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

1.1. Product identifier
- Product form: Substance
- Substance name: Potassium Fluoride
- CAS No: 7789-23-3
- Product code: LC19090
- Formula: KF
- Synonyms: Kaliumfluorid
- BIG no: 10387

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: For laboratory and manufacturing use only.

1.3. Details of the supplier of the safety data sheet
LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number
Emergency number: CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
- Acute Tox. 3 (Oral) H301

2.2. Label elements
- Hazard pictograms (GHS-US): GHS06
- Signal word (GHS-US): Danger
- Hazard statements (GHS-US): H301 - Toxic if swallowed
- Precautionary statements (GHS-US): P264 - Wash exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
- P303 - If swallowed, rinse mouth
- P405 - Store locked up
- P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
- Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Fluoride (Main constituent)</td>
<td>(CAS No) 7789-23-3</td>
<td>100</td>
<td>Acute Tox. 3 (Oral), H301</td>
</tr>
</tbody>
</table>
Potassium Fluoride
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Full text of H-Phrases: see section 16

3.2. Mixture
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove the victim into fresh air. Immediately consult a doctor/medical service. Doctor: administration of corticoid spray.

First-aid measures after skin contact: Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Take victim to a doctor if irritation persists.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Rinse with water. Take victim to an ophthalmologist if irritation persists.


4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after skin contact: FOLLOWING SYMPTOMS MAY APPEAR LATER: Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact: Irritation of the eye tissue. Inflammation/damage of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue.


4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media: EXTINGUISHING MEDIA FOR SURROUNDING FIRES: All extinguishing media allowed.

Unsuitable extinguishing media: No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture
Fire hazard: DIRECT FIRE HAZARD. Non combustible.

Explosion hazard: DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.

Reactivity: On heating/burning: release of toxic and corrosive gases/vapours. Reacts with (some) acids: release of toxic and corrosive gases/vapours (hydrofluoric acid).

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel


Measures in case of dust release: In case of dust production: keep upwind. In case of dust production: consider evacuation. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Take account of toxic/corrosive precipitation water. If reacting: dilute toxic gas/vapour with water spray.

Methods for cleaning up: Stop dust cloud by covering with sand/earth or powdered limestone. Carefully collect the spill/ leftovers. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed: Pulverization rapidly increases toxic concentration.

Precautions for safe handling: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources: KEEP SUBSTANCE AWAY FROM: heat sources.

Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: (strong) acids.

Storage area: Store in a dry area. Keep container in a well-ventilated place. Keep locked up. May be stored under inert gas. Meet the legal requirements.

Special rules on packaging: SPECIAL REQUIREMENTS: closing, watertight, dry, clean, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials: SUITABLE MATERIAL: steel, aluminium, synthetic material, polyethylene, paper. MATERIAL TO AVOID: glass, stoneware/porcelain.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Material</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Fluoride (7789-23-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA ACGIH</td>
<td>2.5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA OSHA</td>
<td></td>
<td>2.5 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Materials for protective clothing: GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC. rubber.

Hand protection: Gloves.


SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid
Molecular mass: 58.10 g/mol
Colour: Off-white to white.
Odour: Odourless.
Odour threshold: No data available
pH: 7 - 8 (6 %)
pH solution: 6 %
Relative evaporation rate (butylacetate=1): No data available
Melting point: 858 °C
Freezing point: No data available
Boiling point: 1505 °C
Flash point: Not applicable
Self ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapour pressure: No data available
Relative vapour density at 20 °C: No data available
Relative density: 2.5
Density: 2480 kg/m³
Water: 92 g/100ml
Log Pow: No data available
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: No data available

9.2. Other information

VOC content: Not applicable
Other properties: Hygroscopic.

SECTION 10: Stability and reactivity

10.1. Reactivity
On heating/burning: release of toxic and corrosive gases/vapours. Reacts with (some) acids: release of toxic and corrosive gases/vapours (hydrofluoric acid).

10.2. Chemical stability
Hygroscopic.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid
No additional information available

10.5. Incompatible materials
No additional information available
10.6. Hazardous decomposition products
No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Toxic if swallowed.

<table>
<thead>
<tr>
<th>Potassium Fluoride (7789-23-3)</th>
<th>LD50 oral rat</th>
<th>245 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
<td>pH: 7 - 8 (6 %)</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</td>
<td>pH: 7 - 8 (6 %)</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Not classified</td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Not classified</td>
<td></td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified


Symptoms/injuries after skin contact: FOLLWING SYMPTOMS MAY APPEAR LATER: Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact: Irritation of the eye tissue. Inflammation/damage of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Corrosion of the eye tissue.


Likely routes of exposure: Skin and eyes contact; Inhalation

SECTION 12: Ecological information

12.1. Toxicity

Ecology - air: TA-Luft Klasse 5.2.2/III.

Ecology - water: Mild water pollutant (surface water). Maximum concentration in drinking water: 1.5 mg/l (fluoride) (Directive 98/83/EC). Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). Insufficient data available on ecotoxicity.

<table>
<thead>
<tr>
<th>Potassium Fluoride (7789-23-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fishes 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Potassium Fluoride (7789-23-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
</tr>
<tr>
<td>ThOD</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
</tr>
</tbody>
</table>

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Potassium Fluoride (7789-23-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bioaccumulative potential</td>
</tr>
</tbody>
</table>
**Potassium Fluoride**

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**12.4. Mobility in soil**

No additional information available

**12.5. Other adverse effects**

No additional information available

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

Waste disposal recommendations: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Detoxicate. Precipitate/make insoluble. Remove to an authorized dump (Class I). Do not discharge into drains or the environment.

Additional information: LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

**SECTION 14: Transport information**

In accordance with DOT

Transport document description: UN1812 Potassium fluoride, solid, 6.1, III

UN-No.(DOT): 1812

DOT NA no.: UN1812

DOT Proper Shipping Name: Potassium fluoride, solid


Hazard labels (DOT): 6.1 - Poison inhalation hazard

Packing group (DOT): III - Minor Danger

DOT Special Provisions (49 CFR 172.102): IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).

IP3 - Flexible IBCs must be silt-proof and water-resistant or must be fitted with a silt-proof and water-resistant liner.

T1 - 1.5 178.274(d)(2) Normal............. 178.275(d)(2)

TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx): 153

DOT Packaging Non Bulk (49 CFR 173.xxx): 213

DOT Packaging Bulk (49 CFR 173.xxx): 240

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27): 100 kg

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 200 kg

DOT Vessel Stowage Location: A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other: 52 - Stow “separated from” acids
Additional information
Other information : No supplementary information available.
State during transport (ADR-RID) : as solid.

ADR
Transport document description : UN 1812 Potassium fluoride, solid, 6.1, III, (E)
Packing group (ADR) : III
Class (ADR) : 6.1 - Toxic substances
Hazard identification number (Kemler No.) : 60
Classification code (ADR) : T5
Danger labels (ADR) : 6.1 - Toxic substances

Orange plates : 

Tunnel restriction code : E

Transport by sea
UN-No. (IMDG) : 1812
Class (IMDG) : 6.1 - Toxic substances
EmS-No. (1) : F-A
EmS-No. (2) : S-A

Air transport
UN-No.(IATA) : 1812
Class (IATA) : 6 -
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information
15.1. US Federal regulations
Potassium Fluoride (7789-23-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
Potassium Fluoride (7789-23-3)
Listed on the Canadian DSL (Domestic Sustances List) inventory.
WHMIS Classification | Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects

EU-Regulations
No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Acute Tox. 3 (Inhalation) H331
Acute Tox. 3 (Dermal) H311
Acute Tox. 3 (Oral) H301
Full text of H-phrases: see section 16

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Classification according to Directive 67/548/EEC or 1999/45/EC
T; R23/24/25
Full text of R-phrases: see section 16

15.2.2. National regulations

Potassium Fluoride (7789-23-3)
Listed on the Canadian Ingredient Disclosure List

15.3. US State regulations
No additional information available

SECTION 16: Other information

Full text of H-phrases: see section 16:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Oral)</th>
<th>Acute toxicity (oral), Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
</tbody>
</table>

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.

HMIS III Rating
Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 0 Minimal Hazard
Physical : 1 Slight Hazard
Personal Protection : E

SDS US (GHS HazCom 2012)

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