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Safety data sheet according to UK REACH

revised on: 02.08.2024 Version number 8 Creation Date: 06.12.2016

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

· 1.1 Product identifier

· Trade name: Potassium fluoride

· Article number: 1630,1682

• CAS Number: 7789-23-3 • EC number: 232-151-5

· Index number: 009-005-00-2

- · Registration number 01-2119555273-40-XXXX
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against

The product is not intended for use by consumers

For professional users only

· Life cycle stages

F Formulation or re-packing

IS Use at industrial Sites

· Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU24 Scientific research and development

Product category

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC39 Cosmetics, personal care products

PC40 Extraction agents

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· Environmental release category

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

· Application of the substance / the mixture

Industrial use

Laboratory chemical

Chemical analytics

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· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Th. Geyer GmbH & Co. KG Dornierstr. 4 – 6 D-71272 Renningen

Tel.: +49(0)7159-1637-0, Fax:+49 (0)7159/18417

www.thgeyer.de

sicherheitsdatenblaetter@thgeyer.de

· Further information obtainable from: Product management department

· 1.4 Emergency telephone number:

National Poisons Information Service

City Hospital Dudley Road

Birmingham B18 7QH

Tel.:Emergency: (00 44) 87 06 00 62 66

Members of the public seeking specific information on poisons should contact:

In England and Wales: NHS 111 - dial 111

In Scotland: NHS 24 - dial 111

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- · Classification according to Regulation (EC) No 1272/2008



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.

- · 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the GB CLP regulation.

· Hazard pictograms



GHS06

- · Signal word Danger
- · Hazard statements

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

· Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- · 2.3 Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.

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· vPvB: Not applicable.

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SECTION 3: Composition/information on ingredients

· 3.1 Substances

· CAS No. Description

CAS: 7789-23-3 Kaliumfluorid Identification number(s) EC number: 232-151-5

· Index number: 009-005-00-2

SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

First aider needs to protect himself.

Immediately remove any clothing soiled by the product.

Remove breathing equipment only after contaminated clothing have been completely removed.

· After inhalation:

Remove person from danger zone.

Supply fresh air.

Call a doctor immediately.

In case of breathing difficulties or respiratory arrest, initiate artificial respiration.

· After skin contact:

Wash with plenty of soap and water, take off soiled clothes and shoes.

Rub in Ca-gluconate solution or Ca-gluconate gel immediately.

Call a doctor immediately.

· After eve contact:

Protect unharmed eye.

Rinse opened eye for several minutes under running water. Then consult a doctor.

During transport, continue to rinse with isotonic saline solution, alternatively with water.

Remove contact lenses

· After swallowing:

Rinse mouth thoroughly with water.

Immediately have 1 - 4 drinking ampoules of "frubiase calcium T" or 1% calcium gluconate solution drunk in small sips (if not available: substitute milk or chalk suspension, otherwise water).

In the meantime, call an emergency doctor to the scene of the accident.

Do not induce vomiting.

· Information for doctor: Please observe safety data sheet/label.

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

Headache

Thirst

Cramp

Gastric or intestinal disorders

Nausea

Profuse sweating

Unconsciousness

· Hazards

Danger of disturbed cardiac rhythm.

Danger of impaired breathing.

Danger of circulatory collapse.

4.3 Indication of any immediate medical attention and special treatment needed

In case of lung irritation, administer glucocorticoid dose aerosol.

Monitor circulation.

If swallowed, gastric irrigation.

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Symptomatic treatment.

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SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

Use fire extinguishing methods suitable to surrounding conditions.

Use carbon dioxide, extinguishing powder, water spray or alcohol-resistant foam.

· For safety reasons unsuitable extinguishing agents: Water with full jet.

· 5.2 Special hazards arising from the substance or mixture

Non-flammable.

Formation of toxic gases is possible during heating or in case of fire.

In case of fire, the following can be released:

Hydrogen fluoride (HF)

Potassium oxides

Formation of hazardous vapours possible due to ambient fire.

· 5.3 Advice for firefighters

· Protective equipment:

Wear fully protective suit.

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

· Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Safely prevent extinguishing water from entering groundwater or surface water.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing.

Keep people at a distance and stay on the windward side.

Avoid formation of dust.

Use respiratory protective device against the effects of fumes/dust/aerosol.

Clear the danger zone.

Do not breathe dust.

Avoid contact with eyes and skin.

Particular danger of slipping on leaked/spilled product.

- 6.2 Environmental precautions: Do not allow to enter sewers/surface or ground water.
- · 6.3 Methods and material for containment and cleaning up:

Cover the sewerage system.

Pick up mechanically.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

Dispose of the material collected according to regulations.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Apply the general protective and hygienic measures when handling chemicals.

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Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· Information about fire - and explosion protection:

Substance itself does not burn, adapt extinguishing measures to surroundings Keep respiratory protective device available.

- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles:

Prevent any seepage into the ground.

Store only in the original receptacle.

Information about storage in one common storage facility:

Store away from oxidising agents.

Store away from water.

Store away from foodstuffs.

· Further information about storage conditions:

Protect from humidity and water.

Keep container tightly sealed.

- · Storage class: 6.1 D
- · 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- · Ingredients with limit values that require monitoring at the workplace:

CAS: 7789-23-3 Kaliumfluorid

WEL Long-term value: 2.5 mg/m³

as F

- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Appropriate engineering controls No further data; see section 7.
- · Individual protection measures, such as personal protective equipment
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. If air-purifying respiratory protection is required according to the risk assessment, wear a respirator with full-face mask with combination filter (US) or with filter type ABEK (EN 14387) filter cartridge. If the respirator is the only protective measure, an ambient air self-contained breathing apparatus with afull face mask must be worn. Respirators and components must be approved to appropriate government standards (for example, NIOSH (US) or CEN (EU)). Translated with www.DeepL.com/Translator (free version)

· Hand protection



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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· Material of gloves

Information on suitable glove materials is not available at present.

However, experience has shown that the glove materials polychloroprene, nitrile rubber, butyl rubber,

fluororubber and polyvinyl chloride are suitable for protection against undissolved solids.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eve/face protection



Safety glasses

· Body protection:



Protective work clothing (e. g. safety shoes EN ISO 20345, long-sleeved protective working garments).

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state Solid · Colour: Colourless · Odour: Characteristic

· Melting point/freezing point: 860°C

· Boiling point or initial boiling point and boiling

1,500 °C range

 Flammability Product is not flammable.

· Lower and upper explosion limit

· Lower: Not determined. · Upper: Not determined. · Flash point: Not applicable. · Decomposition temperature: Not determined. Not applicable.

· Viscosity:

· Kinematic viscosity Not applicable. · Dynamic: Not applicable.

· Solubility

· water at 20 °C: 923 q/l

· Partition coefficient n-octanol/water (log value) Not determined.

· Vapour pressure at 20 °C: 0 hPa

Density and/or relative density

· Density at 20 °C: 2.48 g/cm3 Not determined.

· Relative density Not determined. · Vapour density Not applicable.

· Particle characteristics

See section 3.

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· 9.2 Other information

· Appearance:

· Form: Solid

· Important information on protection of health and

environment, and on safety.

· Ignition temperature: Not determined.

· Explosive properties: Product does not present an explosion hazard.

· Molecular weight 58.1 g/mol

· Change in condition

· Evaporation rate Not applicable.

· Information with regard to physical hazard

classes

· Explosives Void · Flammable gases Void · Aerosols Void · Oxidising gases Void · Gases under pressure Void · Flammable liquids Void · Flammable solids Void

· Self-reactive substances and mixtures Void · Pyrophoric liquids Void · Pyrophoric solids Void · Self-heating substances and mixtures Void

· Substances and mixtures, which emit flammable

gases in contact with water Void · Oxidising liquids Void Oxidising solids Void · Organic peroxides Void · Corrosive to metals Void Void

Desensitised explosives

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability Stable when stored and handled properly.
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · 10.3 Possibility of hazardous reactions Reacts with acids.
- · 10.4 Conditions to avoid

Protect from moisture.

Heat, flames and sparks.

- 10.5 Incompatible materials: Avoid contact with other chemicals.
- 10.6 Hazardous decomposition products: In case of fire: see section 5.

SECTION 11: Toxicological information

- · 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
- · Acute toxicity Toxic if swallowed, in contact with skin or if inhaled.

| I D/I | C50 | values | relevant for | classification: |
|-------|-----|--------|--------------|-----------------|

| | | 245 mg/kg (rat) |
|------------|------|-----------------|
| Dermal | LD50 | 300 mg/kg (ATE) |
| Inhalative | LC50 | 0.5 mg/l (ATE) |

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- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation Based on available data, the classification criteria are not met.
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- · 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.
- · Subacute to chronic toxicity: -
- · 11.2 Information on other hazards
- · Endocrine disrupting properties Substance is not listed.

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- · 12.4 Mobility in soil No further relevant information available.
- · 12.5 Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · 12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

- · 12.7 Other adverse effects
- · Additional ecological information:
- · General notes:

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

Observe local (country-specific) regulations and laws.

This product and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

· Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system. Chemicals must be disposed of in accordance with the respective national regulations.

| · European waste catalogue | | | | | |
|----------------------------|---|--|--|--|--|
| 06 00 00 | 0 WASTES FROM INORGANIC CHEMICAL PROCESSES | | | | |
| 06 07 00 | wastes from the MFSU of halogens and halogen chemical processes | | | | |
| 06 07 99 | 06 07 99 wastes not otherwise specified | | | | |
| HP6 | Acute Toxicity | | | | |

- · Uncleaned packaging:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agents: Water, if necessary together with cleansing agents.

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| SECTION 14: Transport information | |
|---|--|
| 14.1 UN number or ID number ADR, IMDG, IATA | UN1812 |
| 14.2 UN proper shipping name ADR IMDG, IATA | 1812 POTASSIUM FLUORIDE, SOLID POTASSIUM FLUORIDE, SOLID |
| 14.3 Transport hazard class(es) | |
| ADR | |
| Class Label | 6.1 (T5) Toxic substances. 6.1 |
| IMDG, IATA | |
| Class Label | 6.1 Toxic substances.6.1 |
| 14.4 Packing group ADR, IMDG, IATA | III |
| 14.5 Environmental hazards: | Not applicable. |
| 14.6 Special precautions for user Hazard identification number (Kemler code): EMS Number: Stowage Category Segregation Code | Warning: Toxic substances. 60 F-A,S-A A SG35 Stow "separated from" SGG1-acids |
| 14.7 Maritime transport in bulk according to IM instruments | O Not applicable. |
| Transport/Additional information: | |
| ADR Limited quantities (LQ) Excepted quantities (EQ) | 5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g |
| Transport category Tunnel restriction code | 2 E |
| IMDG Limited quantities (LQ) Excepted quantities (EQ) | 5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g |
| UN "Model Regulation": | UN 1812 POTASSIUM FLUORIDE, SOLID, 6.1, III |

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SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Inventory of Hazardous Chemicals

CAS: 7789-23-3 Kaliumfluorid

- · Poisons Act
- · Regulated explosives precursors Substance is not listed.
- · Regulated poisons Substance is not listed.
- · Reportable explosives precursors Substance is not listed.
- · Reportable poisons Listed
- Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the GB CLP regulation.

· Hazard pictograms



- · Signal word Danger
- · Hazard statements

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

· Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I Substance is not listed.
- · Seveso category H2 ACUTE TOXIC
- · Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
- · Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
- · DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment Annex II

Substance is not listed.

- · REGULATION (EU) 2019/1148
- · Annex I RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

Substance is not listed.

- · Annex II REPORTABLE EXPLOSIVES PRECURSORS Substance is not listed.
- · Regulation (EC) No 273/2004 on drug precursors Substance is not listed.
- Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

Substance is not listed.

- · National regulations:
- · Information about limitation of use:

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

The application, use and processing of our products are beyond our control and are therefore exclusively your responsibility.

- · Department issuing SDS: Product management
- · Contact: Product management
- · Abbreviations and acronyms:

ADR: Accord relatif au transport international 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 Harmonised System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values Acute Tox. 3: Acute toxicity – Category 3

* Data compared to the previous version altered.

F