

# Potassium Fluorosilicate

## Potassium Fluorosilicate

### Material Safety Data Sheet

**Chemical:** Potassium Fluorosilicate

NFPA: H=3 F=0 I=0 S=None

HMIS: H=3 F=0 R=0 PPE= Supplied by user;  
dependent on conditions

**MSDS Number:** KFSI-1103

**Not valid three years after effective date or after issuance of superseding MSDS, whichever is earlier.** French or Spanish translations of this MSDS may be available.

Material Safety Data Sheets contain country specific regulatory information.

## 1. Company and Product Identification

**1.1 Product Name:** Potassium fluorosilicate

**Chemical Name:** Potassium fluorosilicate

**Synonyms:** Potassium silicofluoride, Potassium hexafluorosilicate

**Chemical Formula:**  $K_2SiF_6$

**Molecular Weight:** 220

**CAS Number:** 16871-90-2

**EINECS Number:** unknown

**Grade/Trade Names:** None

**1.2 Recommended Uses:** Contact supplier

### 1.4 Emergency Telephone Numbers

**Emergencies (USA):** 1-800-424-9300 (CHEMTREC®)

**Transportation Emergencies (INTERNATIONAL/MARITIME):** 1-703-527-3887 (CHEMTREC®)

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## 2. Composition/Information on Ingredients

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Potassium Fluorosilicate	$K_2SiF_6$	98.0 min.	16871-90-2

## 3. Hazards Identification

**Emergency Overview:** Seek medical attention in all cases

**3.1 Route of Entry:** Inhalation: Yes Skin: Yes Ingestion: Yes

**3.2 Potential Effects of exposure:**

- Repeated or prolonged exposure to excessive concentrations may cause fluoride poisoning or fluorosis.
- Fluoride poisoning symptoms include weakness, tremors, convulsions, collapse, low blood calcium levels and coma.
- Fluorosis symptoms include weight loss, brittleness of bones, anemia, weakness, stiffness of joints, mottling of tooth enamel and osteosclerosis

**Inhalation:** Irritation to the nose, throat, mucous membranes and lungs; symptoms include coughing, difficult breathing, thirst and loss of consciousness.

**Eyes:** Severe irritation, redness and pain

**Skin contact:** Severe irritation, redness and pain

**Ingestion:**

- Gastrointestinal irritation with nausea, vomiting and diarrhea.
- Central nervous system depression, convulsions and kidney damage may occur.

**Carcinogenicity:** See section 11.3

## 4. First-Aid Measures

**General Recommendations:**

**4.1 Inhalation:**

- Remove to fresh air.
- If breathing has stopped, give artificial respiration.
- Get medical attention immediately.

**Eyes:**

- Flush eyes with running water for 15 minutes, while keeping the eyelids wide open.
- Seek medical attention immediately.

**Skin:**

- Remove contaminated shoes, socks and clothing; wash the affected skin with soap and water for 15 minutes.
- Seek medical attention for irritation or burns.

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**Ingestion:** Seek medical attention immediately.

**If the subject is completely conscious:**

- Give subject large quantities of water to drink.
- Do not induce vomiting

**If the subject is unconscious:**

- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON
- Classical resuscitation measures.

**4.2 Medical Treatment/Notes to Physician:** None

## 5. Fire-Fighting Measures

**5.1 Flash point:** Not applicable

**5.2 Auto-ignition Temperature:** Not applicable

**5.3 Flammability Limits:** Not applicable

**5.4 Unusual Fire and Explosion Hazards:** May emit vapors of hydrogen fluoride or silicon tetrafluoride if heated to decomposition

**5.5 Extinguishing Methods**

**Common:** Use extinguishing media suitable for surrounding materials.

**Inappropriate extinguishing means:** None

**5.6 Fire Fighting Procedures**

**Specific hazards:** May produce dangerous fumes if involved in fire.

**Protective measures in case of intervention:**

- Wear appropriate apparel and NIOSH-approved respirators.
- When intervening in close proximity wear acid resistant over-suit.
- After intervention, proceed to clean the equipment (take a shower, remove clothing carefully, clean and check).

**Other precautions:** Use water to cool containers exposed to fire.

## 6. Accidental Release Measures

**6.1 Precautions:**

- Wear protective clothing and approved respirator when cleaning spills.
- Follow the protective measures given in section 8.

**6.2 Cleanup methods:**

- Sweep or shovel up and place into containers for disposal.
- Flush spill area with plenty of water.
- For disposal methods, refer to section 13.

**6.3 Precautions for protection of the environment:**

- Immediately notify the appropriate authorities in case of significant discharge.
- Do not discharge into the environment (sewers, rivers, soils, ...).

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#### 7. Handling and Storage

##### 7.1 Handling:

- Use only equipment and materials which are compatible with the product.
- Wash thoroughly after handling

##### 7.2 Storage:

- Store in a cool, dry area
- Keep container closed when not in use.
- Keep away from excessive heat.

##### 7.3 Specific Uses: See section 1.2

##### 7.4 Other precautions:

- Warn people about the hazards of the material.
- Avoid dust and formation of dust clouds.
- Follow the protective measures given in section 8.

##### 7.5 Packaging: Contact supplier for suggestions.

#### 8. Exposure Controls/Personal Protection

##### 8.1 Exposure Limit Values - Potassium Fluorosilicate

	TLV® ACGIH®-USA	OSHA PEL
Fluorides	2.5 mg/m <sup>3</sup> (as F)	2.5 mg/m <sup>3</sup> (as F)

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

##### 8.2 Exposure Controls:

- Follow the protective measures given in section 7.
- Maintain employee exposure to levels below the applicable exposure limits.

##### 8.2.1 Occupational Exposure Controls:

###### 8.2.1.1 Ventilation:

- Provide local ventilation suitable for the dust risk.
- Avoid breathing dusts/mists

###### 8.2.1.2 Respiratory protection: NIOSH/MSHA approved respirator for dusts.

###### 8.2.1.3 Hand protection: Protective gloves - chemical resistant: neoprene, and rubber.

###### 8.2.1.4 Eye protection: Chemical safety glasses

###### 8.2.1.5 Skin protection: Wear appropriate apparel (apron/boots of PVC, neoprene, rubber in case of dusts)

##### 8.3 Other precautions:

- Shower and eye wash stations.
- Avoid contact with eyes, skin and clothing.
- Do not swallow material.
- Consult the industrial hygienist or the safety manager for the selection of personal protective equipment suitable for the working conditions.

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#### 9. Physical and Chemical Properties

**9.1 Appearance:** Crystalline solid

**Color:** White

**Odor:** Odorless

**9.2 Important Health, Safety and Environmental information:**

**pH:** No data

**Change of state:**

Melting point: No data

Boiling point: None

Decomposition Temperature: 932°F (500°C)

**Flash Point:** Does not exhibit a flash point

**Flammability:** Not applicable

**Explosive Properties:** No data

**Oxidizing Properties:** No data

**Vapor Pressure:** Nil

**Relative Density:**

Specific gravity (H<sub>2</sub>O=1): 2.75

**Solubility:**

Water: Negligible

Fat: No data

**Partition coefficient:** P (n-octanol/water): No data

**Viscosity:** No data

**Vapor Density (air=1):** Not applicable

**Evaporation Rate:** Not applicable

#### 10. Stability and Reactivity

**10.1 Conditions to avoid:** Temperatures above 932°F (500°C)

**10.2 Materials and substances to avoid:**

- Cyanides
- Reactive metals (aluminum and magnesium)
- Strong acids

**10.3 Hazardous decomposition products:** Thermal decomposition may release hazardous hydrogen fluoride and other fluoride compounds including silicon tetrafluoride.

**10.4 Hazardous Polymerization:** Will not occur.

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#### 11. Toxicological Information

**11.1 Acute toxicity:**

**Inhalation:** No data

**Oral:** LD<sub>50</sub>, rat, 125 mg/kg (Sodium Hexafluorosilicate)

**Dermal:** No data

**Irritation:** No data

**Sensitization:** No data

**Comments:** None

**11.2 Chronic toxicity:** No data

**11.3 Carcinogenic Designation:** None

#### 12. Ecological Information

**12.1 Acute ecotoxicity:** No data

**12.2 Chronic ecotoxicity:** No data

**12.3 Mobility:** No data

**12.4 Degradation**

**Abiotic:** No data

**Biotic:** No data

**12.5 Potential for bioaccumulation:** No data

**12.6 Other adverse effects /Comments:** None

#### 13. Disposal Considerations

**13.1 Waste treatment:** Consult current federal, state and local regulations regarding the proper disposal of this material.

**13.2 Packaging treatment:** Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

**13.3 RCRA Hazardous Waste:** Not listed

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#### 14. Transport Information

Mode	DOT	IMDG	IATA
UN Number	2655	2655	2655
Class (Subsidiary)	6.1	Poison	Poison
Proper Shipping Name	Potassium Fluorosilicate	Potassium Fluorosilicate	Potassium Fluorosilicate
Hazard label (Subsidiary)	Poison	Toxic	Toxic
Marine Pollutant			
Placard [Subsidiary]			
Packing Group	III	III	III
Reportable Quantity	None		
MFAG			
Emergency Info	ERG: 151	EmS: 6.1-04	ERG Code: 6L
STCC #			
Other			

#### 15. Regulatory Information

##### National Regulations (US)

**TSCA Inventory 8(b):** Yes

**SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355):** No

**SARA Title III Sec. 311/312 (40 CFR 370):**

Hazard Category: None

**SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372):** No

**CERCLA Hazardous Substance (40CFR Part 302)**

Listed Substance: No

Unlisted Substance: No

##### State Component Listing:

State	Comment
CA	Airborne Contaminants & Emissions Inventory
CA	Hazardous Substance List
IL	Toxic Substances Disclosure to Employees Act
IN	Occupational Health & Safety Standards - Air
KY	Occupational Health & Safety Standards - Air
MN	Hazardous Substance List
NJ	Right to Know Substance List
NC	Exposure limits for Air Contaminants
PA	Right to Know
RI	Right to Know

##### National Regulations (Canada)

**Canadian DSL Registration:** DSL

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**WHMIS Classification:** D2B - Material causing other toxic effect

This product has been classified in accordance with the hazard criteria of the **Controlled Products Regulations** and the MSDS contains all the information required by the **Controlled Products Regulations**.

**Labeling according to Directive 1999/45/EC.**

<u>Category</u>	<u>ID</u>	<u>Phrase</u>
Symbols		
Phrases R	23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
Phrases S	1/2	Keep locked up and out of the reach of children.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	45	In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

## 16. Other Information

### 16.1 Ratings:

**NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)**

Health = 3 Flammability = 0 Instability = 0 Special = None

**HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)**

Health = 3 Fire = 0 Reactivity = 0 PPE = Supplied by User; dependent on local conditions

### 16.2 Other Information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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