

## 1 Identification

- **Product identifier**
- **Trade name:** potassium fluoride
- **Article number:** 121976
- **CAS Number:**  
7789-23-3
- **EC number:**  
232-151-5
- **Index number:**  
009-005-00-2
- **Application of the substance / the mixture** Laboratory chemical
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
AppliChem GmbH  
Ottoweg 4  
D-64291 Darmstadt
- **Information department:** Dept. Compliance
- **Emergency telephone number:** +49(0)6151 93570 (Inside normal business hours)

Tel.: +49 (0)6151 93570  
 Fax.: +49 (0)6151 935711  
 msds@applichem.com

## 2 Hazard(s) identification

- **Classification of the substance or mixture**  
 Acute Tox. 3 H301 Toxic if swallowed.  
 Acute Tox. 3 H311 Toxic in contact with skin.  
 Acute Tox. 3 H331 Toxic if inhaled.  
 Eye Dam. 1 H318 Causes serious eye damage.

- **Label elements**
- **GHS label elements**  
 The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05 GHS06

- **Signal word** Danger
- **Hazard statements**  
 H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.  
 H318 Causes serious eye damage.
- **Precautionary statements**  
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
 P264 Wash 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+P310 If swallowed: Immediately call a poison center/doctor.  
 P321 Specific treatment (see on this label).  
 P330 Rinse mouth.  
 P302+P352 If on skin: Wash with plenty of water.

(Contd. on page 2)

**Trade name: potassium fluoride**

(Contd. of page 1)

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P311 Call a poison center/doctor.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 Call a poison center/doctor if you feel unwell.  
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **Classification system:**

• **NFPA ratings (scale 0 - 4)**



Health = 3  
Fire = 0  
Reactivity = 0

• **HMIS-ratings (scale 0 - 4)**



Health = \*3  
Fire = 0  
Reactivity = 0

• **Other hazards**

• **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
7789-23-3 potassium fluoride
- **Identification number(s)**
- **EC number:** 232-151-5
- **Index number:** 009-005-00-2

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Personal protection for the First Aider.  
Immediately remove any clothing soiled by the product.  
Position and transport stably on side.  
Take affected persons out of danger area and lay down.  
Involve doctor immediately.
- **After inhalation:**  
Supply fresh air.  
Call a doctor immediately.
- **After skin contact:**  
Call a doctor immediately.  
Immediately rinse with water.  
Rub in Ca-gluconate solution or Ca-gluconate gel immediately.
- **After eye contact:**  
Rinse opened eye for several minutes under running water.  
Protect unharmed eye.  
Call a doctor immediately.
- **After swallowing:**  
make victim drink water (maximum of 2 drinking glasses)

(Contd. on page 3)

**Trade name: potassium fluoride**

(Contd. of page 2)

Call a doctor immediately.

• **Information for doctor:**

• **Most important symptoms and effects, both acute and delayed**

No further relevant information available.

• **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

\* **5 Fire-fighting measures**

• **Extinguishing media**

• **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

• **For safety reasons unsuitable extinguishing agents:** Water with full jet

• **Special hazards arising from the substance or mixture**

Non-combustible.

In case of fire, the following can be released:

Hydrogen fluoride (HF)

• **Advice for firefighters**

• **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

• **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Cool endangered receptacles with water spray.

\* **6 Accidental release measures**

• **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Avoid substance contact.

• **Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

• **Methods and material for containment and cleaning up:**

Pick up mechanically.

Avoid generation of dusts.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Clean up affected area.

• **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

• **Protective Action Criteria for Chemicals**

• **PAC-1:** 23 mg/m<sup>3</sup>

• **PAC-2:** 250 mg/m<sup>3</sup>

• **PAC-3:** 1,500 mg/m<sup>3</sup>

\* **7 Handling and storage**

• **Handling:**

• **Precautions for safe handling**

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Any deposit of dust which cannot be avoided must be regularly removed.

(Contd. on page 4)

**Trade name: potassium fluoride**

(Contd. of page 3)

- **Information about protection against explosions and fires:**  
The product is not flammable.  
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store only in the original receptacle.  
The product is hygroscopic.  
Protect from moisture and water.  
Keep receptacles tightly sealed.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Open receptacle only under localized extractor facilities.  
Store under lock and key and with access restricted to technical experts or their assistants only.
- **Recommended storage temperature:** +15 - +25°C
- **Storage class:** 6.1 D
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

### • Components with limit values that require monitoring at the workplace:

#### 7789-23-3 potassium fluoride

PEL	Long-term value: 2.5 mg/m <sup>3</sup> as F
REL	Long-term value: 2.5 mg/m <sup>3</sup> as F
TLV	Long-term value: 2.5 mg/m <sup>3</sup> as F, BEI

### • Ingredients with biological limit values:

#### 7789-23-3 potassium fluoride

BEI	2 mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific)
	3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific)

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Store protective clothing separately.  
Vacuum clean contaminated clothing. Do not blow or brush off contamination.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
Required when dusts are generated.  
Filter P3

(Contd. on page 5)

**Trade name: potassium fluoride**

(Contd. of page 4)

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**

Recommended thickness of the material:  $\geq 0.6$  mm

Natural rubber, NR

Value for the permeation: Level  $\geq 480$  min

· **Eye protection:** Gauze goggles

· **Body protection:** Use protective suit.

· **Limitation and supervision of exposure into the environment**

In accordance with the local environment and safety guidelines.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Solid
Color:	Colorless
Odor:	Odorless
Odor threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range:	846 °C (1,554.8 °F)
Boiling point/Boiling range:	1,505 °C (2,741 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 2.48 g/cm<sup>3</sup> (20.696 lbs/gal)

Bulk density:	400 kg/m <sup>3</sup>
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.

(Contd. on page 6)

Trade name: potassium fluoride

(Contd. of page 5)

- **Solubility in / Miscibility with Water at 18 °C (64.4 °F):** 923 g/l
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not applicable.
  - Kinematic:** Not applicable.
- **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No dangerous reactions known.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Contact with acids releases toxic gases.
- **Conditions to avoid**  
When temperature is raised up:  
Danger of bursting.
- **Incompatible materials:**  
A risk of explosion and/or of toxic gas formation exists with the following substances:  
strong acids  
glass, quartzes/silicate ceramics
- **Hazardous decomposition products:**  
In the event of fire: See chapter 5  
Hydrogen fluoride

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Components	Type	Value	Species
Oral	LD50	223 mg/kg (rat)	
Dermal	LD50	>2,000 mg/kg (rat)	
Inhalative	LC50	>2.3 mg/l (fish)	
	LC50/4 h	1 mg/l (rat)	

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

- **Subacute to chronic toxicity:**

Oral NOAEL 25 mg/kg (rat)

- **Additional toxicological information:**

- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** 3
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

US

(Contd. on page 7)

Trade name: potassium fluoride

(Contd. of page 6)

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:**


· Type of test	Effective concentration	Method	Assessment
EC50	270 mg/l (daphnia magna)		
EC50/96 h	43 mg/l (Algae)		
	26 mg/l (fish)		
LC50/96 h	1.08 mg/l (fish)		
NOEC (21 d)	4 mg/l (fish)		

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Assessment by list): slightly hazardous for water  
Do not allow to enter waters, waste water, or soil.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Chemicals must be disposed of in compliance with the respective national regulations.  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:**  
Disposal must be made according to official regulations.  
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

## 14 Transport information



· <b>UN-Number</b>	
· <b>DOT, ADR, IMDG, IATA</b>	UN1812
· <b>UN proper shipping name</b>	
· <b>DOT, ADR</b>	Potassium fluoride, solid
· <b>IMDG, IATA</b>	POTASSIUM FLUORIDE, SOLID
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	6.1 Toxic substances

(Contd. on page 8)

US

Trade name: potassium fluoride

(Contd. of page 7)

· Label	6.1
· ADR	
	
· Class	6.1 (T5) Toxic substances
· Label	6.1
· IMDG, IATA	
	
· Class	6.1 Toxic substances
· Label	6.1
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Toxic substances
· Danger code (Kemler):	60
· EMS Number:	F-A,S-A
· Stowage Category	A
· Segregation Code	SG35 Stow "separated from" acids.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 1812 POTASSIUM FLUORIDE, SOLID, 6.1, III

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): Substance is listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.
- Chemicals known to cause reproductive toxicity for males: Substance is not listed.
- Chemicals known to cause developmental toxicity: Substance is not listed.

(Contd. on page 9)



**Trade name: potassium fluoride**

(Contd. of page 8)

- **Carcinogenicity categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH)** A4
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05 GHS06

- **Signal word** Danger
- **Hazard statements**  
H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.  
H318 Causes serious eye damage.
- **Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash 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+P310 If swallowed: Immediately call a poison center/doctor.  
P321 Specific treatment (see on this label).  
P330 Rinse mouth.  
P302+P352 If on skin: Wash with plenty of water.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P311 Call a poison center/doctor.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 Call a poison center/doctor if you feel unwell.  
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Dept. Compliance
- **Date of preparation / last revision** 07/14/2018 / 3
- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health

(Contd. on page 10)

Trade name: potassium fluoride

TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
BEL: Biological Exposure Limit  
Acute Tox. 3: Acute toxicity – Category 3  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1

• \* **Data compared to the previous version altered.**

(Contd. of page 9)