

Product name: POTASSIUM FLUORIDE, PURE GRADE

Components	CAS-No	Weight %
Potassium fluoride	7789-23-3	90 - 100

4. FIRST AID MEASURES

General advice:	Immediate medical attention is required. Consult a physician.
Skin contact:	Call a physician immediately. Rinse with plenty of water.
Inhalation:	Artificial respiration and/or oxygen may be necessary. Immediate medical attention is required.
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention, preferably an eye specialist.
Ingestion:	Do not induce vomiting. If victim is alert, able to swallow, and not convulsing, give large quantities of water to dilute stomach contents. One or two glasses of milk, a magnesium-containing (milk of magnesia) or a calcium-containing antacid may be given for their soothing effects. Immediate medical attention is required.
Notes to physician:	Remove victim from contaminated area. Immediately flush skin with plenty of water paying particular attention to the underside of fingernails for a minimum of 15 minutes or until medical treatment is available. Remove all contaminated clothing and shoes while washing continuously. After thorough washing for at least 15 minutes, the burned area should be immersed in a solution of 0.13% iced aqueous benzalkonium chloride until pain is relieved. As an alternate first aid treatment, 2.5% calcium gluconate gel may be continuously massaged into burn area (hands should be protected by latex gloves to prevent secondary contamination) until the pain is relieved. The toxicity of fluoride compounds results primarily from the release of the free fluoride ion into the tissue. This toxicity closely resembles that of dilute hydrofluoric acid. The clinical effects of fluoride ion exposure depend on the concentration, the location and extent of exposure, and the duration of exposure. The most serious effects include potentially fatal hypocalcemia, deeply penetrating and extremely painful condition of brittle bones and calcified ligaments. Treatment modalities include copious water rinse followed by local application of calcium gluconate gel, subcutaneous injection of calcium gluconate solution, soaking with iced zephiran, or iced hyamine, or, in cases of intractable pain from exposure to fingers, intra-arterial calcium gluconate. Eye exposures are treated with copious water rinse followed by continuous irrigation with calcium gluconate solution. Eye exposure should be evaluated by an ophthalmologist.
Protection of first-aiders:	Wear personal protective equipment.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use dry chemical, CO ₂ , water spray or "alcohol" foam.
Extinguishing media which must not be used for safety reasons:	No information available
Special protective equipment for firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA / NIOSH (approved or equivalent) and full protective gear. Use personal protective equipment.
Specific hazards:	In the event of fire, the following can be released, potassium oxides, hydrogen fluoride.
Unusual hazards:	No hazards to be especially mentioned
Specific methods:	Water mist may be used to cool closed containers.
Flash Point:	Not determined.
Flash point test method:	Not applicable.
Autoignition temperature:	Not applicable.

Flammability Limits in Air:

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- Lower: Not applicable.
- Upper: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment as determined by usage and applicability.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Discharge to a public sewerage authority should coincide with all applicable local permits and notification requirements. May be hazardous to aquatic life if released to open waters.

Methods for containment: Prevent further leakage or spillage if safe to do so

Methods for cleaning up: For a spill involving a solid material, clean up promptly by scoop or vacuum. Avoid dust formation. Keep in suitable, closed containers for disposal. Dispose of in accordance with all local, state, provincial, and federal regulations.

7. HANDLING AND STORAGE

Handling

Technical measures/precautions: Use only in area provided with appropriate exhaust ventilation. Keep away from open flames, hot surfaces and sources of ignition.

Safe handling advice: Do not contact with skin, eyes, or clothing. Do not breathe vapors/dust. Do not ingest. Avoid dust formation.

Storage

Technical measures/storage conditions: Keep tightly closed in a dry, cool and well-ventilated place. Protect from moisture.

Incompatible products: Acids. Strong alkaline materials. Oxidizing agents. Corrosive to glass and porcelain.

Shelf Life (days): Not determined

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Respiratory protection: Use NIOSH approved respiratory equipment when airborne concentrations are equal to or may exceed exposure limits. For emergency or other conditions where exposure levels are not known or may be uncontrolled, use a positive pressure air-supplied or self-contained breathing apparatus (SCBA).

Hand protection: Protective gloves.

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect. Impervious clothing. Chemical resistant apron. Boots. Consult glove/clothing manufacturer to determine the most suitable chemical resistant glove/clothing for user's application. Consideration must be given to durability and permeation resistance.

Eye protection: Tightly fitting safety goggles. Face-shield. An emergency eye wash must be readily accessible to the work area.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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Exposure limits	ACGIH	OSHA	NIOSH
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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid	Color:	White
Odor:	None	Specific gravity:	No information available
pH:	7 - 9	Boiling point:	1625 °F / 885 °C
Melting point:	1580 °F / 860 °C	Evaporation rate:	Not applicable.
Vapor density:	Not applicable.	Vapor pressure:	Not applicable.
VOC content(%):	Not applicable.	Solubility in water:	Soluble
Solubility in other solvents:	No information available		

Flash Point:	Not determined.	Flash point test method:	Not applicable.
Autoignition temperature:	Not applicable.	Decomposition temperature:	Not applicable.

Explosion limits:

- Upper: Not applicable.
- Lower: Not applicable.

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Materials to avoid:	Acids. Oxidizing agents. Glass. Porcelain.
Conditions to avoid:	Incompatible products. Extremes of temperature and direct sunlight. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.
Hazardous decomposition products:	Contact with acids may produce hydrofluoric acid, Thermal decomposition can lead to the release of irritating gases and vapors which may include (but are not limited to), hydrogen fluoride, potassium oxides.
Possibility of hazardous reactions:	Contact with acids liberates toxic gas.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

Components	LD50/oral/rat	LC50/inhalation/8h/rat	LD50/dermal/rabbit
Potassium fluoride - 7789-23-3	245 mg/kg	No information available	No information available

Product Information

LC50/inhalation/4h/rat = No information available
LD50/dermal/rabbit = No information available
LD50/oral/rat = 245 mg/kg

Local effects

Skin irritation: Irritating to skin. May cause burns. Solutions are corrosive. The fluoride ion is capable of penetrating the skin where it will attack underlying tissues and bone. Large burns (over 25 square inches) may cause depletion of calcium in the body (hypocalcemia) and other toxic effects which can persist for several weeks and may be fatal. Symptoms may be delayed.

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Eye irritation:	Severe eye irritation. Risk of serious damage to eyes. Effects may be delayed.
Inhalation:	Causes severe irritation and burns. May cause damage. Symptoms may be delayed.
Ingestion:	Ingestion causes severe irritation and burns to the mouth, throat, and stomach. Harmful or fatal if swallowed.
Chronic toxicity:	Chronic exposure to inorganic fluorides has been known to produce embrittlement and decalcification of bones, and increases calcification of ligaments and vertebrae resulting in spinal stiffness (fluorosis). Long-term exposure may damage teeth.

Specific effects

Carcinogenic effects:	No information available
Mutagenic effects:	No information available
Reproductive toxicity:	No information available
Target organ effects:	Skeletal system. Bone.

Carcinogens

12. ECOLOGICAL INFORMATION

Environmental Hazards

Ecotoxicity effects:	Not determined.
Aquatic toxicity:	No information available.
Mobility:	No information available
Bioaccumulative potential:	No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of in accordance with federal, provincial, state, and local regulations

Contaminated packaging: Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

DOT

Proper shipping name:	POTASSIUM FLUORIDE
Hazard Class:	6.1
UN-No:	UN1812
Packing group:	III
Description:	POTASSIUM FLUORIDE , 6.1, UN1812, PGIII

TDG (Canada)

Proper shipping name:	POTASSIUM FLUORIDE
Hazard Class:	6.1
UN-No:	UN1812
Packing group:	III
Description:	POTASSIUM FLUORIDE , 6.1, UN1812, PGIII

IMO / IMDG

Proper shipping name:	POTASSIUM FLUORIDE
Hazard Class:	6.1

Product name: POTASSIUM FLUORIDE, PURE GRADE

UN-No: UN1812
Packing group: III
Description: POTASSIUM FLUORIDE , 6.1, UN1812, PGIII

IATA

Proper shipping name: POTASSIUM FLUORIDE
Hazard Class: 6.1
UN-No: UN1812
Packing group: III
Description: POTASSIUM FLUORIDE , 6.1, UN1812, PGIII

15. REGULATORY INFORMATION

International Inventories

All of the components in this product are on or exempt from the following inventories:

U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (ECL), China (IECSC), Japan (ENCS), Philippines (PICCS).

International Inventory Legend

TSCA: Toxic Substance Control Act
DSL: Domestic Substance List
NDSL: Non-Domestic Substance List
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: EU List of Notified Chemical Substances
ECL: Existing Chemicals List aka Existing and Evaluated Chemical Substances
AICS: Inventory of Chemical Substances
ENCS: Existing and New Chemical Substances
PICCS: Philippines Inventory of Chemicals and Chemical Substances

U.S. Regulations:

U.S. Regulations Legend

CA PROP 65: California Proposition 65 - Carcinogens List
TSCA 12(b): TSCA Section 12(b) - Export Notification
SARA 302: CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs and TPQs
SARA 313: CERCLA/SARA - Section 313 - Emission Reporting
CERCLA RQ: CERCLA/SARA - Hazardous Substances and Their Reportable Quantities
CWC: Chemical Weapons Convention - Annex on Chemicals
DEA LISTED: DEA (Drug Enforcement Administration) - DEA Controlled, Precursors, and / or Essential Chemicals

SARA 311	
Acute Health Hazard	YES
Chronic Health Hazard	YES
Fire Hazard	NO
Sudden Release of Pressure Hazard	NO
Reactive Hazard	NO

Canada

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

WHMIS Controlled List

WHMIS hazard class:
• D1B Toxic materials
• D2B Toxic materials



16. OTHER INFORMATION

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NFPA: Health: 3 Flammability: 0 Instability: 0

CAREFULLY READ THE FOLLOWING: The identification of ingredients in this document meets or exceeds the requirements set forth in 29 CFR, 40 CFR, TDG et al. at the date of publication. Ingredients present in a mixture or solution which are generically identified or not referenced in this document are not regulatorily required to be specifically identified or referenced. The information contained herein should be provided to all those who will use, handle, store, transport, or may otherwise be exposed to this product.

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Prepared by: H.E.S. Department