn child. |