SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Potassium fluoride a.r.

REACH Registration Number:	01-2119555273-40-XXXX
CAS No:	7789-23-3
Index No:	009-005-00-2
EC No:	232-151-5

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Reagents and laboratory chemicals
Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Details of the supplier of the safety data sheet

Company name:	AnalytiChem Services, Unipessoal, Lda
Street:	Rua de Júlio Dinis 676 7º
Place:	N-4050-320 Porto
Telephone:	+351 226002917
E-mail:	info@analytichem.com
Contact person:	SDS service department
E-mail:	SDS@analytichem.com
Internet:	www.analytichem.com
Responsible Department:	SDS service department

Supplier or manufacturer details

Company name:	AnalytiChem Belgium NV
Street:	Industriezone "De Arend" 2
Place:	B-8210 Zedelgem
Telephone:	+32 50 28 83 20
E-mail:	info.be@analytichem.com
Contact person:	SDS service department
E-mail:	SDS@analytichem.com
Responsible Department:	AnalytiChem: EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20 EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200 EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848 UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500 USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378 Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701 Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333

1.4. Emergency telephone number:

+44 20 3807 3798 (CHEMTREC)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 3; H331
Acute Tox. 3; H311
Acute Tox. 3; H301
Eye Dam. 1; H318

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

Pictograms:

Hazard statements

H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H318	Causes serious eye damage.

Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor.

Additional advice on labelling

No information available.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: KF

Molecular weight: 58,1 g/mol

Relevant ingredients

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
7789-23-3	potassium fluoride			100 %
	232-151-5	009-005-00-2	01-2119555273-40-XXXX	
	Acute Tox. 3, Acute Tox. 3, Acute Tox. 3, Eye Dam. 1; H331 H311 H301 H318			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
7789-23-3	232-151-5	potassium fluoride	100 %
	inhalation: ATE = 3 mg/l (vapours); inhalation: ATE = 0,5 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = ca. 148,5 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down.
Call a physician immediately.
fast help required

After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

After contact with skin

Rinse with plenty of water for at least 10 minutes. Immediately remove contaminated clothes. Apply calcium gluconate gel (preparation: boil 5 g of calcium gluconate in 85 ml of hot distilled water, add 10 g glycerol. Allow 5 g of Carmellose-sodium to swell in the hot solution. Stable for 6 months, store in a cool place) and massage into the skin until the pain subsides, in between rinse with water and apply fresh gel. Continue gel therapy for another 15 minutes after the pain has subsided. If no calcium gluconate gel is available, apply several dressings thoroughly moistened with 20 % calcium gluconate solution. Medical advice absolutely required!

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing. Protect uninjured eye.

After ingestion

Never give anything by mouth to an unconscious person or a person with cramps.
Rinse mouth immediately and drink plenty of water.
Adverse human health effects and symptoms:
Gastric perforation
Remove casualty to fresh air and keep warm and at rest.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritant
Causes burns.
Dyspnoea
Respiratory complaints
Unconsciousness
Spasms
Corneal opacity.
Agitation
Cardiac arrhythmias
Circulatory collapse

4.3. Indication of any immediate medical attention and special treatment needed

It is recommended to consult a doctor with experience in the treatment of lesions caused by hydrofluoric acid

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible solids

Hazardous combustion products

In case of fire may be liberated: Hydrogen fluoride

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

In case of fire and/or explosion do not breathe fumes. Use water spray jet to protect personnel and to cool endangered containers.

Additional information

Suppress gases/vapours/mists with water spray jet.

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Consult an expert

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8
Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid exposure - obtain special instructions before use.
Do not breathe dust. Avoid dust formation.
Read label before use. Handle and open container with care.
When using do not eat, drink, smoke, sniff. Keep container tightly closed.
Use personal protection equipment. Use extractor hood (laboratory).
Provide adequate ventilation.
Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities
Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.
Take off immediately all contaminated clothing and wash it before reuse.
If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.
Keep locked up.
Store in a place accessible by authorized persons only.
Provide adequate ventilation as well as local exhaustion at critical locations.
storage temperature +5°C - +30°C

Hints on joint storage

Take national regulations into account.

Further information on storage conditions

Store in a dry place.
Suitable container/equipment material: plastic
Unsuitable container/equipment material: Metal Glass

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

CAS No	Substance			
DNEL type		Exposure route	Effect	Value
7789-23-3	potassium fluoride			
Worker DNEL, long-term		inhalation	systemic	3 mg/m³
Worker DNEL, acute		inhalation	systemic	12 mg/m³
Worker DNEL, long-term		inhalation	local	3 mg/m³
Worker DNEL, acute		inhalation	local	12 mg/m³
Worker DNEL, long-term		dermal	systemic	0,44 mg/kg bw/day
Worker DNEL, acute		dermal	systemic	0,44 mg/kg bw/day

PNEC values

CAS No	Substance	
Environmental compartment		Value
7789-23-3	potassium fluoride	
Freshwater		0,89 mg/l
Micro-organisms in sewage treatment plants (STP)		51 mg/l
Soil		11 mg/kg

8.2. Exposure controls

Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used.
Do not breathe dust. Avoid dust formation.
Technical measures and the application of suitable work processes have priority over personal protection equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection:
goggles
Face protection umbrella

Hand protection

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: vertrieb@kcl.de with the following specification (test according to EN 374):

By long-term hand contact
Recommended glove articles: KCL 741 Dermatril® L
Recommended material: NBR (Nitrile rubber) 0,11 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Recommended glove articles: KCL 741 Dermatril® L
Recommended material: NBR (Nitrile rubber) 0,11 mm
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under

conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.
Take off immediately all contaminated clothing.
Wash hands before breaks and after work.
The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: dust formation
Filtering device with filter or ventilator filtering device of type: B-(P3)
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	colourless / white
Odour:	odourless
Odour threshold:	No data available
Melting point/freezing point:	846 °C
Boiling point or initial boiling point and boiling range:	1505 °C
Flammability:	not applicable
Lower explosion limits:	not determined
Upper explosion limits:	not determined
Flash point:	X
Auto-ignition temperature:	No data available
Decomposition temperature:	not determined
pH-Value (at 20 °C):	8 - 9 (50 g/l)
Viscosity / kinematic:	not determined
Water solubility: (at 20 °C)	923 g/l
Solubility in other solvents not determined	
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	log Pow: -0,77
Dispersion stability:	No data available
Vapour pressure: (at 885 °C)	1,3 hPa
Vapour pressure:	not determined
Density (at 20 °C):	2,48 g/cm³
Relative density:	No data available
Bulk density:	~ 400 kg/m³
Relative vapour density:	not determined
Particle characteristics:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties
No data available

Sustained combustibility:	No data available

Self-ignition temperature

Solid:	not applicable
Gas:	not applicable

Oxidizing properties
Not oxidising.

Other safety characteristics

Evaporation rate:	not determined
Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	100%
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available

No data available:

Viscosity / dynamic:	not determined
Flow time:	not determined

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent, strong
Acid

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire:
SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes

Toxicocinetics, metabolism and distribution

Avoid exposure - obtain special instructions before use.

Acute toxicity

Toxic if inhaled.
Toxic in contact with skin.
Toxic if swallowed.
Resorption (oral)
Resorption (by inhalation)
Resorption (dermal)

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
7789-23-3	potassium fluoride					
	oral	LD50 mg/kg	ca. 148,5	Rat	Other company data (1984)	EPA OPPTS 870.1100
	dermal	LD50 mg/kg	> 2000	Rat	Study report (1995)	EPA OPPTS 870.1200
	inhalation vapour	ATE	3 mg/l			
	inhalation dust/mist	ATE	0,5 mg/l			

Irritation and corrosivity

Serious eye damage/eye irritation: Causes serious eye damage.
Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.
Carcinogenicity: Based on available data, the classification criteria are not met.
Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure

Based on available data, the classification criteria are not met.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.
No data available

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

No data available

Further information

Irritant

Causes burns.
Dyspnoea
Respiratory complaints
Unconsciousness
Spasms
Corneal opacity.
Agitation
Cardiac arrhythmias
Circulatory collapse

SECTION 12: Ecological information

12.1. Toxicity

Based on available data, the classification criteria are not met.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
7789-23-3	potassium fluoride						
	Acute algae toxicity	ErC50	43 mg/l	96 h	various algae species	European Union Risk Assessment Report, V	Methods not detailed in the review.
	Fish toxicity	NOEC	4 mg/l	21 d	Oncorhynchus mykiss	EU RAR Hydrogen Fluoride, Volume 8, 2001	other: no guideline stated
	Algae toxicity	NOEC	50 mg/l	7 d	various	Appendix to Report 785484010, RIVM (1989	The review includes summaries of a numbr
	Crustacea toxicity	NOEC	3,7 mg/l	21 d	Daphnia magna	European Union Risk Assessment Report, V	The publication is a review article of v

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

log Pow: -0,77
No indication of bioaccumulation potential.

BCF

CAS No	Chemical name	BCF	Species	Source
7789-23-3	potassium fluoride	53 - 58		EU RAR Hydrogen Fluo

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of UK REACH.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

No information available.

Further information

Avoid release to the environment.

Do not allow to enter into surface water or drains.
Do not allow to enter into soil/subsoil.
Harmful effect due to pH shift.
Forms corrosive mixtures with water even if diluted.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Dispose of waste according to applicable legislation.
Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a physico-chemical treatment facility under observation of official regulations.
Do not mix with other wastes.

Contaminated packaging

This material and its container must be disposed of as hazardous waste.
Handle contaminated packages in the same way as the substance itself.
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number:	UN 1812
14.2. UN proper shipping name:	POTASSIUM FLUORIDE, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T5
Limited quantity:	5 kg
Excepted quantity:	E1
Transport category:	2
Hazard No:	60
Tunnel restriction code:	E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 1812
14.2. UN proper shipping name:	POTASSIUM FLUORIDE, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Classification code:	T5
Special Provisions:	802
Limited quantity:	5 kg
Excepted quantity:	E1

Marine transport (IMDG)

14.1. UN number or ID number:	UN 1812
14.2. UN proper shipping name:	POTASSIUM FLUORIDE, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Special Provisions:	-
Limited quantity:	5 kg
Excepted quantity:	E1

EmS: F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1812
14.2. UN proper shipping name:	POTASSIUM FLUORIDE, SOLID
14.3. Transport hazard class(es):	6.1
14.4. Packing group:	III
Hazard label:	6.1
Limited quantity Passenger:	10 kg
Passenger LQ:	Y645
Excepted quantity:	E1
IATA-packing instructions - Passenger:	670
IATA-max. quantity - Passenger:	100 kg
IATA-packing instructions - Cargo:	677
IATA-max. quantity - Cargo:	200 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Toxic. strongly corrosive.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Restrictions on use (REACH, annex XVII):
Entry 75

Information according to Directive 2012/18/EU (SEVESO III): H2 ACUTE TOXIC

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly hazardous to water

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning.

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,9.

Abbreviations and acronyms

Acute Tox. 3: Acute toxicity, hazard category 3
Eye Dam. 1: Serious eye damage, hazard category 1
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
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H301	Toxic if swallowed.
H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
H311	Toxic in contact with skin.
H318	Causes serious eye damage.
H331	Toxic if inhaled.

Further Information

Provide appropriate information, instructions and training to users
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.
The receiver of our product is singularly responsible for adhering to existing laws and regulations.