

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

GHS-US classification

Acute Tox. 3 (Oral) H301

2.2. Label elements

GHS-US labelling

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
P330 - 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

Name	Product identifier	%	GHS-US classification
Potassium Fluoride (Main constituent)	(CAS No) 7789-23-3	100	Acute Tox. 3 (Oral), H301

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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 general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
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.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital.

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

Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties.
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.
Symptoms/injuries after ingestion	: Nausea. Vomiting. Diarrhoea. Feeling of weakness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Central nervous system depression. Cardiac and blood circulation effects.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Slowing ossification. Pain in the joints. Affection/discolouration of the teeth. Affection of the nasal septum. Possible inflammation of the respiratory tract. Loss of appetite. Feeling of weakness.

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.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
- 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

Potassium Fluoride (7789-23-3)		
USA ACGIH	ACGIH TWA (mg/m ³)	2.5 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2.5 mg/m ³

8.2. Exposure controls

- Materials for protective clothing : GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC. rubber.
- Hand protection : Gloves.
- Eye protection : Face shield. In case of dust production: protective goggles.

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Skin and body protection	: Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.
Respiratory protection	: Dust production: dust mask with filter type P3. High vapour/gas concentration: self-contained respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder. Grains.
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/m ³
Solubility	: Soluble in water. Soluble in ammonia. Soluble in hydrogenfluoride. 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

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10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Toxic if swallowed.

Potassium Fluoride (lf)7789-23-3	
LD50 oral rat	245 mg/kg
Skin corrosion/irritation	: Not classified pH: 7 - 8 (6 %)
Serious eye damage/irritation	: Not classified pH: 7 - 8 (6 %)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties.
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.
Symptoms/injuries after ingestion	: Nausea. Vomiting. Diarrhoea. Feeling of weakness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Central nervous system depression. Cardiac and blood circulation effects.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Slowing ossification. Pain in the joints. Affection/discolouration of the teeth. Affection of the nasal septum. Possible inflammation of the respiratory tract. Loss of appetite. Feeling of weakness.
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.

Potassium Fluoride (7789-23-3)	
LC50 fishes 1	100 - 1000 mg/l (96 h; Pisces)
EC50 Daphnia 1	100 - 1000 mg/l (48 h; Daphnia magna)

12.2. Persistence and degradability

Potassium Fluoride (7789-23-3)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Potassium Fluoride (7789-23-3)	
Bioaccumulative potential	No bioaccumulation data available.

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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
Department of Transportation (DOT) Hazard Classes : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
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 sift-proof and water-resistant or must be fitted with a sift-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

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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 Substances List) inventory.

WHMIS Classification	Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
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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:

Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
H301	Toxic if swallowed

NFPA health hazard

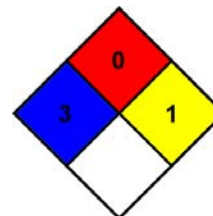
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

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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