

**Section 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier****Product name:** 1,1-DIFLUOROETHANE**REACH registered number(s):** 01-2119474440-43**CAS number:** 75-37-6**EINECS number:** 200-866-1**Product code:** R152A**Synonyms:** REFRIGERANT R152A**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of substance / mixture:** ES 1 - Formulsting, blending, repacking - Industrial use. ES 2 - Propellant - industrial use ES 4 - Propellant (including one component foam) - professional use Industrial and Professional use.**1.3. Details of the supplier of the safety data sheet****Company name:** National Refrigerants Ltd  
4 Watling Close  
Sketchley Meadows Business Park  
Hinckley  
Leicestershire  
LE10 3EZ  
United Kingdom  
**Tel:** 01455 630790  
**Fax:** 01455 630791  
**Email:** [sds@nationalref.com](mailto:sds@nationalref.com)**1.4. Emergency telephone number****Emergency tel:** Carechem24 +44 (0)1865 407333**Section 2: Hazards identification****2.1. Classification of the substance or mixture****Classification under CLP:** Flam. Gas 1: H220; Press. Gas: H280**Most important adverse effects:** Extremely flammable gas. Contains gas under pressure; may explode if heated.**2.2. Label elements****Label elements:****Hazard statements:** H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

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**Hazard pictograms:** GHS02: Flame

GHS04: Gas cylinder



**Signal words:** Danger

**Precautionary statements:** P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381: Eliminate all ignition sources if safe to do so.

P403: Store in a well-ventilated place.

P410: Protect from sunlight.

## 2.3. Other hazards

**PBT:** This product is not identified as a PBT/vPvB substance.

## Section 3: Composition/information on ingredients

### 3.1. Substances

**Chemical identity:** 1,1-DIFLUOROETHANE

**CAS number:** 75-37-6

**EINECS number:** 200-866-1

**REACH registered number(s):** 01-2119474440-43

## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Do not use hot water. If frostbite has occurred call a physician.

**Eye contact:** Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

**Ingestion:** Ingestion is unlikely because of the physical properties and is not expected to be hazardous. As this product is a gas refer to inhalation section.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. If conscious, ensure the casualty sits or lies down. If unconscious, check for breathing and apply artificial respiration if necessary. Consult a doctor.

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

**Skin contact:** There may be redness or whiteness of the skin in the area of exposure. Frost-bite may occur causing the affected area to become white and numb.

**Eye contact:** There may be severe pain. Corneal burns may occur. May cause permanent damage.

**Ingestion:** Ingestion is unlikely due to the physical properties of the product. As product is a gas refer to inhalation section.

[cont...]

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**Inhalation:** Inhalation may produce the following symptoms: Shortness of breath, dizziness, weakness, nausea, headache, narcosis, irregular cardiac activity. Asphyxia.

**Delayed / immediate effects:** May cause cardiac arrhythmia.

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

**Immediate / special treatment:** Do Not give adrenaline or similar drugs.

## Section 5: Fire-fighting measures

### 5.1. Extinguishing media

**Extinguishing media:** Alcohol resistant foam. Carbon dioxide. Dry chemical powder. Water spray. Use water spray to cool containers.

### 5.2. Special hazards arising from the substance or mixture

**Exposure hazards:** Highly flammable. Vapour may travel considerable distance to source of ignition and flash back. In combustion emits toxic fumes of hydrogen fluoride. In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

### 5.3. Advice for fire-fighters

**Advice for fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions:** Evacuate the area immediately. Eliminate all sources of ignition. Ventilate the area, especially low or enclosed places where heavy vapours might collect.

### 6.2. Environmental precautions

**Environmental precautions:** Stop release if safe to do so. The product evaporates readily. Prevent from entering sewers, basements and work pits, or any place where the accumulation can be dangerous.

### 6.3. Methods and material for containment and cleaning up

**Clean-up procedures:** Material evaporates. Ventilate the area, especially low or enclosed places where heavy vapours might collect.

### 6.4. Reference to other sections

**Reference to other sections:** Refer to section 8 of SDS.

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

**Handling requirements:** Ensure there is sufficient ventilation of the area. Ensure there is exhaust ventilation of the area. Do not handle in a confined space. Earth any equipment used in handling. Use non-sparking tools. Smoking is forbidden.

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## 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions:** Store in a cool, well ventilated area. Keep away from sources of ignition. Keep container tightly closed. Keep away from direct sunlight. Store at a temperature not exceeding 45°C.

**Suitable packaging:** Must only be kept in original packaging.

## 7.3. Specific end use(s)

**Specific end use(s):** ES1 - Formulation, blending, repacking - Industrial use. ES2 - Propellant - Industrial Use. ES5 - Propellant/One component foam - Consumer use.

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Workplace exposure limits:

#### Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
EU	1000 PPM	-	-	-

### DNEL/PNEC Values

#### 1,1-DIFLUOROETHANE

Type	Exposure	Value	Population	Effect
DNEL	Inhalation	2713 mg/m <sup>3</sup>	Workers	Systemic
PNEC	Fresh water	0.048mg/l	-	-
PNEC	Marine water	0.0048 mg/l	-	-
PNEC	Fresh water sediments	0.19 mg/l	-	-
PNEC	Marine sediments	0.019 mg/l	-	-
PNEC	Soil (agricultural)	0.141 mg/l	-	-

### 8.2. Exposure controls

**Engineering measures:** Ensure there is sufficient ventilation of the area. Ensure there is exhaust ventilation of the area. Ensure lighting and electrical equipment are not a source of ignition. Ensure all engineering measures mentioned in section 7 of SDS are in place.

**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency. Vapours are heavier than air and can cause suffocation by reducing the oxygen available for breathing.

**Hand protection:** Protective gloves.

**Eye protection:** Safety glasses with side-shields. Safety goggles. Face-shield. Ensure eye bath is to hand.

**Skin protection:** Protective clothing.

**Environmental:** Gas escapes to be kept to the minimum by engineering processes and operating methods.

## Section 9: Physical and chemical properties

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## 9.1. Information on basic physical and chemical properties

**State:** Liquified gas

**Colour:** Colourless

**Odour:** Characteristic odour

**Evaporation rate:** No data available.

**Oxidising:** Not applicable.

**Solubility in water:** 3.2 g/l at 21 deg.C and 1013 hPa

**Also soluble in:** Most organic solvents.

**Boiling point/range°C:** -25

**Melting point/range°C:** -117

**Flammability limits %: lower:** 4

**upper:** 20.2

**Flash point°C:** No data available.

**Part.coeff. n-octanol/water:** Pow 1.13 at 21oC

**Autoflammability°C:** 440

**Vapour pressure:** 5.1 Bar at 20oC

**Relative density:** 2.3 (Air=1)

**pH:** Not applicable.

## 9.2. Other information

**Other information:** No data available.

## Section 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity:** Stable under recommended transport or storage conditions.

### 10.2. Chemical stability

**Chemical stability:** Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous reactions:** Can form potential explosive atmosphere in air. May react violently with oxidants.

### 10.4. Conditions to avoid

**Conditions to avoid:** Heat. Flames. Hot surfaces. Sources of ignition.

### 10.5. Incompatible materials

**Materials to avoid:** Alkali metals. Alkali earth metals. Finely powdered metals. Oxidising agents.

### 10.6. Hazardous decomposition products

**Haz. decomp. products:** In combustion emits toxic fumes of hydrogen fluoride. In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

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## Toxicity values:

Route	Species	Test	Value	Units
GASES	RAT	4H LC50	437500	ppmV

## Symptoms / routes of exposure

**Skin contact:** There may be redness or whiteness of the skin in the area of exposure. Frost-bite may occur causing the affected area to become white and numb.

**Eye contact:** There may be severe pain. Corneal burns may occur. May cause permanent damage.

**Ingestion:** Ingestion is unlikely due to the physical properties of the product. As product is a gas refer to inhalation section.

**Inhalation:** Inhalation may produce the following symptoms: Shortness of breath, dizziness, weakness, nausea, headache, narcosis, irregular cardiac activity. Asphyxia.

**Delayed / immediate effects:** May cause cardiac arrhythmia.

## Section 12: Ecological information

### 12.1. Toxicity

#### Ecotoxicity values:

Species	Test	Value	Units
FISH	96H LC50	295783	mg/l
Daphnia magna	48H EC50	146695	-

### 12.2. Persistence and degradability

**Persistence and degradability:** Not biodegradable.

### 12.3. Bioaccumulative potential

**Bioaccumulative potential:** No bioaccumulation potential.

### 12.4. Mobility in soil

**Mobility:** Organic carbon - water partitioning coefficient: Koc: 4.47

### 12.5. Results of PBT and vPvB assessment

**PBT identification:** This product is not identified as a PBT/vPvB substance.

### 12.6. Other adverse effects

**Other adverse effects:** Ozone Depletion Potential (ODP): 0 (R11 = 1) R152a Global Warming Potential (GWP): 124 (CO<sub>2</sub>=1) Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Disposal operations:** Product evaporates.

**Recovery operations:** Consult manufacturer or supplier for information regarding recovery and recycling of the product. If recovery is not possible, incinerate at a licenced instalation.

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**Waste code number:** 14 06 01

**Disposal of packaging:** Return to supplier.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport information

### 14.1. UN number

**UN number:** UN1030

### 14.2. UN proper shipping name

**Shipping name:** 1,1-DIFLUOROETHANE (R 152A)

### 14.3. Transport hazard class(es)

**Transport class:** 2

### 14.4. Packing group

### 14.5. Environmental hazards

**Environmentally hazardous:** No

**Marine pollutant:** No

### 14.6. Special precautions for user

**Tunnel code:** B/D

**Transport category:** 2

## Section 15: Regulatory information

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

**Specific regulations:** Contains fluorinated greenhouse gases covered by the Kyoto Protocol.

### 15.2. Chemical Safety Assessment

**Chemical safety assessment:** A chemical safety assessment has been carried out for the substance or the mixture by the supplier.

## Section 16: Other information

### Other information

**Other information:** This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

\* indicates text in the SDS which has changed since the last revision.

**Phrases used in s.2 and s.3:** H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

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