Potassium Fluoride

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 01/13/2014 Revision date: 01/31/2018 Supersedes: 01/31/2018 Version: 1.1

SECTION 1: Identification

1.1. Identification

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

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	For laboratory and manufacturing use only.
Recommended use	:	Laboratory chemicals
Restrictions on use	:	Not for food, drug or household use

1.3. Supplier

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

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 or +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 3	H301	Toxic if swallowed

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

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 which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

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

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

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 labored 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 with water. Remove contact lenses, if present and easy to do. Continue rinsing. 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 (acute and delayed)

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties.

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

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

Symptoms/effects 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. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

5.2. Specific hazards arising from the chemical

Fire hazard : DIRECT FIRE HAZARD. Non combustible.

5.3. Special protective equipment and precautions for fire-fighters

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.

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. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.
Methods for cleaning up	:	Stop dust cloud by covering with sand/earth or powdered limestone. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. 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	:	Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. 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. Keep container tightly closed.
Hygiene measures	:	Observe strict hygiene.

7.2. Conditions for safe storage, including any incompatibilities

Heat-ignition	:	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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Potassium Fluoride (7789-23-3)		
ACGIH	ACGIH TWA (mg/m³)	2.5 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	2.5 mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses. Dust production: dust mask with filter type P3.



Materials for protective clothing:

GIVE GOOD RESISTANCE: nitrile rubber. butyl rubber. neoprene. PVC. rubber

Hand protection:

Protective gloves against chemicals (EN374)

Eye protection:

Face shield. In case of dust production: protective goggles

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 dust production: self-contained breathing apparatus

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystalline solid. Crystalline powder. Grains.
	:	Off-white to white
	:	Odorless
Odor threshold	:	No data available
pH	:	7 - 8 (6 %)
Melting point	:	846 °C (1013 hPa)
Freezing point	:	No data available
Boiling point	:	1505 °C (1013 hPa)
Flash point	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	Not applicable (solid)
Relative vapor density at 20 °C	:	Not applicable
Relative density	:	2.5 (22 °C)
Specific gravity / density	:	2480 kg/m³
Molecular mass	:	58.1 g/mol
Solubility	:	Soluble in water. Soluble in ammonia. Soluble in hydrogenfluoride. Water: 92 g/100ml (18 °C)
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
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

VOC content : Not applicable (inorganic)

Other properties : Hygroscopic.

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

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

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Skin and eye contact; Inhalation

Acute toxicity : Not classified

Potassium Fluoride (7789-23-3)	
LD50 oral rat	245 mg/kg
LD50 dermal rat	> 2000 mg/kg body weight (EPA OPPTS 870.1200: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LC50 inhalation rat (mg/l)	1 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Read-across, Inhalation (dust), 14 day(s))
ATE US (oral)	245 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 7 - 8 (6 %)

Serious eye damage/irritation : Not classified
pH: 7 - 8 (6 %)

Respiratory or skin sensitization : 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

Potential Adverse human health effects and symptoms : Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Caution! Substance is absorbed through the skin.

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties.

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

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

Symptoms/effects 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.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Slightly harmful to crustacea. Slightly harmful to fishes. Slightly harmful to algae. Slightly harmful to bacteria.

Potassium Fluoride (7789-23-3)	
LC50 fish 1	107.5 ppm (EPA 600/3-75/009, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Weight of evidence, Fluorine ion)
EC50 Daphnia 1	153 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value, Fluorine ion)

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Potassium Fluoride (7789-23-3)	
BCF fish 1	53 - 58 (Pisces, Fresh water, Experimental value, Fresh weight)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Potassium Fluoride (7789-23-3)	
Surface tension	Not applicable (solid)
Ecology - soil	Low potential for mobility in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Do not discharge into drains or the environment. 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. Remove to an authorized dump (Class I). Detoxicate. Precipitate/make insoluble.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

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

UN-No.(DOT) : UN1812

Proper Shipping Name (DOT) : Potassium fluoride, solid

Transport hazard class(es) (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT)	:	6.1 - Poison



DOT Packaging Non Bulk (49 CFR 173.xxx)	:	213
DOT Packaging Bulk (49 CFR 173.xxx)	:	240
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 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
Other information	:	No supplementary information available.

Transport by sea

Transport document description (IMDG)	:	UN 1812 potassium fluoride, solid, 6.1, III
UN-No. (IMDG)	:	1812
Proper Shipping Name (IMDG)	:	potassium fluoride, solid
Class (IMDG)	:	6.1 - Toxic substances
Packing group (IMDG)	:	III - substances presenting low danger
EmS-No. (1)	:	F-A
EmS-No. (2)	:	S-A

Air transport

Transport document description (IATA)	:	UN 1812 Potassium fluoride, solid, 6.1, III
UN-No. (IATA)	:	1812
Proper Shipping Name (IATA)	:	Potassium fluoride, solid
Class (IATA)	:	6.1 - Toxic Substances
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	
SARA Section 311/312 Hazard Classes	Health hazard - Acute toxicity (any route of exposure)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Potassium Fluoride (7789-23-3)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

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

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 01/31/2018

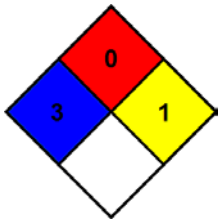
Full text of H-phrases: see section 16:

H301	Toxic if swallowed

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : E

E - Safety glasses, Gloves, Dust respirator

SDS US LabChem

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and LabChem Inc assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his application.