

1. Identification

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|---|--|-----------------------|--|
| Product identifier | POTASSIUM FLUORIDE, REAGENT (ACS) | | |
| Other means of identification | | | |
| Product code | 993 | | |
| CAS number | 7789-23-3 | | |
| Recommended use | professional, scientific and technical activities: other professional, scientific and technical activities | | |
| Recommended restrictions | None known. | | |
| Manufacturer/Importer/Supplier/Distributor information | | | |
| Manufacturer | | | |
| Company name | GFS Chemicals, Inc. | | |
| Address | P.O. Box 245 Powell, OH 43065 United States | | |
| Telephone | Phone | 740-881-5501 | |
| | Toll Free | 800-858-9682 | |
| | Fax | 740-881-5989 | |
| Website | www.gfschemicals.com | | |
| E-mail | service@gfschemicals.com | | |
| Emergency phone number | Emergency Assistance | Chemtrec 800-424-9300 | |

2. Hazard(s) identification

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|------------------------------|--|------------|
| Physical hazards | Not classified. | |
| Health hazards | Acute toxicity, oral | Category 3 |
| | Acute toxicity, dermal | Category 3 |
| | Acute toxicity, inhalation | Category 3 |
| | Skin corrosion/irritation | Category 1 |
| | Serious eye damage/eye irritation | Category 1 |
| | Specific target organ toxicity, repeated exposure | Category 1 |
| Environmental hazards | Hazardous to the aquatic environment, acute hazard | Category 2 |
| OSHA defined hazards | Not classified. | |
| Label elements | | |



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|--------------------------------|---|
| Signal word | Danger |
| Hazard statement | Toxic if swallowed. Toxic in contact with skin. Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled. Causes damage to organs through prolonged or repeated exposure. Toxic to aquatic life. |
| Precautionary statement | |
| Prevention | Do not breathe dust/fume/gas/mist/vapors/spray. Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. |
| Response | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Take off immediately all contaminated clothing and wash it before reuse. |
| Storage | Store in a well-ventilated place. Keep container tightly closed. Store locked up. |

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| Disposal | Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | None. |

3. Composition/information on ingredients

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|--------------------|--------------------------|------------|-----|
| POTASSIUM FLUORIDE | | 7789-23-3 | 100 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

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| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician. |
| Skin contact | Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse. First treatment with calcium gluconate paste. |
| Eye contact | Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. |
| Ingestion | Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. |
| Most important symptoms/effects, acute and delayed | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Prolonged exposure may cause chronic effects. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. |
| General information | Take off immediately all contaminated clothing. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. |

5. Fire-fighting measures

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| Suitable extinguishing media | Use extinguishing agent suitable for type of surrounding fire. |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | Fire may produce irritating, corrosive and/or toxic gases. |
| Special protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. |
| Fire fighting equipment/instructions | Move containers from fire area if you can do it without risk. Use water spray to cool unopened containers. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
|--|--|

Methods and materials for containment and cleaning up

Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Sweep up or gather material and place in appropriate container for disposal. This product is miscible in water. Should not be released into the environment. Prevent entry into waterways, sewer, basements or confined areas. Clean up in accordance with all applicable regulations.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid breathing dust. Avoid prolonged exposure. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Do not store near acids. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Material | Type | Value |
|---------------------------------------|------|-----------------------|
| POTASSIUM FLUORIDE (CAS 7789-23-3) | PEL | 2.5 mg/m ³ |

US. OSHA Table Z-2 (29 CFR 1910.1000)

| Material | Type | Value | Form |
|---------------------------------------|------|-----------------------|-------|
| POTASSIUM FLUORIDE (CAS 7789-23-3) | TWA | 2.5 mg/m ³ | Dust. |

US. ACGIH Threshold Limit Values

| Material | Type | Value |
|---------------------------------------|------|-----------------------|
| POTASSIUM FLUORIDE (CAS 7789-23-3) | TWA | 2.5 mg/m ³ |

US. NIOSH: Pocket Guide to Chemical Hazards

| Material | Type | Value |
|---------------------------------------|------|-----------------------|
| POTASSIUM FLUORIDE (CAS 7789-23-3) | TWA | 2.5 mg/m ³ |

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. An eye wash and safety shower must be available in the immediate work area.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear eye/face protection. Wear safety glasses with side shields (or goggles) and a face shield. Eye wash fountains are required.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

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| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. Respirator must be worn if exposed to dust. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Do not breathe dust. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

9. Physical and chemical properties

Appearance

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|--|--------------------------|
| Physical state | Solid. |
| Form | Crystalline. |
| Color | White. |
| Odor | Odorless. |
| Odor threshold | Not available. |
| pH | 7 - 9 (aqueous solution) |
| Melting point/freezing point | 1576.4 °F (858 °C) |
| Initial boiling point and boiling range | 2735.6 °F (1502 °C) |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |

Upper/lower flammability or explosive limits

| | |
|--|----------------|
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | 48 % at 18 °C |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |

Other information

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|-----------------------------|----------------|
| Density | 2.48 g/cm3 |
| Explosive properties | Not explosive. |
| Molecular formula | KF |
| Molecular weight | 58.10 g/mol |
| Oxidizing properties | Not oxidizing. |
| Specific gravity | 2.48 |

10. Stability and reactivity

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| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | Hazardous polymerization does not occur. |
| Conditions to avoid | None known. Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. This product reacts with acids. glass |
| Hazardous decomposition products | Hydrogen fluoride. |

11. Toxicological information

Information on likely routes of exposure

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|---------------------|---|
| Inhalation | Toxic if inhaled. |
| Skin contact | Toxic in contact with skin. Causes severe skin burns. |
| Eye contact | Causes serious eye damage. |
| Ingestion | Toxic if swallowed. Causes digestive tract burns. |

Symptoms related to the physical, chemical and toxicological characteristics Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Toxic if inhaled. Toxic in contact with skin. Toxic if swallowed.

| Product | Species | Test Results |
|---------|---------|--------------|
|---------|---------|--------------|

POTASSIUM FLUORIDE (CAS 7789-23-3)

Acute

Oral

| | | |
|------|-----|-----------|
| LD50 | Rat | 245 mg/kg |
|------|-----|-----------|

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes severe skin burns and eye damage.

Serious eye damage/eye irritation Causes serious eye damage. Causes severe eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. The fluoride ion is capable of penetrating the skin where it will attack underlying tissues and bone. Large exposures may cause depletion of calcium in the body (hypocalcemia) and other toxic effects.

Further information Symptoms may be delayed.

12. Ecological information

Ecotoxicity LC50: 125 mg/l, Brown trout (Salmo trutta), 48.00 hours
Toxic to aquatic life.

| Product | Species | Test Results |
|------------------------------------|---------|----------------------------|
| POTASSIUM FLUORIDE (CAS 7789-23-3) | | |
| Aquatic | | |
| Fish | LC50 | Brown trout (Salmo trutta) |
| | | 125 mg/l, 48 hours |

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

Bioaccumulative potential No data available.

Mobility in soil No data available.

Material name: POTASSIUM FLUORIDE, REAGENT (ACS)

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN1812
UN proper shipping name Potassium fluoride, solid
Transport hazard class(es)
Class 6.1(PGIII)
Subsidiary risk -
Label(s) 6.1
Packing group III
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB8, IP3, T1, TP33
Packaging exceptions 153
Packaging non bulk 213
Packaging bulk 240

IATA

UN number UN1812
UN proper shipping name Potassium fluoride, solid
Transport hazard class(es)
Class 6.1(PGIII)
Subsidiary risk -
Packing group III
Environmental hazards No.
ERG Code 6L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG

UN number UN1812
UN proper shipping name POTASSIUM FLUORIDE, SOLID
Transport hazard class(es)
Class 6.1(PGIII)
Subsidiary risk -
Packing group III
Environmental hazards
Marine pollutant No.
EmS F-A, S-A
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312

Yes

Hazardous chemical

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

4.0 mg/l
4.0 mg/l

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | No |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | No |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | No |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

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|-----------------------------|--|
| Issue date | April-19-2013 |
| Revision date | June-22-2017 |
| Version # | 02 |
| Disclaimer | The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. GFS Chemicals, Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available. |
| Revision information | This document has undergone significant changes and should be reviewed in its entirety. |