

Safety Data Sheet

Product :

R409A

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MSDS Nr : 307-25-2001BOC(A)

Version : 1

Date : 15/08/2003

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name	R409A
Company identification	see heading and/or footer
Emergency phone numbers	see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation	Preparation
Components/Impurities	Contains the following components: 60% w/w Chlorodifluoromethane (R22) {N;R59} (EINECS No. 200-871-9)/25% w/w Chlorotetrafluoroethane (R124) {N;R59} {EINECS No. 220-629-6}/15% w/w Chlorodifluoroethane (R142 b) {F+;R12;N;R59} {EINECS No. 200-891-8}
EC Nr (from EINECS)	Not applicable for preparations

3 HAZARDS IDENTIFICATION

Hazards identification	Liquefied gas In high concentrations may cause asphyxiation.
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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	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/explode. Non flammable
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

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	Phosgene
	Hydrogen chloride
	Hydrogen fluoride
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.
Special protective equipment for fire fighters	Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.
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	Suck back of water into the container must be prevented. 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. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.
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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country	UK: Chlorodifluoromethane (R22) - LTEL:1000ppm (EH40/2002) UK: Chlorotetrafluoroethane (R124) - LTEL: 1000ppm France: Chlorodifluoroethane (R142 b) - VME:1000ppm Germany:Chlorodifluoroethane (R142 b) - MAK:1000ppm
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Personal protection

Ensure adequate ventilation.

Do not smoke while handling product.

Protect eyes, face and skin from contact with product.

9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling point	-34.2 °C
Critical temperature	107 °C
Relative density, gas	3.4 (air=1)
Relative density, liquid	1.2 (water=1)
Vapour Pressure 20°C	7.3 bar
Solubility mg/l water	No reliable data available.
Appearance/Colour	Colourless gas
Odour	Ethereal
	Poor warning properties at low concentrations.
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	Stable under normal conditions. Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.
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11 TOXICOLOGICAL INFORMATION

General	Chlorotetrafluoroethane (R124) - May produce irregular heart beat and nervous symptoms. Chlorodifluoromethane (R22) - May produce irregular heart beat and nervous symptoms. Chlorodifluoroethane (R142 b) - May produce irregular heart beat and nervous symptoms.
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12 ECOLOGICAL INFORMATION

General	Chlorodifluoromethane (R22) - May have damaging effect on ozone layer./Covered by the 'Montreal Protocol'./When discharged in large quantities may contribute to the greenhouse effect. Chlorotetrafluoroethane (R124) - May have damaging effect on ozone layer./Covered by the 'Montreal Protocol'./When discharged in large quantities may contribute to the greenhouse effect.
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Chlorodifluoroethane (R142 b) - May have damaging effect on ozone layer./Covered by the 'Montreal Protocol'./When discharged in large quantities may contribute to the greenhouse effect.

Ozone depletion factor

0.05 (R11=1)

Global warming factor

1440 (CO2=1)

13 DISPOSAL CONSIDERATIONS

General

Must not be discharged 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

LIQUEFIED GAS, N.O.S.

UN Nr

3163

Class

2.2

ADR/RID Classification code

2A

ADR/RID Hazard Nr

20

Labelling ADR

Label 2.2: non flammable non toxic gas

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 applicable for preparations

EC Classification

N;R59

-Symbols

N: Dangerous for the environment

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Labelling of cylinders

-Symbols

Label 2.2: non flammable non toxic gas

-Risk phrases

R59 Dangerous for the ozone layer.

-Safety phrases

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.

Contact with liquid may cause cold burns/frost bite.

Asphyxiant in high concentrations.

Keep container in well ventilated place.

Do not breathe the gas.

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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