

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION (N/A)

Product Name: **Carbon Dioxide**
Synonyms: CO2, Carbonic Anhydride
Distributor Name: Buckeye Fire Equipment Company

CHEMTREC Numbers:
For emergencies in the US, call CHEMTREC: 800-424-9300

HMIS

Revision Date: 07/13/04
Manufacturer Name: Linde Gas, LLC
Address: PO Box 94737
 Cleveland, OH 44101

| | |
|-------------------|----------|
| HEALTH | 1 |
| FIRE | 0 |
| REACTIVITY | 0 |
| PPE | |

Business Phone: 216.642.6600
MATERIAL SAFETY DATA SHEET
IDENTITY-CARBON DIOXIDE (CO2)

HMIS RATINGS:
 Personal Protective Equipment: Appropriate gloves and eye protection. (See Section 8)

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SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS : (N/A)

| Ingredient Name | CAS# | Ingredient Percent |
|---|----------------|---------------------|
| Carbon dioxide EC Index Number: 1 | 124-38-9 | > 99.8% * by Weight |
| Impurities EC Index Number: 1 | Not Applicable | < 0.2% * by Weight |

Comments: * % is rounded to the nearest appropriate number. Values are not to be considered product specifications

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SECTION 3 : HAZARDS IDENTIFICATION : (N/A)

Emergency Overview: Colorless gas. In low concentrations carbon dioxide is odorless, at high concentrations it has a sharp acidic odor.

Carbon dioxide :

Potential Health Effects: Adverse Health Effects and Symptoms: At concentrations between 2% and 10% carbon dioxide can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. At concentrations of 10% or more, suffocation and death can occur within minutes. Contact with the cold gas can cause freezing of exposed tissue.

Exposure Guidelines:
 Chemical Name: Carbon Dioxide
 OSHA PEL: 5000 ppm
 ACGIH TLV: 5000 ppm

HMIS RATINGS:
 Health = 1
 Flammability = 0
 Reactivity = 0
 Personal Protective Equipment: Appropriate gloves and eye protection. (See Section 8)

WHMIS (Canadian Workplace Hazardous Materials Identification):


SECTION 4 : FIRST AID MEASURES

: (N/A)

Other First Aid:

NOTE: Rescuers should not attempt to retrieve a victim of exposure to this product without adequate personal protective equipment. At a minimum, self-contained breathing apparatus should be worn. Remove victim to fresh air as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary. Only trained personnel should administer supplemental oxygen.

In case of frostbite, place the frostbitten part in warm water. Do Not Use Hot Water. If warm water is not available or is impractical to use, wrap the affected part gently in a blanket. If fingers or hands are frostbitten, place the affected part in the armpit. Have victim gently exercise the affected part while being warmed. Seek immediate medical attention. Take a copy of this MSDS to the attending physician or health professional.

[To Top of page](#) **SECTION 5 : FIRE FIGHTING MEASURES**

: (N/A)

Fire:

Flammability: Not Applicable

Flash Point:

Not Applicable

Extinguishing Media:

Not Applicable. This product is an extinguishing agent. It is nonflammable and noncombustible.

Fire Fighting Instructions:

Structural firefighters must wear self-contained breathing apparatus and full protective equipment. Move fire exposed cylinders if it can be done without risk to firefighters. Otherwise cool containers with hose stream and protect personnel. Withdraw immediately in case of rising sounds from venting safety device or any discoloration of tanks due to fire.

Sensitivity to Impact:

Sensitivity to Mechanical Impact: None


Static Discharge Effects:

Sensitivity: None

Unusual Fire Hazards:

Containers of carbon dioxide, when involved in fire, may rupture or burst from the heat of the fire.


Flammability: Not Applicable

[To Top of page](#) **SECTION 6 : ACCIDENTAL RELEASE MEASURES**

: (N/A)

Spill Cleanup Measures:

In case of accidental release, use the appropriate respiratory and personal protection. Evacuate the area and allow the gas, which is heavier than air, to dissipate. Monitor the surrounding area for carbon dioxide and oxygen levels. The levels of carbon dioxide must be below those listed in Section 2 and the atmosphere must have at least 19.5% oxygen before personnel are allowed back into the area.

[To Top of page](#) **SECTION 7 : HANDLING and STORAGE**


: (N/A)

Handling:

Avoid eye, respiratory, and skin exposure. Use the appropriate personal protective equipment when handling. Be aware of any signs of dizziness, fatigue, or any exposure symptom described in Section 2.

Storage:

Product should be stored in dry, well-ventilated areas away from sources of heat. Store in its original container or extinguisher. Containers are under pressure and present significant safety hazards. Store away from heavily trafficked areas and paths for ingress/egress. Protect containers from possible damage and falling. Secure cylinders to prevent accidental knock over.

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: (N/A)

Ventilation System:

Use adequate ventilation to prevent unacceptable concentration levels noted in Section 2.

Skin Protection Description:

Use low-temperature protective gloves and appropriate body protection.

Eye/Face Protection:

Wear chemical goggles or full-face air-purifying respirator.


Respiratory Protection:

Use self-contained breathing apparatus

Ingredient Guidelines

Ingredient: Carbon dioxide

| | |
|------------------------|---------------|
| Guideline Type: | OSHA PEL-TWA |
| Guideline Information: | 5000 ppm |
| Guideline Type: | ACGIH TLV-TWA |
| Guideline Information: | 5000 ppm |

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SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES

: (N/A)


| | |
|----------------------------|--|
| Physical State/Appearance: | Carbon dioxide is a gas |
| Color: | Carbon dioxide is a colorless |
| Odor: | Carbon dioxide is odorless at low concentrations. At high concentrations it will have a sharp acidic odor. |
| Boiling Point: | @ 1 atm: -78.5 deg C |
| Solubility: | 0.90% |
| Density: | Gas Density @ 21 deg C and 1 atm: 0.1144 lb/ft ³ |

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SECTION 10 : STABILITY and REACTIVITY

: (N/A)

| | |
|---|---|
| Chemical Stability: | Normally stable |
| Incompatibilities with Other Materials: | Will ignite and explode when heated with powdered aluminum, beryllium, cerium alloys, chromium, magnesium-aluminum alloys, manganese, thorium, titanium, and zirconium. In the presence of moisture, will ignite with cesium oxide. Metal acetylides will also ignite and explode on contact with carbon dioxide. |
| Hazardous Polymerization: | Will not occur, however carbon dioxide acts as to catalyze the polymerization of acryldehyde and aziridine. |
| Hazardous Decomposition Products: | In an electrical discharge, yields carbon monoxide and oxygen. In the presence of moisture, carbon dioxide will form carbonic acid. |

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SECTION 11 : TOXICOLOGICAL INFORMATION


: (N/A)

Applies to all ingredients:

Reproductive Toxicity: This product is not known to have any reproductive effects in humans.

Carbon dioxide :

Inhalation Effects: Carbon dioxide is an asphyxiant gas, which has physiological effects at high concentrations.
LCLo (inhalation, humans) = 9 pph/5 minutes

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SECTION 12 : ECOLOGICAL INFORMATION

: (N/A)


| | |
|---------------------------------------|---|
| Ecotoxicity: | Occurs naturally in the environment. |
| Effect of Material on Plants/Animals: | Any adverse effect on animals would be related to overexposure and oxygen deficient environments. No adverse effect to plant life except for frost caused by rapidly expanding gases. |
| Dissipation: | Dissipates rapidly in well-ventilated areas. |

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SECTION 13 : DISPOSAL CONSIDERATIONS

: (N/A)

| | |
|--------------------|--|
| Waste Disposal: | Dispose of according to state or local laws, which may be more restrictive than federal regulations. |
| RCRA Hazard Class: | This product is not a RCRA characteristically hazardous or listed hazardous waste. |

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SECTION 14 : TRANSPORT INFORMATION

: (N/A)

| | |
|--|---|
| Transportation Information: | This product is hazardous as defined by U.S. Department of Transportation 49 CFR 172, and dangerous goods as defined by Transport Canada "Transportation of Dangerous Goods" regulations. |
| DOT Shipping Name: | Carbon Dioxide |
| DOT UN Number: | UN1013 |
| DOT Hazard Class: | Number and Description: 2.2 (non-flammable gas) |
| DOT Packing Group: | Not Applicable |
| DOT Subpart E Labeling Requirement: | Non-Flammable Gas |

[To Top of page](#) **SECTION 15 : REGULATORY INFORMATION**


: (N/A)

Applies to All Ingredients :

| | |
|--|--|
| TSCA 8(b): Inventory Status: | All ingredients are on the TSCA inventory. |
| SARA: | This product is not subject to the SARA reporting requirements or has SARA Threshold Planning Quantities or CERCLA Reportable Quantities. |
| State: | State Regulatory Information: Chemicals in this product are covered under the specific State regulations noted: Kansas: Section 302/303 List - No North Dakota: List of Hazardous Chemicals, Reportable Quantities - No Texas: Hazardous Substance List - No |
| Canada WHMIS: | WHMIS (Canadian Workplace Hazardous Materials Identification) Class A: Compressed gas This MSDS conforms to the requirements under U.S. and Canadian Regulations or Standards. It conforms to the proposed 2003 ANSI Z400.1 format. |
| Canada DSL: | All ingredients are on the Canada DSL inventory. |
| European Community Chemical Inventory Status: | All ingredients are on the Europe EINECS/ELINCS inventory. |
| Japan Chemical Inventory Status: | All ingredients are on the Japan MITI inventory. |
| Australia Chemical Inventory Status: | All ingredients are on the Australia AICS inventory. |
| International Chemical Inventory Lists: | All ingredients are on the South Korea KECL inventory. |

Carbon dioxide :

| | |
|---------------|---|
| State: | State Regulatory Information: Chemicals in this product are covered under the specific State regulations noted: Alaska: Designated Toxic and Hazardous Substances - Carbon Dioxide California: Permissible Exposure Limits for Chemical Contaminants - Carbon Dioxide Florida: Substance list - Carbon Dioxide Illinois: Toxic Substance List - Carbon Dioxide Massachusetts: Substance list - Carbon Dioxide Minnesota: List of Hazardous Substances - Carbon Dioxide Missouri: Employer Information/Toxic Substance List - Carbon Dioxide New Jersey: Right to Know Hazardous Substance List- Carbon Dioxide Pennsylvania: Hazardous Substance List - Carbon Dioxide Rhode Island: Hazardous Substance List - Carbon Dioxide West Virginia: Hazardous Substance List - Carbon Dioxide Wisconsin: Toxic and Hazardous Substances - Carbon Dioxide California Proposition 65 - Carbon Dioxide is not listed on the California Proposition 65 List |
|---------------|---|

[To Top of page](#) **SECTION 16 : ADDITIONAL INFORMATION**

: (N/A)

| | |
|----------------------------|----------|
| HMIS: | |
| Health Hazard: | 1 |
| Fire Hazard: | 0 |
| Reactivity: | 0 |
| MSDS Revision Date: | 07/13/04 |

Disclaimer:

The information contained herein is given in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made.

HMIS RATINGS:

Personal Protective Equipment: Appropriate gloves and eye protection. (See

Section 8)

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