

Printing date 02.09.2013

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## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** HFC-152a
- **CAS Number:**  
75-37-6
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the preparation** refrigerant
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
DAIKIN INDUSTRIES, LTD. CHEMICAL DIVISION:  
Umeda Center Bldg., 4-12, Nakazaki-Nishi2-chome, Kita-Ku, Osaka, JAPAN  
Phone: (+81) 6-6373-4345 Fax: (+81) 6-6373-4281
- **Further information obtainable from:** <http://www.daikin.com/>
- **Emergency telephone number:** +49-211-179 225-0 / office hour, +1-256-306-5000, +81-6-6349-7521

## 2 Hazard identification

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



GHS02 flame

Flam. Gas 1 H220 Extremely flammable gas.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

Press. Gas H280 Contains gas under pressure; may explode if heated.

- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Signal word** Danger
- **Precautionary statements**  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P405 Store locked up.  
P410 Protect from sunlight.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
75-37-6 1,1-difluoroethane

## 4 First aid measures

- **Description of first aid measures**
- **General information:** Seek immediate medical advice.
- **After inhalation:**  
Take affected persons into fresh air and keep quiet.  
At high levels, cardiac arrhythmia may occur.
- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
In cases of frost bites, rinse with plenty of water. Do not remove clothing.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.

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· **Information for doctor:**

Catecholamines such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.

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

Frost bites

Causes asphyxiation in high concentrations. May cause an abnormal heart rhythm and prove suddenly fatal.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Firefighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:**

none

Water with full jet

· **Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Hydrogen fluoride (HF)

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

· **Advice for firefighters**

· **Protective equipment:** Wear fully protective suit.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Wear protective clothing.

· **Environmental precautions:** Suppress gases/fumes/haze with water spray.

· **Methods and material for containment and cleaning up:** Ensure adequate ventilation.

· **Reference to other sections** See Section 8 for information on personal protection equipment.

## 7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

Waste air is to be released into the atmosphere only via suitable separators.

Open and handle receptacle with care.

· **Information about fire - and explosion protection:**

The product is not flammable.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Store only in unopened original receptacles.

Store in a cool and dry location.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep container tightly sealed.

Do not seal receptacle gas tight.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

· **Maximum storage temperature:** 40 °C

· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

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- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Wash hands before breaks and at the end of work.  
Keep away from tobacco products.
- **Respiratory protection:**  
Wear respirator for organic gases, where leakage may occur.  
Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
To avoid skin problems reduce the wearing of gloves to the required minimum.



Protective gloves

- **Material of gloves**  
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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Eye protection:**



Tightly sealed goggles

- **Body protection:** Protective work clothing

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

<b>Form:</b>	Liquefied gas
<b>Colour:</b>	Colourless
<b>Odour:</b>	Odourless
- **Change in condition**

<b>Melting point/Melting range:</b>	-117 °C
<b>Boiling point/Boiling range:</b>	-25 °C
- **Flash point:** Not applicable.
- **Ignition temperature:** 454 °C
- **Lower:** 4,0 Vol %
- **Upper:** 19,6 Vol %
- **Vapour pressure at 20 °C:** 5100 hPa
- **Density at 25 °C:** 0,8996 g/cm<sup>3</sup>
- **Solubility in / Miscibility with water:** Not miscible or difficult to mix.
- **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** alkali or alkaline earth metals--powdered Al, Zn, Mg, etc.

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- **Hazardous decomposition products:** Fluorophosgene on contact with naked flame or red hot objects.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values relevant for classification:**

### 75-37-6 1,1-difluoroethane

Oral LD50 >1500 mg/kg (rat)

Inhalative LC50/4 h > 383,000 ppm (rat)

- **Other information (about experimental toxicology):**

Ames Assay – Negative

Mouse micronucleus assay in vivo - Negative

### 75-37-6 1,1-difluoroethane

Inhalative Development NOEL : 50,000 ppm (rat)

- **Subacute to chronic toxicity:**

### 75-37-6 1,1-difluoroethane

Inhalative chronic study 25,000 ppm (rat)

not carcinogenic and produced no life-shortening toxic effects.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Other information:** The product is slightly biodegradable.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential**  
Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:** no data
- **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**  
Must be specially treated adhering to official regulations.  
Incineration in an adequate incinerator is recommended.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **UN-Number**
- **ADR, IMDG, IATA** 1030
- **UN proper shipping name**
- **ADR** 1030 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)
- **IMDG, IATA** 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)

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· **Transport hazard class(es)**· **ADR**

· **Class** 2 2F Gases.  
 · **Label** 2.1

· **IMDG**

· **Class** 2.1  
 · **Label** 2.1

· **IATA**

· **Class** 2 Gases.  
 · **Label** 2.1  
 · **Packing group**  
 · **ADR, IMDG, IATA** Not applicable  
 · **Environmental hazards:**  
 · **Marine pollutant:** No  
 · **Special precautions for user** Warning: Gases.  
 · **Danger code (Kemler):** 23  
 · **EMS Number:** F-D,S-U  
 · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**· **ADR**

· **Limited quantities (LQ)** LQ0  
 · **Transport category** 2  
 · **Tunnel restriction code** B/D  
 · **UN "Model Regulation":** UN1030, ,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A), 2.1

## 15 Regulatory information

## 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.

· **Department issuing SDS:** EHS Department· **Contact:** <http://www.daikin.com/>· **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

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent