

Safety Data Sheet

Product : R152a (1,1-Difluoroethane)

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MSDS Nr : 302-00-0013BOC(A)

Version : 1.03

Date : 17/11/2003

Replaces version dated : 27/07/1994

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name	R152a (1,1-Difluoroethane)
Chemical formula	C2H4F2
Company identification	see heading and/or footer
Emergency phone numbers	see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation	Substance.
Components/Impurities	Contains no other components or impurities which will influence the classification of the product.
CAS Nr	75-37-6
EC Nr (from EINECS)	200-866-1

3 HAZARDS IDENTIFICATION

Hazards identification	Liquefied gas Extremely flammable
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4 FIRST AID MEASURES

Inhalation	In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. 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	Immediately flush eyes thoroughly with water for at least 15 minutes. In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. 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/explode.
Hazardous combustion products	If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Carbonyl fluoride Carbon monoxide Hydrogen fluoride

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Suitable extinguishing media

All known extinguishants can be used.

Specific methods

If possible, stop flow of product.

Move away from the container and cool with water from a protected position.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

Special protective equipment for fire fighters

Use self-contained breathing apparatus and chemically protective clothing.

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.

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

UK: 1000ppm

Personal protection

Ensure adequate ventilation.

Do not smoke while handling product.

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9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	66
Melting point	-117 °C
Boiling point	-26 °C
Critical temperature	113 °C
Relative density, gas	2.3 (air=1)
Relative density, liquid	0.9 (water=1)
Vapour Pressure 20°C	5.2 bar(a).
Solubility mg/l water	2 g/l at 25°C
Appearance/Colour	Colourless gas
Odour	Sweetish
Flammability range	5.1 - 17.1 vol% in air.
Autoignition temperature	455 °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.
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11 TOXICOLOGICAL INFORMATION

General	In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. May produce irregular heart beat and nervous symptoms.
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12 ECOLOGICAL INFORMATION

General	When discharged in large quantities may contribute to the greenhouse effect.
Global warming factor	140 (CO ₂ =1)

13 DISPOSAL CONSIDERATIONS

General	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
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atmosphere.

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

Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

Proper shipping name	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152a)
UN Nr	1030
Class	2.1
ADR/RID Classification code	2F
ADR/RID Hazard Nr	23
Packing group	None
Labelling ADR	Label 2.1: flammable gas
IMDG EmS codes	F-D, S-U
IMDG Marine pollutant	No
IATA passenger packing instruction	Forbidden
IATA passenger max. quantity/pack	Forbidden
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	F+;R12
-Symbols	F+: Extremely flammable
Labelling of cylinders	Label 2.1: flammable gas
-Symbols	

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-Risk phrases

R12 Extremely flammable.

-Safety phrases

S9 Keep container in well ventilated place.

S16 Keep away from ignition sources - No smoking.

S33 Take precautionary measures against static discharges.

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

Contact with liquid may cause cold burns/frost bite.

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.

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