

Safety Data Sheet



Section 1: Identification

Product Name: Carbon Dioxide

Recommended Use: Multiple Uses

Manufacturer: Anadarko Petroleum Corporation
1201 Lake Robins Dr.
The Woodlands, TX 77380
United States
www.anadarko.com
(832) 636-1000 (General)

Emergency Telephone Number: ChemTel: (831) 248-0585 (International)
(800) 255-3924 (North America)

Section 2: Hazard Identification

Classification:

- Simple Asphyxiant
- Gas under pressure

WARNING

Label Elements:



Hazard Statements:

- Contains gas under pressure, may explode if heated.
- May displace oxygen and cause rapid suffocation.

Precautionary Statements:

Prevention

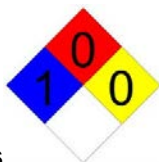
- Wear protective gloves, clothing, and eye/face protection.

Response

- If exposed or concerned: Get medical advice/attention.

Storage/Disposal

- Store in a well-ventilated place. Keep container tightly closed.
- Protect from extreme heat.
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Other
information:****NFPA 704 Hazard Class**

Health: 1

Flammability: 0

Instability: 0

(0-Minimum, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

HMIS Hazard Rating

Health	1
Flammability	0
Physical Hazard	0

(0-Minimum, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

Section 3: Composition/Information on Ingredients

Component	CAS Number	Concentration
Carbon Dioxide (gas)	124-38-9	100%

All concentrations are percent by weight unless ingredient is gas. Gas concentrations are in percent by volume.

Synonyms:CO₂**Section 4: First-Aid Measures****Inhalation:**

If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If breathing is difficult, oxygen or artificial respiration should be administered by qualified personnel. If symptoms persist, seek medical attention.

Skin:

Wash affected area with soap and water; if irritation persists, seek medical attention. For frostbite cases (unusual), do not attempt to thaw frozen tissues; seek medical help instead.

Eye:

Check for and remove contact lenses. Flush eyes with clear running water for 20 minutes while holding eyelids open. If irritation is severe or persistent, seek medical attention.

Ingestion:

Not expected under normal conditions due to gaseous state.

**Most Important Symptoms
and Effects, both Acute
and Delayed:**

Refer to Section 11 - Toxicological Information.

Notes to Physician:

None.

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media:	Use appropriate extinguishing media for surrounding fire conditions. Water spray, stream, or fog may be used to cool canisters filled with gas and prevent ruptures from elevated temperatures. All extinguishing medias may be used.
Unsuitable Extinguishing Media:	None.
Unusual Fire and Explosion Hazards:	Closed containers can explode due to buildup of pressure when exposed to extreme heat.
Hazardous Combustion Products:	None from product, although packaging may produce smoke, fumes or vapors, and oxides of carbon including carbon monoxide.
Advice for Firefighters:	Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH- approved pressure-demand self-contained breathing apparatus with full face piece and full protective clothing.

Section 6: Accidental Release Measures

Personal Precautions:	Gas is heavier than air, avoid low lying areas where gas may accumulate. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Emergency Procedures:	Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.
Environmental Precautions:	Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods for Containment and Clean-up:	Immediately contact emergency personnel. Stop leak if without risk.

Section 7: Handling and Storage

Precautions for Safe Handling:	Keep container tightly closed when not in use; protect containers from abuse; protect from temperature extremes and keep away from sources of heat. Do not incinerate, crush or puncture container. Do not attempt to refill container. Maintain properly ventilated work areas to minimize exposure when handling this material.
Conditions for Safe Storage:	Provide adequate ventilation. Keep away from heat, sparks and open flame.

Section 8: Exposure Controls/Personal Protection

Component	ACGIH	NIOSH	OSHA	Other
Carbon Dioxide	STEL: 30,000 ppm TWA: 5,000 ppm	STEL: 30,000 ppm STEL: 54,000 mg/m ³ TWA: 5,000ppm TWA: 9,000 mg/m ³	TWA: 5,000 ppm TWA: 9,000 mg/m ³	

Engineering Measures/Controls:	If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.
Respiratory Protection:	None required while threshold limits are kept below maximum allowable concentrations; if TWA exceeds limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations.
Eye/Face Protection:	Chemical safety goggles should be worn as matter of good practice. Refer to 29 CFR 1910.133 or European Standard EN166.
Skin/Body Protection:	Utilize appropriate gloves for protection needed from cold if needed, based on exposure.
Environmental Exposure Controls:	Refer to local regulations for restriction of emissions to the atmosphere.

Section 9: Physical and Chemical Properties

Physical Form:	Gas; Liquid under pressure
Appearance:	Colorless gas
Color:	Colorless
Odor:	Odorless
Odor Threshold:	No data available
Boiling Point:	-109.3°F (-78.5°C)
Freezing Point:	-69.8°F (-56.6°C)
Decomposition Temperature:	No data available
pH:	No data available
Specific Gravity (air=1):	1.52
Water Solubility:	Negligible
Viscosity:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Vapor Pressure:	830 psia @ 70°F (21.1°C)
Vapor Density (air=1):	1.53
VOC (Wt.):	No VOCs present
VOC (Vol.):	No VOCs present
Flash Point (TCC):	Not flammable
UEL:	None
LEL:	None
Autoignition:	Not flammable
Flammability (solid, gas):	No data available
Octanol/Water Partition Coefficient:	No data available

Section 10: Stability and Reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Stable under normal temperatures and pressures.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to Avoid:	Temperature extremes
Incompatible Materials:	Strong acids may attack metal canisters.
Hazardous Decomposition Products:	Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, vapors, and smoke may be produced by packaging.

Section 11: Toxicological Information

Components	CAS Number	Acute Toxicity
Carbon Dioxide (100%)	124-38-9	Inhalation-Rat LC50: 470,000 ppm 30 Minute(s) Inhalation-Mouse LC50: 200,000 ppm 2 Hour(s)

Potential Health Effects

Inhalation:	Gas may cause narcosis with headache, dullness, difficulty breathing, lightheadedness, drowsiness, unconsciousness and possibly death. Very high concentrations (>10,000 ppm) may cause asphyxiation with rapid respiration, reduced mental alertness and loss of muscle coordination, nausea, vomiting, prostration, unconsciousness, convulsions, coma and death.
Skin:	Not likely to cause a problem due to high volatility of product. Contact with cartridge, liquid or rapidly expanding gases released under high pressure may cause frostbite.
Eye:	Direct contact with gas may cause drying and minor irritation.
Ingestion:	Not likely to cause a problem due to high volatility of product.
Chronic (Delayed):	Not classified.
Mutagenic Effects:	This product is not reported to have any mutagenic effects.
Carcinogenic Effects:	Not classified as carcinogenic.
Reproductive Effects:	Not expected to cause reproductive toxicity.

Section 12: Ecological Information

Toxicity:	No data available.
Persistence and Degradability:	No data available.
Bioaccumulative Potential:	No data available.
Mobility in Soil:	No data available.
Other Adverse Effects:	No data available.

Section 13: Disposal Considerations

Product Waste:	Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
Packaging Waste:	Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14: Transport Information

	UN Number	UN Proper Shipping Name	Transport Hazard Class(es)	Packing Group
DOT	UN1013	Carbon Dioxide Gas	2.2	NDA
TDG	UN1013	Carbon Dioxide Gas	2.2	NDA
IMO/IMDG	UN1013	Carbon Dioxide Gas	2.2	NDA
IATA/ICAO	UN1013	Carbon Dioxide Gas	2.2	NDA

Special Precautions for User:	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II Of MARPOL 73/78 and the IBC Code:	Data lacking.

Section 15: Regulatory Information

CERCLA/SARA – Section 311/312 (Title III Hazard Categories)

Acute Health: Yes
 Chronic Health: No
 Fire Hazard: No
 Pressure Hazard: Yes
 Reactive Hazard: No

International Hazard Classification

WHMIS Hazard Class:
 Class A- Compressed Gas

National Chemical Inventories

Component	CAS Number	TSCA
Carbon Dioxide	124-38-9	Yes

Section 16: Other Information

Last Revision Date: 22/September/2010

Preparation Date: 29/May/2015

Other Information: Version 1

Disclaimer/Statement of Liability: The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor makes no warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Key to abbreviations

NDA = No data available

LD = Lethal Dose

TC = Toxic Concentration

D = Toxic Dose

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures