

Safety Data Sheet

Product :

R744

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MSDS Nr : 300-00-2008BOC(A)

Version : 1

Date : 13/12/2005

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name	R744
Chemical formula	CO2
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 Carbon dioxide {EINECS No. 204-696-9}
CAS Nr	124-38-9
EC Nr (from EINECS)	204-696-9

3 HAZARDS IDENTIFICATION

Hazards identification	Liquefied gas In high concentrations may cause asphyxiation.
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4 FIRST AID MEASURES

Inhalation	Low concentrations of CO2 cause increased respiration and headache. 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.
Ingestion	Obtain medical assistance 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	None
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.

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Special protective equipment for fire fighters

Use self-contained breathing apparatus.

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.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country

UK: Carbon dioxide - LTEL: 5000ppm; STEL: 15000ppm (EH40/2005)

Personal protection

Ensure adequate ventilation.

Protect eyes, face and skin from contact with product.

9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight

44

Melting point

-56.6 °C

Boiling point

(sublimation) -78.5 °C

Critical temperature

31 °C

Relative density, gas

1.52 (air=1)

Relative density, liquid

0.77 (water=1)

Vapour Pressure 20°C

57.2 bar

Solubility mg/l water

2000 mg/l

Appearance/Colour

Colourless gas

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Odour No odour warning properties.
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.

11 TOXICOLOGICAL INFORMATION

General In high concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

12 ECOLOGICAL INFORMATION

General When discharged in large quantities may contribute to the greenhouse effect.
Can cause frost damage to vegetation.

Ozone depletion factor 0 (R11=1)

Global warming factor 1 (CO2=1)

13 DISPOSAL CONSIDERATIONS

General To atmosphere in a well ventilated place.
Discharge to atmosphere in large quantities should be avoided.
Do not discharge into any place where its accumulation could be dangerous.
Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

Proper shipping name CARBON DIOXIDE
UN Nr 1013
Class 2
ADR/RID Classification code 2A
ADR/RID Hazard Nr 20
Packing group None
Labelling ADR Label 2.2: non flammable non toxic gas
IMDG EmS codes F-C, S-V
IMDG Marine pollutant No
IATA passenger packing instruction 200
IATA passenger max. quantity/pack 75kg

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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	Not classified as dangerous preparation.
EC Labelling (Symbols, R&S phrases)	No EC labelling required.
Labelling of cylinders	
-Symbols	Label 2.2: non flammable non toxic gas

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

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.

Contact with liquid may cause cold burns/frost bite.

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.

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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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