

Safety Data Sheet per OSHA HazCom 2012

Page 1/5 Printing date 11/24/2015 Reviewed on 08/24/2009

#### 1 Identification

Product identifier

Product name: Potassium hydrogen fluoride, 2.2M aqueoussolution

Stock number: H31646

**CAS Number:** 7789-29-9

EC number: 232-156-2

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Details of the supplier of the safety da Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc. 30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Email: tech@alfa.com www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

#### 2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage. Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms





GHS05 GHS06

Signal word Danger

Hazard statements

H301 Toxic if swallowed. H314 Causes severe skin burns and eye damage.

**Precautionary statements**P260 Do not br
P301+P310 IF SWAL

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405

Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects

E - Corrosive material



Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System)



HEALTH Health (acute effects) = 3
IRE Flammability = 0
Flammability = 0
Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable. vPvB: Not applicable.

### 3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description: 7789-29-9 Potassium hydrogen fluoride, 2.2M aqueoussolution Identification number(s): EC number: 232-156-2

## 4 First-aid measures

Description of first aid measures

**General information** Immediately remove any clothing soiled by the product.

(Contd. on page 2)

(Contd. of page 1)

# Product name: Potassium hydrogen fluoride, 2.2M aqueoussolution

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Do not induce vomiting; immediately call for medical help.
Information for doctor
Meet important symptoms and effects, both south and dolored.

Most important symptoms and effects, both acute and delayed Causes severe skin burns.

Causes serious eve damad

Indication of any immediate medical attention and special treatment needed No further relevant information available.

#### 5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire. Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Hydrogen fluoride (HF)
Potassium oxide

Advice for firefighters Protective equipment: Wear self-contained respirator.

Wear fully protective impervious suit.

#### 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Absorb with liquid-binding material (sand, diatomite, acid binders, ur Use neutralizing agent. Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required. 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.

#### 7 Handling and storage

Handling Precautions for safe handling

Precautions for sare nandling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: The product is not flammable

Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:
Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.

Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

## 8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters Components with limit values that require monitoring at the workplace:

Fluorides (as F)

ACGIH TLV

AUSTRIA TEV Austria MAK Belgium TWA Finland TWA France TWA

France IWA 2
Germany MAK
Hungary TWA
Netherlands MAC-K
Norway TWA 1
Poland TWA 1
Sweden NGV
Switzerland MAK-W
United Kingdom TWA

Switzerland MAK-W 1.5; 3-KZG-W United Kingdom TWA 2.5 Russia TWA 2 Denmark TWA 2.5 USA PEL 2.5

7789-29-9 Potassium hydrogen fluoride, 2.2M aqueoussolution (100.0%)

PEL (USA) Long-term value: 2.5 mg/m<sup>3</sup> as F

(Contd. on page 3)

(Contd. of page 2)

# Product name: Potassium hydrogen fluoride, 2.2M aqueoussolution

Long-term value: 2.5 mg/m³ REL (USA) as É Long-term value: 2.5 mg/m³ as F, BEI TLV (USA) EL (Canada) Long-term value: 2.5 mg/m³ as F

Ingredients with biological limit values:

7789-29-9 Potassium hydrogen fluoride, 2.2M aqueoussolution (100.0%)

### REI (USA) 2 mg/L

Medium: urine

Time: prior to shift

Parameter: Fluoride (background, nonspecific)

3 mg/L Medium: urine Time: end of shift Parameter: Fluoride (background, nonspecific)

Additional information: No data

Exposure controls

Personal protective equipment

Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:

Impervious gloves
Check protection of names.
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Penetration time of glove material (in minutes) Not determined

The protection time of glove material (in minutes) and determined

Eye protection:
Tightly sealed goggles
Full face protection
Body protection: Protective work clothing.

#### 9 Physical and chemical properties

Information on basic physical and chemical properties

General Information Appearance: Form: Liquid Colorless Color: Odor: Odorless Odor threshold: Not determined. pH-value: Not determined.

Change in condition Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start: Not determined Not determined Not determined

Flash point: Flammability (solid, gaseous) Ignition temperature: Decomposition temperature: Not determined Not determined. Not determined Not determined Not determined. Auto igniting:

Danger of explosion: Explosion limits: Lower: Upper: Not determined Not determined Vapor pressure: Density: Relative density Vapor density Not determined Not determined Not determined Not determined Evaporation rate Solubility in / Miscibility with Not determined.

Water: Fully miscible Partition coefficient (n-octanol/water): Not determined.

Viscosity: dynamic: kinematic: Not determined Not determined.

Other information No further relevant information available.

# 10 Stability and reactivity

Product does not present an explosion hazard.

Reactivity No information known.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Contact with strong acids releases hydrogen fluoride
Water reacts violently with alkali metals.
Reacts with alkaline earth metals.
Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.
Conditions to avoid No further relevant information available.
Incompatible materials: No information known.
Hazardous decomposition products:
Hydrogen fluoride

Hydrogen fluoride

(Contd. on page 4)

# Product name: Potassium hydrogen fluoride, 2.2M agueoussolution

(Contd. of page 3) Potassium oxide

### 11 Toxicological information

Information on toxicological effects

Acute toxicity:

Acute toxicity:
Toxic if swallowed.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: Causes severe skin burns.
Eye irritation or corrosion: Causes serious eye damage.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Garcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity:

Subacute to chronic toxicity:
Fluorides may cause salivation, nausea, vomiting, diarrhea and abdominal pain, followed by weakness, tremors, shallow respiration, convulsions and coma. May cause brain and kidney damage. Chronic fluoride poisoning can cause severe bone changes, loss of weight, anorexia, anemia and dental defects.
Subacute to chronic toxicity: No effects known.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

UN3421

8 Corrosive substances.

8 Corrosive substances.

8+6.1 8 (CT1) Corrosive substances

### 12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes:

Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

### 13 Disposal considerations

Waste treatment methods

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

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DOT, IMDG, IATA

UN proper shipping name DOT

IMDG, IATA

Transport hazard class(es)

DOT



UN-Number



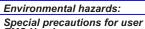


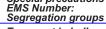


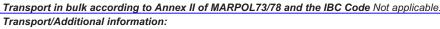












DOT Marine Pollutant (DOT): UN "Model Regulation":

No

8+6.1

Acids

Not applicable.

UN3421, Potassium hyrdogendifluoride solution, 8 (6.1), II

Warning: Corrosive substances

Potassium hyrdogendifluoride solution POTASSIUM HYDROGENDIFLUORIDE SOLUTION

USA

(Contd. on page 5)

### Product name: Potassium hydrogen fluoride, 2.2M agueoussolution

(Contd. of page 4)

#### 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)





GHS05 GHS06

Signal word Danger Hazard statements
H301 Toxic if swallowed.
H314 Causes severe skin burns and eye damage.
Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.

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

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

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Substance is not listed

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

#### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user. Conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / 
Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO: Ti. Technical Instructions by the "International Civil Aviation Organization" (ICAO)

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

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

VPVB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

MTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)

USA