

## 1 Identification

### Product identifier

Trade name: 637F1 - Fluxing Agent

### Recommended use and restrictions on use

General use: Flux agent for soldering, for orthopedic procedures.  
Reserved for industrial and professional use.

### Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal code, city: Burlington, ON L7L 5N5, CA  
Canada

WWW: [www.ottobock.ca](http://www.ottobock.ca)

Email: [info.canada@ottobock.com](mailto:info.canada@ottobock.com)

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

Corporate headquarters:  
Ottobock SE & Co. KGaA  
Max-Näder-Straße 15  
Duderstadt  
Germany

### Emergency telephone number

COLLECT, Telephone: (613) 996-6666

## 2 Hazard identification

### Classification

Acute Toxicity 4 (oral)

Harmful if swallowed.

Acute Toxicity 4 (dermal)

Harmful in contact with skin.

Acute Toxicity 4 (inhalative)

Harmful if inhaled.

Skin Irritation 2

Causes skin irritation.

Eye Irritation 2A

Causes serious eye irritation.

Specific Target Organ Toxicity (Single Exposure) 3 May cause respiratory irritation.

### Information elements

Symbols:



Signal word:

**Warning**

Hazard statements:

- Harmful if swallowed.
- Harmful in contact with skin.
- Causes skin irritation.
- Causes serious eye irritation.
- Harmful if inhaled.
- May cause respiratory irritation.

Precautionary statements:

- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Wash hands and face thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- IF ON SKIN: Wash with plenty of water/soap.
- 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.
- IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
- Call a POISON CENTER/doctor if you feel unwell.
- Specific treatment (see 'First aid' on this label).
- Rinse mouth.
- If skin irritation occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- Dispose of contents/container to hazardous or special waste collection point.

### Other hazards known to the supplier with respect to the product

Danger of cutaneous absorption.  
On heating or in case of fire toxic gases may form.

## 3 Composition/Information on ingredients

### Mixture

Chemical name: Paste, contains water (35%).

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 14075-53-7	Potassium tetrafluoroborate	< 50 %	Skin Irritation 2. Eye Irritation 2A. Specific Target Organ Toxicity (Single Exposure) 3.
CAS 7789-23-3	Potassium fluoride	< 10 %	Acute Toxicity 3 (oral). Acute Toxicity 3 (dermal). Acute Toxicity 3 (inhalative).

The actual concentration or concentration range is withheld as a trade secret.

### 4 First-aid measures

#### Description of necessary first-aid measures

General information:	First aider: Pay attention to self-protection! In case of accident or if you feel unwell, seek medical advice immediately.
In case of inhalation:	Provide fresh air. Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Seek medical attention. If victim is at risk of losing consciousness, position and transport on their side.
In case of swallowing:	Rinse mouth and drink large quantities of water. Immediately get medical attention. Put victim at rest and keep warm.
In case of skin contact:	Immediately clean with water and soap followed by thorough rinsing. Take off immediately all contaminated clothing. Seek medical attention.
In case of eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

#### Most important symptoms and effects, whether acute or delayed

Harmful. Irritant.  
After contact with skin: Danger of cutaneous absorption.  
After eye contact: Risk of corneal clouding.

#### Indication of immediate medical attention and special treatment needed, if necessary

It is recommended to consult a doctor experienced in the treatment of lesions caused by hydrofluoric acid.  
Symptoms of poisoning may develop several hours following exposure. Victim should be under medical observation for at least 48 hours after exposure.

### 5 Fire-fighting measures

#### Suitable and unsuitable extinguishing media

Suitable extinguishing media:

Co-ordinate fire-fighting measures to the fire surroundings.

#### Specific hazards arising from the product

On heating or in case of fire toxic gases may form.  
In case of fire may be liberated: Hydrogen fluoride, Boron trifluoride, Diboron trioxide.

#### Special protective equipment and precautions for fire-fighters

Additional information:	Wear a self-contained breathing apparatus and chemical protective clothing. Do not allow fire water to penetrate into surface or ground water. Use water spray jet to knock down vapours. Do not inhale explosion and combustion gases.
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## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment. Keep unprotected people away.  
Provide fresh air. Avoid contact with skin and eyes.

Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains.

### Methods and material for containment and cleaning up

Collect dry and place in appropriate containers for disposal. Subsequent cleaning.

Additional information:

Forms slippery surfaces with water.

## 7 Handling and storage

### Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.

Wear appropriate protective equipment.

Use local exhaust in the field of the processing equipment.

In case of heating: Withdraw by suction.

Do not allow to dry.

### Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container tightly closed and dry.

Provide adequate ventilation. Keep in a cool place.

Protect from heat and direct sunlight.

Hints on joint storage:

Do not store together with acids, alkalis or oxidizing agents.

Keep away from food, drink and animal feedingstuffs.

Further details:

Keep locked up. Only trained personnel may be allowed to enter storage area.

## 8 Exposure controls/Personal protection

### Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
14075-53-7	Potassium tetrafluoroborate	Canada: Alberta, OEL 8 hour	2.5 mg/m <sup>3</sup> (calculated as F)
		Canada: BC, OEL TWA	2.5 mg/m <sup>3</sup> (calculated as F)
		Canada: Québec, VEMP	2.5 mg/m <sup>3</sup> (calculated as F)
7789-23-3	Potassium fluoride	Canada: Alberta, OEL 8 hour	2.5 mg/m <sup>3</sup> (calculated as F)
		Canada: BC, OEL TWA	2.5 mg/m <sup>3</sup> (calculated as F)
		Canada: Québec, VEMP	2.5 mg/m <sup>3</sup> (calculated as F)

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
14075-53-7	Potassium tetrafluoroborate	USA: ACGIH-BEI, blood	3 mg/L	Fluorides	end of exposure or end of shift
		USA: ACGIH-BEI, urine	2 mg/L	Fluorides	Prior to shift
7789-23-3	Potassium fluoride	USA: ACGIH-BEI, blood	3 mg/L	Fluorides	end of exposure or end of shift
		USA: ACGIH-BEI, urine	2 mg/L	Fluorides	Prior to shift

### Appropriate engineering controls

Provide adequate ventilation, and local exhaust as needed.

### Individual protection measures, such as personal protective equipment

**Respiratory protection:** Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. According to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2

**Hand protection:** Protective gloves according to OSHA Standard - 29 CFR: 1910.138.  
Glove material: Nitrile rubber-Layer thickness  $\geq 0,4$  mm  
Breakthrough time:  $> 480$  min.  
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

**Eye protection:** OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2003. Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

**Body protection:** Wear suitable protective clothing.

**General hygiene considerations:**  
Avoid contact with skin and eyes.  
Take off immediately all contaminated clothing.  
When using do not eat or drink.  
Keep away from food, drink and animal feedingstuffs.  
Wash hands before breaks and after work.  
Have eye wash bottle or eye rinse ready at work place.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	solid
Colour:	Form: pasty white
Odour:	characteristic
Odour threshold:	No data available
Melting point and freezing point:	approx. 500 °C
Boiling point or initial boiling point and boiling range:	100 °C
Flammability:	No data available

Lower and upper explosion limit or lower and upper flammability limit:

No data available

Flash point/flash point range:

Not applicable

Evaporation rate:

No data available

Auto-ignition temperature:

not self-igniting

Decomposition temperature:

>500 °C

pH:

9

Water solubility:

easily soluble

Partition coefficient — n-octanol/water:

No data available

Vapour pressure:

at 20 °C: 23 hPa

Density and/or relative density

at 20 °C: 1.35 g/cm<sup>3</sup>

Vapour density:

No data available

Particle characteristics:

No data available

### Additional information

Explosive properties:

not explosive

Solid content:

65.1 %

## 10 Stability and reactivity

Reactivity:

refer to 10.3

Chemical stability:

Product is stable under normal storage conditions.

Possibility of hazardous reactions:

No hazardous reactions known.

Conditions to avoid:

Protect from heat and direct sunlight.  
Do not allow to dry.

Incompatible materials:

Oxidizing agents, acids, alkalis

Hazardous decomposition products:

Hydrogen fluoride, Boron trifluoride, Diboron trioxide  
On heating or in case of fire toxic gases may form.

## 11 Toxicological information

### Information on the likely routes of exposure

No data available

### Health hazard information

Acute toxicity (oral): Acute Toxicity 4 (oral) = Harmful if swallowed.

Acute toxicity (dermal): Acute Toxicity 4 (dermal) = Harmful in contact with skin.

Acute toxicity (inhalative): Acute Toxicity 4 (inhalative) = Harmful if inhaled.

Skin corrosion/irritation: Skin Irritation 2 = Causes skin irritation.

Serious eye damage/irritation: Eye Irritation 2A = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Specific Target Organ Toxicity (Single Exposure) 3 = May cause respiratory irritation.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information:

Not known to cause sensitization.

Following information applies to the component Potassium fluoride:

LD50 Rat, oral: 245 mg/kg.

Warning - substance not yet tested completely.

After resorption: decrease of the blood calcium concentration, unconsciousness, cardiac arrhythmias, apnea, shock, spasms, agitation, cardiovascular disorders, CNS disorders.

At long term exposure: bone marrow damage.

### Symptoms

Harmful. Irritant.

After contact with skin: Danger of cutaneous absorption.

After eye contact: Risk of corneal clouding.

## 12 Ecological information

### Ecotoxicity

Further details:

Danger to drinking water when soaking into the soil or waters.

### Persistence and degradability

Further details:

Potassium fluoride and Potassium tetrafluoroborate:

Methods for the determination of biodegradability are not applicable to inorganic substances.

### Bioaccumulative potential

Partition coefficient — n-octanol/water:

No data available

### Mobility in soil

PBT/vPvB: not applicable

### Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

## 13 Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Special waste. Dispose of waste according to applicable legislation.

#### Package

Recommendation: Dispose of waste according to applicable legislation.  
Non-contaminated packages may be recycled.

## 14 Transport information

### UN number

TDG, IMDG, IATA-DGR: not applicable

### UN proper shipping name

TDG, IMDG, IATA-DGR: Not restricted

### Transport hazard class

TDG, IMDG, IATA-DGR: not applicable

### Packing group

TDG, IMDG, IATA-DGR: not applicable

### Environmental hazards

Marine pollutant: no

### Special precautions in connection with transport or conveyance either within or outside the premises

#### Canada: Transportation of Dangerous Goods (TDG)

Shipping name: Not restricted

#### Sea transport (IMDG)

Proper shipping name: Not restricted

Marine pollutant: no

#### Air transport (IATA)

Proper shipping name: Not restricted



### Further information

No dangerous good in sense of these transport regulations.

## 15 Regulatory information

### National regulations - Canada

Potassium tetrafluoroborate: DSL: listed

Potassium fluoride: DSL: listed

### Further regulations, limitations and legal requirements

No data available

## 16 Other information

Text for labelling: Contains Potassium fluoride and Potassium tetrafluoroborate.

Revision date: 17/12/2025

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Reason of change: General revision: Safety Data Sheet according to Hazardous Products Regulations (HPR) 2022

General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

#### Abbreviations and acronyms:

Acute Toxicity: Acute toxicity  
 AS/NZS: Australian Standards/New Zealand Standards  
 CAS: Chemical Abstracts Service  
 CFR: Code of Federal Regulations  
 CLP: Classification, Labelling and Packaging  
 CNS: Central Nervous System  
 DMEL: Derived minimal effect level  
 DNEL: Derived no-effect level  
 DSL: Domestic Substances List  
 EC: European Community  
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
 EN: European Standard  
 EQ: Excepted quantities  
 Eye Irritation: Eye irritation  
 IATA: International Air Transport Association  
 IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
 IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IMDG Code: International Maritime Dangerous Goods Code  
 IMO: International Maritime Organization  
 LD50: Lethal dose 50%  
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
 OEL: Occupational Exposure Limit Value  
 OSHA: Occupational Safety and Health Administration  
 PBT: Persistent, bioaccumulative and toxic  
 PNEC: Predicted no-effect concentration  
 Skin Irritation: Skin irritation  
 STOT SE: Specific target organ toxicity - single exposure  
 TDG: Transportation of Dangerous Goods Regulation in Canada  
 TLV: Threshold Limit Value  
 TRGS: Technical Rules for Hazardous Substances  
 vPvB: Very persistent and very bioaccumulative  
 WEL: Workplace Exposure Limit

Literature: - M005 Fluorwasserstoff, Flusssäure u. anorganische Fluoride  
 - M050 Tätigkeiten mit Gefahrstoffen

**Department issuing data sheet**

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.