

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name: BUFFERD HYDROFLUORIC ACID 110U****1.2 Relevant identified uses of the substance or mixture and uses advised against:**

No further relevant information available.

**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

DAIKIN INDUSTRIES, LTD. CHEMICALS DIVISION:

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**Further information obtainable from:** <http://www.daikin.com/>**1.4 Emergency telephone number:**

+81-6-6349-7521, +1-256-306-5000, +86-512-5-232-0949, +82-2-568-1722, +49-211-179 225-0

**SECTION 2: Hazard identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Acute Tox. 3 H301 Toxic if swallowed.



STOT SE 2 H371 May cause damage to organs.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



Met. Corr.1 H290 May be corrosive to metals.

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008:**

The product is classified and labelled according to the CLP regulation.

**Signal word:** Danger**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.

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

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Printing date 16.03.2015

Version number 1

Revision: 04.02.2015

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### SECTION 3: Composition/information on ingredients

#### Information on ingredients:

1341-49-7 Ammonium bifluoride <i>T R25; C R34</i> <i>Acute Tox. 3, H301; Skin Corr. 1B, H314</i>	16%
12125-01-8 Ammonium fluoride <i>T R23/24/25</i> <i>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331</i>	27%
Fluorosurfactant <i>Xn R22; Xi R41</i> <i>Eye Dam. 1, H318; Acute Tox. 4, H302</i>	<0,1%
7732-18-5 Water	50-60%

**Additional information:** For the wording of the listed risk phrases refer to section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### General information:

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

*Immediately remove any clothing soiled by the product.*

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

*Seek immediate medical advice.*

*First aiders shall pay attention to self-protection.*

##### After inhalation:

*Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult a doctor if symptoms persist.*

*In case of unconsciousness place patient stably in side position for transportation.*

##### After skin contact:

*After rinsing with water thoroughly, apply 2.5% Ca-gluconate solution or Ca-gluconate gel immediately. Do not rub hard.*

*Apply the solution or the gel every 1-2 hours. Continue applying them every several hours even after the pain is eased.*

*If they are not at hand, keep rinsing with warm water for at least 30 minutes and call for a doctor immediately. Hand this SDS to the doctor.*

*After eye contact: Rinse opened eye for several minutes under running water. Then consult an ophthalmologist.*

##### After swallowing:

*Do not induce vomiting; Consult a doctor immediately.*

*Drink plenty of water and provide fresh air. Consult a doctor immediately.*

#### 4.2 Most important symptoms and effects, both acute and chronic:

*After eye contact: irritation of the mucous membranes.*

*After skin contact: the affected skin becomes painful and red.*

*After swallowing: nausea, stomachache.*

*Protection of rescuers: Wear self-contained breathing apparatus and fully protective suit to avoid contact with toxic substances.*

#### 4.3 Indication of any immediate medical attention and special treatment needed:

*Medical supervision for at least 48 hours.*

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing agents:

Water spray

Foam

Fire-extinguishing powder

Dry sand

CO<sub>2</sub>

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**Trade name: BUFFERD HYDROFLUORIC ACID 110U****5.2 Special hazards arising from the substance or mixture:***Can form explosive gas-air mixtures.**Formation of toxic gases is possible during heating or in case of fire.***5.3 Advice for firefighters:***Cool the container thoroughly with a large amount of water even after extinguishment.**In case of a large fire: stay a safe distance away from the fire and use unmanned hose holder or monitor nozzles.**If impossible, evacuate from the fire and burn in until the materials disappear.**Remove receptacles from area of fire if possible.***Protective equipment:***Wear self-contained breathing apparatus and protective suit.**Do not inhale explosion gases or combustion gases.*

<b>SECTION 6: Accidental release measures</b>
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**6.1 Personal precautions, protective equipment and emergency procedures:***Ensure adequate ventilation before entering the area.**Stay on the windward side.**Keep out unauthorized persons.**Wear appropriate protective devices (See Section 8 Exposure Controls/ Personal Protection). Avoid contact with eyes and skin.**Do not swallow the product.***6.2 Environmental precautions:** *Must not be emitted into the environment.***6.3 Methods and material for containment and cleaning up:***For a small amount of leakage: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders) or collect in an empty container that can be sealed tightly.**For a large amount of leakage: Enclose with banks to avoid outflow. Lead the leakage to a safe place and collect.**Use neutralising agent.**Dispose contaminated material as waste according to section 13.**Ensure adequate ventilation.**Remove the gas with water haze. After recovering it, rinse with a large amount of water.***6.4 Reference to other sections:***See Section 8 for information on personal protection equipment.**See Section 13 for disposal information.*

<b>SECTION 7: Handling and storage</b>
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**7.1 Precautions for safe handling:***Open and handle receptacle with care.**Prevent formation of aerosols.**Ensure good ventilation/exhaustion at the workplace.**Do not handle until all safety precautions have been read and understood.***Information about fire - and explosion protection:***Keep ignition sources away - Do not smoke.**Keep respiratory protective device available.***7.2 Conditions for safe storage, including any incompatibilities:****Storage****Requirements to be met by storerooms and receptacles:***Store only in the original receptacle.**Store in a cool and dry location.**Provide acid-resistant floor.***Information about storage in one common storage facility:***Do not store together with acids.**Do not store together with alkalis (caustic solutions).**See section 10 for information on incompatible materials.***Further information about storage conditions:***Keep container tightly sealed.**Protect from heat and direct sunlight.**Store receptacle in a well ventilated area.**Store locked up.*

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Trade name: **BUFFERD HYDROFLUORIC ACID 110U**7.3 *Specific end use(s): No further relevant information available.*

### SECTION 8: Exposure controls/personal protection

#### Additional information about design of technical facilities:

Install eyewash containers and safety showers in worksites where the product is stored or handled.

Keep the process closed, equip with local exhaust ventilation and take other engineering measurements to control airborne concentration below administrative level or threshold limit value.

8.1 **Control parameters** No further information available.

#### Ingredients with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

#### 8.2 Exposure controls

##### Personal protective equipment

##### General protective and hygienic measures:

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

Keep away from tobacco products.

**Respiratory protection:** Use respiratory protective device with filters for acid gases.

##### Protection of hands:



Protective gloves

**Material of gloves:** Fluorocarbon rubber

##### Eye protection:



Tightly sealed goggles

##### Body protection:

Protective work clothing

Full head, face and neck protection



Acid resistant protective clothing including boots and apron

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

##### General Information

##### Appearance

<b>Form:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Pungent

<b>pH-value:</b>	5
<b>Melting point/Melting range:</b>	ca.5 °C
<b>Boiling point/Boiling range:</b>	No further information available.

<b>Flash point:</b>	Not applicable.
<b>Lower explosive limit:</b>	No further information available.
<b>Upper explosive limit:</b>	No further information available.
<b>Vapour pressure:</b>	No further information available.

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Density at 20 °C: 1,11

Solubility in / Miscibility with water: Fully miscible.

Partition coefficient (n-octanol/water): No further information available.

9.2 Other information: No further relevant information available.

### SECTION 10: Stability and reactivity

10.1 Reactivity May be corrosive to metals.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions:

Reacts with alkali (lyes).

Reacts with acids.

Reacts with carbon dioxide.

10.4 Conditions to avoid: Keep away from heat, sparks, flame, high temperature.

10.5 Incompatible materials: Glass, concrete and silicon

10.6 Hazardous decomposition products:

Hydrogen fluoride

Ammonia

### SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD/LC50 values relevant for classification: No further information available.

Primary irritant effect

on the skin: Strong caustic effect on skin and mucous membranes.

on the eye: Strong caustic effect.

after inhalation: No further information available.

Sensitisation: No sensitising effects known.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Toxic

Harmful

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

CMR effects

Carcinogenicity: No further information available.

Reproductive toxicity: No further information available.

Specific target organ toxicity - repeated exposure: No further information available.

### 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.

Additional ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

12.5 Results of PBT and vPvB assessment

PBT: No further relevant information available.

vPvB: No further relevant information available.

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12.6 Other adverse effects: No further relevant information available.

### SECTION 13: Disposal considerations

**13.1 Waste treatment methods****Recommendation:** Disposal must be made according to official regulations.**Uncleaned packaging****Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

**14.1 UN-Number:****ADR, IMDG, IATA**

UN2817

**14.2 UN proper shipping name:****ADR:**

2817 AMMONIUM HYDROGENDIFLUORIDE SOLUTION

**IMDG, IATA**

AMMONIUM HYDROGENDIFLUORIDE SOLUTION

**14.3 Transport hazard class(es):****ADR****Class:**

8 Corrosive substances.

**Label:**

8+6.1

**IMDG****Class:**

8 Corrosive substances.

**Label:**

8/6.1

**IATA****Class:**

8 Corrosive substances.

**Label:**

8 (6.1)

**14.4 Packing group:****ADR, IMDG, IATA**

II

**14.5 Environmental hazards:****Marine pollutant:**

No

**14.6 Special precautions for user:**

Warning: Corrosive substances.

**Danger code (Kemler):**

86

**EMS Number:**

F-A,S-B

**Segregation groups:**

Acids, ammonium compounds

**14.7 Transport in bulk according to Annex II of****MARPOL73/78 and the IBC Code:**

Not applicable.

**Transport/Additional information:**

Avoid direct sunlight. Make sure of no damage, corrosion, leaks on the receptacles.

Take necessary measures for preventing cargo shift.

**ADR****Limited quantities (LQ):**

1L

**Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

**Transport category:**

2

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Trade name: **BUFFERD HYDROFLUORIC ACID 110U**

<b>Tunnel restriction code:</b>	E
<b>IMDG</b>	
<b>Limited quantities (LQ)</b>	1L
<b>Excepted quantities (EQ)</b>	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
<b>UN "Model Regulation":</b>	UN2817, AMMONIUM HYDROGENDIFLUORIDE SOLUTION, 8 (6.1), II

### SECTION 15: Regulatory information

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

No further relevant information available.

#### Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

#### Hazard pictograms



GHS05 GHS06 GHS08

**Signal word** Danger

#### Hazard-determining components of labelling:

Ammonium fluoride

Ammonium bifluoride

#### Hazard statements

H290 May be corrosive to metals.

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

H371 May cause damage to organs.

H373 May cause damage to organs through prolonged or repeated exposure.

#### 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.

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

**National regulations** No further information available.

**Other regulations, limitations and prohibitive regulations:** No further information available.

### SECTION 16: Other information

The product is for the industrial use only. We do not guarantee the safety in case the product is used for the other purposes. When using the product for health-care application or food/feed application, consult us in advance.

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.

**Department issuing SDS:** EHS Department

**Contact:** <http://www.daikin.com/>

#### Abbreviations and acronyms:

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 Harmonised System of Classification and Labelling of Chemicals

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*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*Met. Corr.1: Corrosive to metals, Hazard Category 1*

*Acute Tox. 3: Acute toxicity, Hazard Category 3*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

*STOT SE 2: Specific target organ toxicity - Single exposure, Hazard Category 2*

*STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2*