

## CARBON DIOXIDE - Compressed & Liquefied Gas

### Section

1

#### IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

##### 1.1 Product identifier

Trade name : CARBON DIOXIDE, Compressed & Liquefied Gas(CO<sub>2</sub>)  
SDS Nr : AL062  
Chemical formula : CO<sub>2</sub>

##### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : Industrial and professional. Perform risk assessment prior to use. Test gas / Calibration gas. Laboratory use Contact supplier for more uses information  
Use : Beverage product dispensing. Freezing applications. Refrigerant. Shielding gas.

##### 1.3 Details of the supplier of the safety data sheet

Company identification : Gee Gee Kay Pvt. Ltd.  
No. 3/117, Saminatham Village,  
Bypass to Puthiamputhur road,  
Tuticorin - 628 402.

1.4 Emergency telephone number : +91 461 295 1330

### Section

2

#### HAZARDS IDENTIFICATION

##### 2.1 Classification of the substance or mixture

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

Physical hazards : Gases under pressure - Refrigerated liquefied gas -  
Warning - (CLP :Press. Gas) - H281

Classification EC 67/548 or EC 1999/45 : Not classified as dangerous substance/mixture.

##### 2.2 Label elements

Labelling Regulation EC 1272/2008 (CLP)

##### **Hazard pictograms**

Hazard pictograms code : GHS04  
Signal word : Warning  
Hazard statements : H281 - Contains refrigerated gas; may cause cryogenic burns or injury

##### **Precautionary statements**

Prevention : P282 - Wear cold insulating gloves, face shield, eye protection.  
Response : P336+P315 - Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice / attention.  
Storage : P403 - Store in a well-ventilated place.

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## Section

3

## COMPOSITION / INFORMATION ON INGREDIENTS

**3.1 Substance / 3.2. Mixture**

Substance.

Substance name	Contents	CAS No	EC No	Annex No	Classification
Carbon dioxide	100 %	124-38-9	204-696-9	-	Not classified (DSD/DPD) Liq. Gas (H280)

Contains no other components or impurities which will influence the classification of the product.

- 1) Listed in Annex IV / V REACH, exempted from registration.
- 2) Registration deadline not expired.
- 3) Registration not required: Substance manufactured or imported  
<1t/y Full text of R-phrases see chapter 16. Full text of H-statements see chapter 16

## Section

4

## FIRST AID MEASURES

**4.1 Description of first aid measures****FIRST AID MEASURES**

**Inhalation :** In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/ consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO<sub>2</sub> cause increased respiration and headache. 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.

**Skin contact :** Adverse effects not expected from this product.

**Eye contact :** Adverse effects not expected from this product.

**Ingestion :** Not expected to present a significant ingestion hazard under anticipated conditions of normal use.

**4.2 Most important symptoms and effects, both acute and delayed**

Refer to section 11.

**4.3 Indication of any immediate medical attention and special treatment needed : None**

## Section

5

## FIRE-FIGHTING MEASURES

**5.1 Extinguishing media**

Extinguishing media

Suitable extinguishing media : All known extinguishants can be used.

**5.2 Special hazards arising from the substance or mixture**

Specific hazards : Exposure to fire may cause containers to rupture/explode.

Hazardous combustion products : None.

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### 5.3 Advice for fire-fighters

Specific methods	:	Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains. If possible, stop flow of product. Move away from the container and cool with water from a protected position. If leaking do not spray water onto container. Water surrounding area (from protected position) to contain fire.
Special protective equipment for fire fighters	:	In confined space use self-contained breathing apparatus.
Flammable class	:	Non flammable.

## Section 6

### ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Try to stop release.
Evacuate area.	:	Use protective clothing. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.

#### 6.2 Environmental precautions

Try to stop release.	:	None.
	:	Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

#### 6.3 Methods and material for containment and cleaning up

Clean up methods	:	None.
6.4 Reference to other sections	:	Ventilate area.
	:	See also sections 8 and 13.

## Section 7

### HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Safe use of the product	:	Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Only experienced and properly instructed persons should handle gases under pressure. The product must be handled in accordance with good industrial hygiene and safety procedures. Do not smoke while handling product. Ensure the complete gas system was (or is regularly) checked for leaks before use.
Safe handling of the gas receptacle	:	Refer to supplier's container handling instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders.

Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminants particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to transfer gases from one cylinder/container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. General : Containers, which contain or have contained flammable or explosive substances, must not be inerted with liquid carbon dioxide. Potential production of solid CO<sub>2</sub> particles must be ruled out. In order to rule out potential electrostatic discharge production, the system must be adequately grounded.

#### Handling

- : 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.

#### **7.2 Conditions for safe storage, including any incompatibilities**

- : Keep away from combustible materials. Keep container below 50°C in a well ventilated place. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. Stored containers should be periodically checked for general condition and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition.

#### Storage

- : Keep container below 50°C in a well ventilated place.

#### **7.3 Specific end use(s)**

- : None.

**8.1 Control parameters**

Occupational Exposure  
Limits Carbon dioxide

Value 8h (CZ) [mg/m <sup>3</sup> ]	: 9000
ILV (EU) - 8 H - [mg/m <sup>3</sup> ]	: 9000
ILV (EU) - 8 H - [ppm]	: 5000
TLV® -TWA [ppm]	: 5000
TLV® -STEL [ppm]	: 30000
AGW (8h) - Germany [mg/m <sup>3</sup> ] TRGS 900	: 9100
AGW (8h) - Germany [ppm] TRGS 900	: 5000
MAK (AU) Tagesmittelwert (ml/m <sup>3</sup> )	: 5000
MAK (AU) Tagesmittelwert (mg/m <sup>3</sup> )	: 9000
MAK (AU) Kurzzeitwerte (ml/m <sup>3</sup> )	: 10000
MAK (AU) Kurzzeitwerte (mg/m <sup>3</sup> )	: 18000
VLA-ED - Spain [ppm]	: 5000
VLA-ED - Spain [mg/m <sup>3</sup> ]	: 9150
VLA-EC - Spain [ppm]	: 15000
VLA-EC - Spain [mg/m <sup>3</sup> ]	: 27400
NGV - [ppm]	: 5000
NGV - [mg/m <sup>3</sup> ]	: 9000
KTV - [ppm]	: 10
KTV - [mg/m <sup>3</sup> ]	: 10
HTP-vården (FI) - 8 H - [ppm]	: 5000
HTP-vården (FI) - 8 H - [mg/m <sup>3</sup> ]	: 9100
Grænserværdier (DK) (ppm)	: 5000
Grænserværdier (DK) (ppm)	: 9000
Grænserværdier (DK)	: 9000
GV Value Limit (Norway) [ppm]	: 5000
GV Value Limit (Norway) [mg/m <sup>3</sup> ]	: 9000
8-Hour TWA (PL) (NDS) (mg/m <sup>3</sup> )	: 9000
15-Minute STEL (PL)(NDSch) (mg/m <sup>3</sup> )	: 27000
Valori Limite di Soglia (IT) 8-Hore [ppm]	: 5000
Valori Limite di Soglia (IT) 8 ore [mg/m <sup>3</sup> ]	: 9000
TLV-TWA (Belgium) (ppm)	: 5000
TLV-STEL (Belgium) (ppm)	: 30000
Value 15min. (CZ) [mg/m <sup>3</sup> ]	: 45000

DNEL	: Derived no effect level : None available.
PNEC	: Predicted no effect : None available concentration

**8.2 Exposure controls**

8.2.1 Appropriate engineering	: Systems under pressure should be regularly checked for leakages. controls Provide adequate general and local exhaust ventilation. Consider work permit system e.g. for maintenance activities.
8.2.2 Individual protection measures, (e.g. personal protective equipment)	: A risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Wear safety glasses with side shields Wear leather safety gloves and safety shoes when handling cylinders.
Personal protection	: Ensure adequate ventilation. Protect eyes, face and skin from liquid splashes.
8.2.3 Environmental exposure	: Refer to local regulations for restriction of emissions to the atmosphere. See section 13 for controls specific methods for waste gas treatment.

Continue ...

## Section 9

### PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

##### Appearance

Physical state at 20°C / 101.3kPa	: Liquefied gas.
Colour	: Colourless.
Odour	: No odour warning properties.
Odour threshold	: Odour threshold is subjective and inadequate to warn for overexposure.
pH value	: Not applicable for gas-mixtures.
Molar mass [g/mol]	: Not applicable for gases and gas-mixtures.
Melting point [°C]	: -56.6
Boiling point [°C]	: -78.5 (s)
Critical temperature [°C]	: 30
Flash point [°C]	: Not applicable for gas-mixtures.
Evaporation rate (ether=1)	: Not applicable for gas-mixtures.
Flammability range [vol% in air]	: Non flammable.
Vapour pressure [20°C]	: 57.3 bar Not applicable.
Relative density, gas (air=1)	: 1.52
Relative density, liquid (water=1)	: 1.03
Solubility in water [mg/l]	: 2000
Partition coefficient n-octanol/water	: Not applicable for gas-mixtures.
Viscosity at 20°C [mPa.s]	: Not applicable.
Explosive Properties	: Not applicable.

#### 9.2 Other information

Other data	: Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.
Molecular weight	: 44

## Section 10

### STABILITY AND REACTIVITY

10.1. Reactivity	: No reactivity hazard other than the effects described in sub-sections below. Stability and reactivity : Stable under normal conditions. Liquid spillages can cause embrittlement of structural materials.
10.2. Chemical stability	: Stable under normal conditions.
10.3. Possibility of hazardous reactions	: None.
10.4. Conditions to avoid	: None.
10.5. Incompatible materials	: None.
10.6. Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.



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