



**Gas (liquefied);
Extremely flammable;
Hazardous product for the environment;
In case of decomposition, releases dangerous products.**

HEALTH EFFECTS

INHALATION

At high concentrations, the effects may include: feelings of intoxication; risk of narcosis; risk of cardiac arrhythmia; risk of asphyxia by lack of oxygen.

EYES CONTACT

Gas---Risk of moderate consequences experimentally observed or under certain conditions.

**Liquefied gas---Severe eye irritation, watering, redness and swelling of the eyelids.
Risk of burns (frostbite).**

SKIN CONTACT

Gas---Negligible

**Liquefied gas---Cold sensation followed by redness of the skin.
Risk of frostbite.**

INGESTION

Impossible risk (gas).

4. FIRST AID MEASURES

INHALATION

Remove the subject from the contaminated area. If necessary, give the subject oxygen or cardiopulmonary resuscitation. Consult with a physician in case of respiratory and nervous symptoms.

EYES CONTACT

Keep eyelids open to allow evaporation of product. Flush eyes with running water for several minutes, while keeping the eyelids wide open. Consult with an ophthalmologist in case of persistent pain.

SKIN CONTACT

In case of contact, allow product to evaporate or rinse the skin with lukewarm running water. Consult with a physician in case of persistent pain or redness.

INGESTION



Ingestion is not considered a potential route of exposure.

5. FIRE-FIGHTING MEASURES

COMMON EXTINGUISHING MEANS

Powder, foam, AFFF, CO₂

NOTE: DO NOT USE WATER, BUT FOAM MAY BE USED.

SPECIFIC HAZARDS

Exposure to fire may cause containers to rupture/explode.

PROTECTIVE MEASURES IN CASE OF INTERVENTION

- Evacuate all non-essential personnel.
- Intervention only by capable personnel who are trained and aware of the hazards of the product.
- Wear self contained breathing apparatus when in close proximity or in confined spaces.
- When intervention in close proximity wear full protective acid resistant suit.
- After intervention, proceed to clean the equipment (take a shower, remove clothing carefully, clean and check).

OTHER PRECAUTIONS

- If safe to do so, remove the exposed containers, or cool with large quantities of water.
- Approach from upwind.
- Stay at safe distance in a protected location sheltered from possible projectiles.
- Never try to extinguish a leak of burning gas which cannot be stopped or controlled.
- Never spray water onto a spillage of liquid gas.
- Never approach containers which have been exposed to fire, without cooling them sufficiently.
- Avoid propagating the fire, when directing the extinguishing means in a jet on the surface of the burning liquid.
- After the fire, proceed rapidly to clean the surfaces exposed to the fumes in order to limit the damage to the equipment.
- As for any fire, ventilate and clean the rooms before re-entry.
- Use an explosimeter/gas detector/oxygen analyzer to determine the area of danger.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

- Wear self-contained breathing apparatus when entering area unless atmosphere is
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- 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

- Carry out all operations in closed piping circuits and equipment.
- Operate in a well-ventilated area.
- Prevent any product decomposition from contacting hot spots.
- Use only equipment and material which are compatible with the product.
- Keep away from ignition and heat sources.
- Keep away from reactive products.
- Do not use tools that produce sparks.

STORAGE

- Keep in a hermetically sealed container.
- In a ventilated, cool area.
- Protect from direct sunlight.
- Keep away from ignition and heat sources.
- Keep away from reactive products.

OTHER PRECAUTIONS

- No open flames or sparks, no smoking.
- Provide electrical equipment safe for hazardous locations.
- Grounded equipment.
- Prevent electrostatic discharges.
- Warn people about the dangers of the product.

PACKAGING



Ordinary steel

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

- Provide local ventilation suitable for the emission risk.
- Follow the protective measures given in section 7.
- Maintain employee exposures to levels below the applicable exposure limits.

AUTHORIZED LIMIT VALUES

HCFC-142b
SAEL 2001
TWA = 1.000 ppm

RESPIRATORY PROTECTION

Self-contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Colour:	Colorless gas	Odor:	Ethereal
Melting point:	-131°C	Boling point:	-9.2°C
Critical temperature:	136.45°C	Vapour pressure (20°C):	2.9 bar (a)
Relative density (gas);	3.7 (air=1)	Relative density (liquid):	1.2 (water=1)
Autoignition temperature:	632°C	Flammability range:	6.3-17.9 vol% in air

Solubility mg/1 water: No reliable data available.

Other data: Gas/vapour heavier than air. It may accumulate in confined spaces, particularly at or below ground level.

10. STABILITY AND REACTIVITY

STABILITY

- Stable under certain conditions (see below).
- Decomposition produces dangerous gases, upon contact with flames or hot metallic surfaces.

CONDITIONS TO AVOID



- Heat/Sources of heat
- Naked flames, sparks.

MATERIALS TO AVOID

- Alkaline-earth metals
- Metallic powders
- Alkaline metals and their alloys

HAZARDOUS DECOMPOSITION PRODUCTS

- Hydrogen fluoride
- Hydrochloric acid
- Phosgene
- Fluorophosgene

OTHER INFORMATION

Contact with strong bases or alkaline materials may provoke violent reactions or explosions. The vapor is heavier than air, disperses at ground level.

11. TOXICOLOGICAL INFORMATION

GENERAL

The product 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

UN Number: 2517 IATA Class: 2.1
Hazard label: FLAMMABLE GAS PSN: 1-CHLORO-1, 1-DIFLUOROETHANE

15. REGULATORY INFORMATION

EC LABELING

- Name of dangerous product: 1-chloro-1, 1-difluoroethane
- Labeling according to Article 6 of Dir. 92/32/EEC.

Symbols	F+	Extremely flammable
Phrases R	12	Extremely flammable
Phrases S	16	Keep away from sources of ignition --- No smoking.
- Labeling following Dir. 98/98/EC – Section 5.2.2.2

Symbols	N	Dangerous for the environment
Phrases R	59	Dangerous for the ozone layer.

16. OTHER INFORMATION

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product that conforms to the specification, unless otherwise stated. In the case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and environment.

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Indicates updated section.
End of MSDS