1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

<table>
<thead>
<tr>
<th>Product name</th>
<th>1-Chloro-1,1-difluoroethane (R142b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical formula</td>
<td>C2H3ClF2</td>
</tr>
<tr>
<td>Company identification</td>
<td>see heading and/or footer</td>
</tr>
<tr>
<td>Emergency phone numbers</td>
<td>see heading and/or footer</td>
</tr>
</tbody>
</table>

2 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance/Preparation</th>
<th>Substance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components/Impurities</td>
<td>Contains no other components or impurities which will influence the classification of the product.</td>
</tr>
<tr>
<td>CAS Nr</td>
<td>75-68-3</td>
</tr>
<tr>
<td>EC Nr (from EINECS)</td>
<td>200-891-8</td>
</tr>
</tbody>
</table>

3 HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Hazards identification</th>
<th>Extremely flammable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dangerous for the ozone layer.</td>
</tr>
<tr>
<td></td>
<td>Liquefied gas</td>
</tr>
</tbody>
</table>

4 FIRST AID MEASURES

Inhalation
- In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness.
- Victim may not be aware of asphyxiation.
- In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea
- and loss of co-ordination.
- Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm
- and rested. Call a doctor. Apply artificial respiration if breathing stopped.

Skin/eye contact
- In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.
- Immediately flush eyes thoroughly with water for at least 15 minutes.
- Obtain medical assistance

Ingestion
- Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards
- Exposure to fire may cause containers to rupture/explose.

Hazardous combustion products
- If involved in a fire the following toxic and/or corrosive flames may be produced by thermal decomposition:
  - Carbonyl fluoride
  - Carbon monoxide
6 ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Evacuate area.
Ensure adequate air ventilation.
Eliminate ignition sources.

Environmental precautions
Try to stop release.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

Clean up methods
Ventilate area.
Keep area evacuated and free from ignition sources until any spilled liquid has evaporated. (Ground free from frost).

7 HANDLING AND STORAGE

Handling and storage
Ensure equipment is adequately earthed.
Suck back of water into the container must be prevented.
Purge air from system before introducing gas.
Do not allow backfeed into the container.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Keep away from ignition sources (including static discharges).
Segregate from oxidant gases and other oxidants in store.
Refer to supplier's container handling instructions.
Keep container below 50°C in a well ventilated place.
8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country

Germany: MAK: 1000 ppm
France: VME: 1000 ppm

Personal protection

Ensure adequate ventilation.
Do not smoke while handling product.
Protect eyes, face and skin from liquid splashes.

9 PHYSICAL AND CHEMICAL PROPERTIES

Melting point -131 °C
Boiling point -9.6 °C
Critical temperature 137 °C
Relative density, gas 3.7 (air=1)
Relative density, liquid 1.2 (water=1)
Vapour Pressure 20°C 2.9 bar(a).
Solubility mg/l water No reliable data available.
Appearance/Colour Colourless gas
Odour Ethereal

Flammability range 6.3-17.9 vol% in air.
Autoignition temperature 632 °C
Other data Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity

Can form explosive mixture with air.
May react violently with oxidants.
Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.
May react with aluminium.

11 TOXICOLOGICAL INFORMATION

General

May cause irritation to the respiratory tract.
12 ECOLOGICAL INFORMATION

General

Covered by the ‘Montreal Protocol’.  

May have damaging effect on ozone layer.

When discharged in large quantities may contribute to the greenhouse effect.

Ozone depletion factor  

0.065 (R11=1)

Global warming factor  

2000 (CO2=1)

13 DISPOSAL CONSIDERATIONS

General

Must not be discharged to atmosphere.

Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor.

Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere.

Do not discharge into any place where its accumulation could be dangerous.

Refer to supplier's waste gas recovery programme.

Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

Proper shipping name  

1-Chloro-1,1-difluoroethane (Refrigerant Gas R 142b)

UN Nr  

2517

Class  

2

ADR/RID Classification code  

2F

ADR/RID Hazard Nr  

23

Packing group  

None

Labelling ADR  

Label 2.1: flammable gas

IMDG EmS codes  

2-07

IMDG Marine pollutant  

No

IATA passenger packing instruction  

Forbidden

IATA passenger max. quantity/pack  

None

IATA cargo packing instruction  

200

IATA cargo max. quantity/pack  

150kg

Other transport information  

Avoid transport on vehicles where the load space is not separated from the driver's compartment.

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting product containers ensure that they are firmly secured and:
- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- there is adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548
Not included in Annex I.

EC Classification
Proposed by the industry
F+;R12[N;R59]

-Symbols
F+: Extremely flammable
N: Dangerous for the environment

Labelling of cylinders
-Symbols
Label 2.1: flammable gas
-Risk phrases
R12 Extremely flammable.
R59 Dangerous for the ozone layer.

-Safety phrases
S9 Keep container in well ventilated place.
S16 Keep away from ignition sources - No smoking.
S33 Take precautionary measures against static discharges.
S59 Refer to manufacturer/supplier for information on recovery/recycling
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Users of breathing apparatus must be trained.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

End of document.
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