

SAFETY DATA SHEET

Product Trade Name:
CARBON DIOXIDE, LIQUIFIED

Revision Date:
20-Feb-2018

Revision Number:
11

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Trade Name:
CARBON DIOXIDE, LIQUIFIED

Synonyms

None

Chemical Family

Not applicable

Internal ID Code

HM000152

Recommended use and restrictions on use

Application

Fluid

Uses advised against

No information available

Manufacturer's Name and Contact Details

Manufacturer/Supplier

Halliburton Energy Services
14th Floor, CitiBank Tower, Al-Qutayat Street
Dubai, UAE
Telephone Number : +971 43036666

Additional Information

Prepared By

Chemical Stewardship
e-mail: fdunexchem@halliburton.com

Emergency Telephone Number

1-760-476-3959
Global Incident Response Access Code: 334305
Contract Number: 14012

2. HAZARDS IDENTIFICATION

Classification System

This SDS was prepared in accordance with United Nations "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" and its revisions.

Classification

Gases under pressure

Liquefied gas - H280

Hazard Pictograms

**Signal Word**

Warning

Hazard Statements

H280 - Contains gas under pressure; may explode if heated

Precautionary Statements**Prevention**

None

Response

None

Storage

P410 + P403 - Protect from sunlight. Store in a well-ventilated place

Disposal

None

Contains**Substances**

Carbon dioxide

CAS Number

124-38-9

Additional Information

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substances | CAS Number | PERCENT (w/w) | GHS Classification |
|----------------|------------|---------------|---------------------|
| Carbon dioxide | 124-38-9 | 60 - 100% | Press. Gas 1 (H280) |

4. FIRST AID MEASURES**First-aid Measures****Inhalation**

If inhaled, move victim to fresh air and seek medical attention.

Skin

For exposure to liquid, immediately warm frostbite area with warm water (not to exceed 105 F or 41 C). In case of massive exposure, remove clothing while showering with warm water. Get medical attention.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion

Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Most important symptoms and effects, both acute and delayed

May cause freeze burns. Reduces oxygen available for breathing.

Indication of any immediate medical attention and special treatment needed**Notes to Physician**

Not Applicable

5. FIRE FIGHTING MEASURES**Suitable Extinguishing Media**

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

Specific hazards arising from the chemical

None anticipated

Special protective actions for fire-fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment. Evacuate all persons from the area.

Environmental Precautions

Prevent from entering sewers, waterways, or low areas.

Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Ventilate area.

Additional Information

See Section 8 and 13 for additional information.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with eyes, skin, or clothing.

Conditions for safe storage, including any incompatibilities

Store in a well ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Limits**

| Substances | CAS Number | United Arab Emirates | Bahrain | Kuwait | Gulf Cooperation Council |
|----------------|------------|--|--|----------------|--|
| Carbon dioxide | 124-38-9 | TWA: 5000 ppm TWA: 9000 mg/m ³ STEL: 30000 ppm STEL: 45000 mg/m ³ | TWA: 5000 ppm TWA: 9000 mg/m ³ STEL: 30000 ppm STEL: 45000 mg/m ³ | Not applicable | TWA: 5000 ppm TWA: 9000 mg/m ³ STEL: 30000 ppm STEL: 45000 mg/m ³ |

Appropriate engineering controls

Use in a well ventilated area.

Individual protection measures, such as personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

Not normally necessary.

In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection

Use gloves which are suitable for the chemicals present in this product as well as other environmental factors in the workplace.

Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron, rain jacket, pants or coverall, as appropriate, to prevent skin contact.

Eye Protection

Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles, Face-shield.

Other Precautions

None known.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical State:**

Liquid

Color

Colorless

Odor:

Odorless

Odor Threshold:

No information available

pH:

No data available

Specific Gravity

1.01

Freezing Point/Range (°C):

No information available

Pour Point/Range (C):

No information available

Boiling Point/Range (C):

No information available

Flash Point/Range (°C):

No data available

Flash Point Method:

Not determined

Flammability Limits in Air - Lower (%):

No information available

Flammability Limits in Air - Upper (%):

No information available

Autoignition Temperature (°C):

No information available

Evaporation Rate (Butyl Acetate=1):

No information available

Vapor Pressure @ 20 C (mmHg):

No information available

Vapor Density (Air=1):

No information available

Water Solubility

Soluble in water

Decomposition Temperature (C):

No information available

Viscosity, Dynamic @ 20 C (centipoise):

No information available

Viscosity, Kinematic @ 20 C (centistokes):

No information available

Partition Coefficient/n-Octanol/Water:

No information available

Molecular Weight (g/mole):

44.01

10. STABILITY AND REACTIVITY

Reactivity

Not expected to be reactive.

Chemical Stability

Stable

Possibility of hazardous reactions

Will Not Occur

Conditions to Avoid

None anticipated

Incompatible materials

None known.

Hazardous decomposition products

None known.

Additional Guidelines

Not Applicable

11. TOXICOLOGICAL INFORMATION**Information on Toxicological Effects****Acute Toxicity****Inhalation**

Reduces oxygen available for breathing. May cause increase in respiration rate.

Eye Contact

Contact with liquid causes frostbite.

Skin Contact

Contact of material on skin may result in frostbite.

Ingestion

Causes burns of the mouth, throat and stomach.

Chronic Effects/Carcinogenicity

No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Toxicology data for the components

| Substances | CAS Number | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|----------------|------------|-------------------|-------------------|-------------------|
| Carbon dioxide | 124-38-9 | No data available | No data available | No data available |

| Substances | CAS Number | Skin corrosion/irritation |
|----------------|------------|---------------------------|
| Carbon dioxide | 124-38-9 | Not applicable. |

| Substances | CAS Number | Serious eye damage/irritation |
|----------------|------------|-------------------------------|
| Carbon dioxide | 124-38-9 | Not applicable |

| Substances | CAS Number | Skin Sensitization |
|----------------|------------|--------------------|
| Carbon dioxide | 124-38-9 | Not applicable |

| Substances | CAS Number | Respiratory Sensitization |
|----------------|------------|---------------------------|
| Carbon dioxide | 124-38-9 | Not applicable |

| Substances | CAS Number | Mutagenic Effects |
|----------------|------------|--------------------------|
| Carbon dioxide | 124-38-9 | No information available |

| Substances | CAS Number | Carcinogenic Effects |
|----------------|------------|--------------------------|
| Carbon dioxide | 124-38-9 | No information available |

| Substances | CAS Number | Reproductive toxicity |
|----------------|------------|--|
| Carbon dioxide | 124-38-9 | No data of sufficient quality are available. |

| Substances | CAS Number | STOT - single exposure |
|----------------|------------|---|
| Carbon dioxide | 124-38-9 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | STOT - repeated exposure |
|----------------|------------|---|
| Carbon dioxide | 124-38-9 | No significant toxicity observed in animal studies at concentration requiring classification. |

| Substances | CAS Number | Aspiration hazard |
|----------------|------------|-------------------|
| Carbon dioxide | 124-38-9 | Not applicable |

12. ECOLOGICAL INFORMATION

Toxicity

| Substances | CAS Number | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Toxicity to Invertebrates |
|----------------|------------|--------------------------|--|----------------------------|--|
| Carbon dioxide | 124-38-9 | No information available | LC50 (1h) 240 mg/L (Trout) LC50 (96h) 35 mg/L (Oncorhynchus mykiss) LC51 (12h) 60-240 mg/L (Oncorhynchus mykiss) | No information available | Heart rate and pH changes (30m) 2% (Daphnia magna) |

Persistence and degradability

| Substances | CAS Number | Persistence and Degradability |
|----------------|------------|-------------------------------|
| Carbon dioxide | 124-38-9 | Not applicable |

Bioaccumulation potential

| Substances | CAS Number | Bioaccumulation |
|----------------|------------|-------------------|
| Carbon dioxide | 124-38-9 | 0.83 (calculated) |

Mobility in soil

| Substances | CAS Number | Mobility |
|----------------|------------|--------------------------|
| Carbon dioxide | 124-38-9 | No information available |

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal methods

Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

Other Information

No information available

14. TRANSPORT INFORMATION

UN Number

UN2187

UN proper shipping name:

Carbon Dioxide, Refrigerated Liquid

Transport Hazard Class(es):

2.2

Packing Group:

Not applicable

Environmental Hazards:

Not applicable

Special Precautions for User

None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION**Regulatory Information:**

This SDS was prepared in accordance with United Nations "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" and its revisions.

NFPA Ratings:

Health 0, Flammability 0, Reactivity 0

16. OTHER INFORMATION**Key literature references and sources for data**www.ChemADVISOR.com/**Revision Date:**

20-Feb-2018

Revision Note

SDS sections updated:

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Disclaimer Statement

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End of Safety Data Sheet