

**R-32**
**100003200**
**SECTION 1 Identification of the substance/mixture and of the company/undertaking**
**1.1. Product identifier**

**Product name** : R-32  
**Common chemical name** : 1,1-Difluoromethane  
**CAS nr** : 75-10-5  
**EC Number** : 200-839-4  
**REACH registration numbe** : 01-2119471312-47

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

**1.2.1 Relevant identified uses** : Refrigerant

**1.3. Details of the supplier of the safety data sheet**

: DEHON SERVICE  
 26 Avenue du Petit Parc  
 94683 VINCENNES Cedex France  
 Tel : +33 (0) 1 43 98 75 00  
 Fax : +33 (0) 1 43 98 21 51

**e-mail** : ContactFDS@climalife.dehon.com

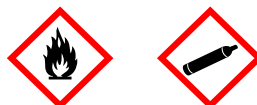
**1.4 Emergency telephone number**

: EMERGENCY TELEPHONE NUMBER (24h/24) : + 33 (0) 1 72 11 00 03  
 Anti-poison Center : INRS/ORFILA (France) : +33 (0) 1 45 42 59 59  
 Anti-poison Centre (Belgium) : +32 70 245 245  
 Anti-poison Centre (Netherlands) : +31 30 274 8888  
 Anti-poison Centre (Spain) : +34 91 562 04 20  
 Anti-poison Centre (United Kingdom) : +44 870 600 6266  
 Poisons Information Centre (Hungary) : +36 80 201 199

**SECTION 2 Hazards identification**

 \* **2.1. Classification of the substance or mixture**
**2.1.1. Regulation (EC) No 1272/2008 (CLP)**

**Physical hazards** : Flammable gases - Category 1 (Flam. Gas 1) - H220  
 Gases under pressure - Liquefied gas (Press. Gas) - H280

**2.2. Label elements**
**2.2.1 Labelling EC 1272/2008 (CLP)**
**Hazard pictograms**

**Signal words**

: Danger

**Hazard statements**

: H220 : Extremely flammable gas  
 : H280 : Contains gas under pressure; may explode if heated

**Precautionary statements :**

- **Prevention** : P210 : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **Response** : P377 : Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 : In case of leaking gas fire, eliminate all ignition sources if safe to do so.
- **Storage** : P410+P403 : Protect from sunlight Store in a well-ventilated place
- \* **- Further data** : Greenhouse fluorinated gas falling within Kyoto Protocol (GWP = 675)

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## SECTION 2 Hazards identification (continued)

### 2.3. Other hazards

#### Adverse human health effects

: Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing

: **Extremely flammable gas**  
**Contains gas under pressure; may explode if heated**

: Contact with liquid may cause frostbite and serious damage to eyes

## SECTION 3 Composition/information on ingredients

**3.1./3.2. Substance / Preparation** : Substance.

#### Components contributing to the hazard :

Substance name	Contents	CAS No	EC No	Index No	Ref REACH	Classification
Difluoromethane	100 %	75-10-5	200-839-4	-----	01-2119471312-47	F+; R12 Flam. Gas 1;H220 Liquefied gas;H280

## SECTION 4 First aid measures

### 4.1. Description of first aid measures

#### Inhalation

: Move the affected person away from the contaminated area and into the fresh air  
If the person feels unwell : Call a doctor immediately

#### Skin contact

: In the event of contact with the liquid: treat resulting frostbite as a burn  
Immediately remove contaminated clothing or footwear  
Immediately rinse with plenty of water  
If skin burns appear, call a doctor immediately

#### Eye contact

: Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum)  
Consult an eye specialist immediately, even if there are no immediate symptoms.

#### Ingestion

: Not specifically applicable (gas)

#### Protection of first-aiders

: Do not enter without an appropriate protective equipment  
- self-contained breathing apparatus  
- protective clothing

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

: Headaches  
Drowsiness  
Dizziness  
Loss of co-ordination  
Cardiac disorders

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

: -

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**SECTION 5 Fire-fighting measures**
**5.1. Extinguishing media**

**Suitable extinguishing media** : Carbon dioxide (CO<sub>2</sub>)  
Powders  
Foam

**Unsuitable extinguishing media** : Water

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

**Specific hazards** : Gas/air mixtures are explosive  
On heating : Pressure increase  
On thermal decomposition (pyrolysis) : Toxic and corrosive vapours are released

**5.3. Advice for firefighters**

**Specific fire fighting methods** : Cool down the containers exposed to heat with a water spray  
Do not attempt to fight the fire without suitable protective equipment

**Protection of fire-fighters** : Self-contained breathing apparatus  
Impermeable protective equipment

**SECTION 6 Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures** : Avoid contact with skin and eyes  
Do not smoke  
Stop the leak.  
Evacuate the danger area.  
Only qualified personnel equipped with suitable protective equipment may intervene  
Remove all sources of ignition  
Prevent the product from entering cellars, basements or pits  
Prevent the product from entering drains (risk of explosion)

**6.2. Environmental precautions** : -

**6.3. Methods and material for containment and cleaning up** : Mechanically ventilate the spillage area.

**6.4 Reference to other sections** : For further information refer to section 8 "Exposure controls/personal protection"

**SECTION 7 Handling and storage**
**7.1. Precautions for safe handling**

**Technical measures** : Ventilation  
Material and equipment suitable for use under explosive conditions  
Use non-sparking tools

**Precautions** : Smoking is forbidden  
Avoid the build-up of electrostatic charge  
Work in a well-ventilated area

**7.2. Conditions for safe storage, including any incompatibilities**
**Storage conditions**

**- Recommended** : Store :  
- in a cool, well-ventilated area  
- away from direct sunlight  
- away from any source of ignition  
- away from any source of heat

**Incompatible products** : Strong oxidizing agents  
Alkali metals  
Alkaline earth metals

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## SECTION 7 Handling and storage (continued)

### Packaging materials

- Recommended : Ordinary steel
- Not suitable : Alloys containing more than 2% magnesium
- 7.3. Specific end use(s) : -

## SECTION 8 Exposure controls/personal protection

### 8.1. Control parameters

Engineering measures : Ensure good ventilation of the work station

- 8.1.1. Occupational Exposure Limits : Difluoromethane : France : LEP - VME (8h; mg/m<sup>3</sup>) : 2130  
Difluoromethane : France : LEP - VME (8h; ppm) : 1000

### 8.2. Exposure controls

#### Personal protection :

- Respiratory protection : In the event of insufficient ventilation: Mask with AX canister  
In a confined area : Self-contained breathing apparatus
- Hand protection : Neoprene rubber or PVC gloves
- Eye protection : Safety goggles
- Skin protection : Neoprene rubber or butyl rubber suit.  
Rubber boots.

## SECTION 9 Physical and chemical properties

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

- Physical state : Liquefied gas
- Colour : Colourless
- 9.1.b. Odour : slightly ethereal.
- 9.1.c. Odour threshold : No data
- 9.1.d. pH : Not applicable
- 9.1.e. Melting point / Freezing point : -136 °C
- 9.1.f. Initial boiling point - boiling range : -51.7 °C
- 9.1.g. Flash point : < -50 °C
- 9.1.h. Evaporation rate : No data
- 9.1.i. Flammability : Extremely flammable gas
- 9.1.j. Explosion limits (lower - upper)
  - Explosion limits - lower : 12.7 % (volume)
  - Explosion limits - upper : 33.4 % (volume)
- 9.1.k. Vapour pressure : 16.9 bar at 25 °C
- 9.1.l. Vapour density : 2.98
- 9.1.m. Density : 0.959 g/cm<sup>3</sup> at 25 °C
- 9.1.n. Solubility
  - in water : Insoluble at 25 °C
  - in organic solvents : Soluble in :
    - alcohols

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**SECTION 9 Physical and chemical properties (continued)**

- 9.1.o. Partition coefficient : n-octanol / water : No data
- 9.1.p. Auto-ignition temperature : No data
- 9.1.q. Thermal decomposition : No data
- 9.1.r. Viscosity : Not applicable
- 9.1.s. Explosive Properties : Not explosive material according to EC criteria
- 9.1.t. Oxidising properties : Non oxidizing material according to EC criteria
- 9.2. Other information : -
- Critical temperature : +78.4 °C

**SECTION 10 Stability and reactivity**

- 10.1. Reactivity : -
- 10.2. Chemical stability : Stable at ambient temperature and under normal conditions of use
- 10.3. Possibility of hazardous reactions
- 10.4. Conditions to avoid : May explode or ignite :  
- on contact with hot surfaces and flames
- 10.5. Incompatible materials : - strong oxidizing agents  
- alkali metals  
- alkaline earth metals.  
- metallic powders  
- metallic salts
- 10.6. Hazardous decomposition products : On thermal decomposition (pyrolysis), releases :  
Hydrogen fluoride  
Fluorophosgene  
Carbon oxides (CO, CO<sub>2</sub>)  
Halogenated compounds.

**SECTION 11 Toxicological information**

- 11.1. Information on toxicological effects
- Acute toxicity
- On ingredients
- Difluoromethane : Rat inhalation LC50 [mg/l/4h] : 2158
- Skin corrosion/irritation : Not irritating to skin
- Serious eye damage/irritation : Not irritating to eyes
- Respiratory or skin sensitization : No sensitizing effect is known
- Germ cell mutagenicity : No mutagenic effect
- Carcinogenicity : No carcinogenic effect
- Reproductive toxicity : No teratogenic effect
- STOT-single exposure : No specific data
- STOT-repeated exposure : No specific data
- Aspiration hazard : Not applicable
- Other information : Contact with liquefied gas causes frostbite.  
Contact with liquefied gas may cause severe ocular lesions

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**SECTION 11 Toxicological information (continued)**
**SECTION 12 Ecological information**
**12.1. Toxicity**

**Effects on the aquatic environment** : No information available, however this product is not considered to present any particular risk for the aquatic environment.

**On ingredients**
**12.2. Persistence and degradability**

**Persistence** : Half-life in air : 1472 d

**Biodegradability** : Not readily biodegradable  
5 % biodegradation after 28 days

**12.3. Bioaccumulative potential**

**Octanol/water partition coefficient** : 0.21

**12.4. Mobility in soil** : -

**12.5. Results of PBT and vPvB assessment** : -

**12.6. Other adverse effects**

**Ozone depletion potential** : ODP (R-11=1)=0

\* **Greenhouse effect** : GWP (CO<sub>2</sub>=1) = 675

**SECTION 13 Disposal considerations**
**13.1. Waste treatment methods**
**CONTAMINATED PACKAGING :**

**Destruction/Disposal** : Dispose of at an licensed site

**NOTE** : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal

**SECTION 14 Transport information**

**14.1. UN number** : UN 3252

**14.2. UN proper shipping name** : DIFLUOROMETHANE (REFRIGERANT GAS R 32)

**14.3. Transport hazard class(es)**

**Rail/road (RID/ADR)** : Class : 2

**Sea transport** : Class : 2.1

**Air transport (OACI/IATA)** : Class : 2.1

**Hazard Label(s)** : 2.1



**14.4. Packing group** : Not applicable

**14.5. Environmental hazards** : Not classified as dangerous to the aquatic environment  
Marine pollutant : NO

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## SECTION 14 Transport information (continued)

### 14.6. Special precautions for user

<b>Rail/road (RID/ADR)</b>	: Classification code : 2F Hazard identification number : 23 Tunnel restriction code : (B/D)
<b>Sea transport</b>	: EmS Nr : F-D, S-U Segregation group : -
<b>Air transport (OACI/IATA)</b>	: Passenger aircraft : FORBIDDEN Cargo aircraft: Packing instruction: 200 Quantity: 150 kg

## SECTION 15 Regulatory information

**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture** : Ensure all national/local regulations are observed.

**France** : Classified Installations : applicable  
**Germany :** : WGK (Water-endangerment class) : 1

**15.2. Chemical safety assessment** : -

## SECTION 16 Other information

<b>Further information</b>	: Product for industrial use only For more information regarding the use of this product, please refer to our technical information or contact the sales department in your region
<b>Text of R-Phrases in § 3</b>	: R12 : Extremely flammable.
<b>Text of H-Phrases in § 3</b>	: H220 - Extremely flammable gas H280 - Contains gas under pressure; may explode if heated
<b>* Update</b>	: Modifications are indicated by an asterisk (*)

This sheet complements the technical sheets but does not replace them. The information given is based on our knowledge of the product, at the time of publication. It is given in good faith.

Besides, the attention of the user is drawn to the possible risks incurred by using the product for any other use than that for which it was intended.

In no way does this exempt the user from knowing and applying all the regulations controlling his activity. He alone will take on the responsibility for taking the precautions involved by the use of the product.

The aim of all the mandatory regulations mentioned is just to help the user to fulfil his obligations regarding the use of hazardous products.

This information must not be considered exhaustive. It does not exempt the user from ensuring that other obligations than those mentioned could apply, related to the storage and use of the product, this being his sole responsibility.

**End of document**

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