

SAFETY DATA SHEET

Carbon Dioxide, Refrigerated Liquid

Product: Liquid Carbon Dioxide MSDS NR: KS-LCO2-013 VERSION 1 .01 DATED 31/05/2015 PAGE 1/2

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name

Carbon dioxide, refrigerated liquid.

Trade name

Carbon dioxide liquified
EC No (from EINECS): 204-696-9
CAS No: 124-38-9
Index-Nr. -

Chemical formula CO₂ **REACH**

Registration number:

Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

Known uses

Not known.

Company identification

Karim & Sons
69-A, Timber Pond, M.A.Jinnah
Road, Keamari,
Karachi-75700
Phone: +92 213 2851790
+92 213 2850005
E-Mail info@karimsons.net

2 HAZARDS IDENTIFICATION Classification

of the substance or mixture

Classification acc. to Regulation (EC) No 1272/2008/EC (CLP/GHS)

Press. Gas - Contains refrigerated gas; may cause cryogenic burns or injury.

Classification acc. to Directive 67/548/EEC & 1999/45/EC

Not classified as hazardous to health.
Asphyxiant in high concentrations.

Risk advice to man and the environment

Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite.

Label Elements

- Labelling Pictograms



- Signal word

Warning

- Hazard Statements

H281 Contains refrigerated gas; may cause cryogenic burns or injury.
EIGA-As Asphyxiant in high concentrations.

- Precautionary Statements

Precautionary Statement Prevention

P282 Wear cold insulating gloves/face shield/eye protection.

Precautionary Statement Reaction

P336+P315 Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Precautionary Statement Storage

P403 Store in a well-ventilated place.

Precautionary Statement Disposal

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance.

Components/Impurities

Carbon dioxide, refrigerated liquid. **CAS No:** 124-38-9

Index-Nr.: -

EC No (from EINECS): 204-696-9

9 REACH Registration number:

Listed in Annex IV/V of Regulation (EC) No 1907/2006 (REACH), exempted from registration.

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

4 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 CO₂ 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.

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 container away or cool with water from a protected position.

Special protective equipment for fire fighters

In confined space 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

Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified

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equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Check regularly tightness of the plant. Refer to supplier's handling instructions.

Storage

Secure cylinders to prevent them falling. Keep container below 50°C in a well ventilated place. Observe "Technische Regeln Druckgas (TRG) 280 Ziffer 5"

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value

Value type	value	Note
Germany - AGW	5.000 ppm	TRGS 900

Personal protection

Ensure adequate ventilation.

9 PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance/Colour: Colourless liquid.

Important information on environment, health and safety

Molecular weight: 44 g/mol

Melting point: -56,6 °C

Sublimation point: -78,5 °C

Critical temperature: 31 °C

Autoignition temperature: Not applicable.

Flammability range: Not applicable.

Relative density, gas: 1,52

Relative density, liquid: 0,82

Solubility mg/l water: 2000 mg/l

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

No known toxicological effects from this product.

12 ECOLOGICAL INFORMATION

General

When discharged in large quantities may contribute to the greenhouse effect.

Global Warming Potential GWP

1

13 DISPOSAL CONSIDERATIONS

General

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

EWC Nr. 16 05 05

14 TRANSPORT INFORMATION

ADR/RID

Class	2	Classification Code	3A
UN number and proper shipping name			
UN 2187 Carbon dioxide, refrigerated, liquid			
UN 2187 Carbon dioxide, refrigerated, liquid			
Labels	2.2	Hazard number	22
Packing Instruction	P203		

IMDG

Class	2.2
UN number and proper shipping name	
UN 2187 Carbon dioxide, refrigerated, liquid	
Labels	2.2
Packing Instruction	P203
EmS	FC; SV

IATA

Class	2.2
UN number and proper shipping name	
UN 2187 Carbon dioxide, refrigerated, liquid	
Labels	2.2
Packing Instruction	P202

Other transport information

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. Ensure adequate ventilation. Avoid transport on vehicles where the load space is not separated from the driver's compartment. Before transporting product containers ensure that they are firmly secured. Ensure compliance with applicable regulations.

15 REGULATORY INFORMATION

Further national regulations

Pressure Vessel Regulation

Regulations for the prevention of industrial accidents

Water pollution class

Not polluting to waters according to VwVwS from 27.07.2005.

TA-Luft

Not classified according to TA-Luft.

16 OTHER INFORMATION

Ensure all national/local regulations are observed. The hazard of asphyxiation is often overlooked and must be stressed during operator training. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Advice

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. Details given in this document are believed to be correct at the time of going to press.

Further information

NGL safety advice

No. 1	Handling of refrigerated liquid gases
No. 3	Oxygen deficiency
No. 11	Transport of gas receptacles in vehicles
No. 12	Handling of carbon dioxide CO ₂