MATERIAL SAFETY DATA SHEET

FOR LIQUID CARBON DIOXIDE USED IN FIRE EXTINGUISHERS

1] IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY
Product name: Carbon Dioxide
Chemical formula: CO_2
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 Liquefied Carbon Dioxide {EINECS No. 204-696-9}
UN Nr. 1044
CAS Nr: 00124-38-9
EC Nr (from EINECS): 204-696-9

3] HAZARDS IDENTIFICATION
Hazards identification: Liquefied gas. Pressurised gas cylinder
In high concentrations may cause asphyxiation.

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. 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: 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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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
Odour: No odour warning properties.
Other data: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

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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 (CO_2=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
Fire extinguisher with compressed or liquefied gas.
Liquefied Carbon Dioxide. Pressurised Carbon Dioxide gas cylinder
UN Nr: 1044
Class: 2.2
CAS 00124-38-9
EEC204
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
IATA cargo packing instruction: 200
IATA cargo max. quantity/pack: 150kg

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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.
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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