



Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

Product Name : Carbon Dioxide
Supplier : Tri-State Carbonic, LLC
601 Front Street
Lawrenceburg, IN 47025 Phone: 812-537-4101
Product Use : Industrial, Food/Beverage Grade, Medical, and Synthetic.
MSDS# : 01013
Date of Preparation : 3/2007
Emergency Contact : 812-537-4101 (Chemtrec – 800-424-9300)

Section 2: Physical and Chemical Properties (GAS)

Molecular Weight : 44.01 g/mole
Molecular Formula : CO₂
Boiling (sublimation) Point : -78.5°C (-109.3°F)
Freezing Point : -56.6 °C (-69.8°F) @ 75.1 psia
Critical Temperature : 30.9°C (87.6°F)
Vapor Pressure : 856psig @ 21.1°C (70°F)
Vapor Density : 1.53 (Air = 1.00)
Specific Volume (ft³/lb) : 8.77193
Gas Density (lb/ft³) : 0.114
Appearance and Odor : Clear/Colorless, No Odor

Section 3: Stability and Reactivity

Stability : This product is Stable.

Reactivity : Very limited.

Section 4: Hazard Identification

Physical State : Gas
Overview : Warning! Contents under pressure.
May cause damage to the following organs: Lungs, Cardiovascular System,

Skin, Eyes, and Central Nervous System.

Irritant to Eyes, Lungs, and Skin.

Physical State : Liquid
Overview : Warning! Contents can expand rapidly. Contents under pressure.
Cryogenic effects.
May cause damage to the following organs: Lungs,
Cardiovascular System, Skin, Eyes, Central Nervous System.
Irritant to Eyes, Lungs, and Skin.
Contact with rapidly expanding liquid will cause frostbite.

Routes of Entry : Inhalation, Dermal, Eyes, Ingestion (liquid).

Potential Acute Health Effects

Eyes : Moderate irritation of the eyes. Including the cornea and lens.
Skin : Moderate irritation of the skin. Including itching, burning, or freezing.
Respiratory System : Severe irritation of respiratory system. Including burning, labored breathing, and suffocation/asphyxiation.

Potential Chronic Health Effects

Carcinogenic : Not Available.
Mutagenic : Not Available.

Medical Conditions : Acute or chronic respiratory conditions may be enhanced by exposure to this product.

Section 5: First Aid Measures

First Aid measures that expose the rescuer to undue personal risk should be avoided. If aid is possible, only trained individuals wearing the appropriate safety equipment should attempt to rescue or administer first aid to the victim. **NOTE:** Mouth-to-mouth resuscitation may present a health hazard.

Eye Contact : Immediately flush the eyes with copious amounts of water for 15 minutes. Get medical attention immediately.

Skin Contact : Immediately flush the effected area with copious amounts of water. Remove any contaminated clothing or footwear. Wash clothing and footwear before use.

Frostbite : Warm gradually with body heat. Do not rub as tissue damage may occur. Use water between 102°F-110°F. Apply sterile dressing to blisters.

Inhalation : Expose to fresh air source. Apply Oxygen when breathing is labored. If not breathing, provide artificial respiration. Get medical attention immediately.

Ingestion : Do not induce vomiting unless directed by medical personnel.

Section 6: Exposure Controls and Personal Protection

Engineering Controls : Use only in well-ventilated areas or in areas where the use of a exhaust system can be implemented to keep airborne levels below the recommended exposure limits.

Personal Protection

Eyes : Appropriate eye protection including goggles, face shields or glasses should be observed where there exists possible contact with splashing liquid product or gas could potentially blow dust or foreign matter into the face.

Skin : Appropriate protection for the skin should be well planned out before handling this product. All skin should be covered before handling any product. The hands should be covered with chemical resistant gloves.

Respiratory : Use a self-contained breathing apparatus or other appropriate devices.
Applicable standards can be found at (USA) 29 CFR 1910.134.

Section 7: Composition, Information on Ingredients

<u>Name</u>	<u>CAS Number</u>	<u>% Volume</u>	<u>Exposure Limits</u>
Carbon Dioxide	124-38-9	100	<u>ACGIH TLV (USA, 9/2004)</u> STEL: 54000mg/m ³ – 15 Minutes. Forms: All. SETL: 30000ppm – 15 Minutes. Form: All Forms. TWA: 9000mg/m ³ – 8 Hours. Form: All Forms. TWA: 5000ppm – 8 Hours. Form: All Forms. <u>NIOSH REL (USA, 6/2001)</u> STEL: 54000mg/m ³ – 15 Minutes. Forms: All. SETL: 30000ppm – 15 Minutes. Form: All Forms. TWA: 9000mg/m ³ – 10 Hours. Form: All Forms. TWA: 5000ppm – 10 Hours. Form: All Forms. <u>OSHA PEL (USA, 6/1993)</u> TWA: 9000mg/m ³ – 8 Hours. Form: All Forms. TWA: 5000ppm – 8 Hours. Form: All Forms.

Section 8: Toxicological Information

Toxicity Data

IDLH : 40000ppm.
Human chronic effect : Causes damage to the following organs; Lungs, Cardiovascular System, Skin, Eyes, and Central Nervous System.
Other toxic effects : Not known.

Specific Effects

Carcinogenic : No known effects or hazards.
Mutagenic : No known effects or hazards.
Reproductive Toxicity : No known effects or hazards.

Section 9: Ecological Information

Products of Degradation	: Carbon Monoxide
Toxicity of degradation products	: Carbon Monoxide is a severe asphyxiant that competes for Oxygen in the body. It is heavier than air and will be present in low-lying areas. Death may occur in less than three minutes.
Environmental Fate	: Not known.
Environmental Hazards	: None if contained and spill/release is minimized.
Toxicity to the environment	: Not known.

Section 10: Fire and Explosion Data

Flammability	: Non-Flammable
Flash Point	: Not Available.
Auto Ignition Temperature	: Not Available.
Upper and Lower Explosion Limits	: Not Available.
Electrical Classification	: Non-Hazardous.

Section 11: Fire Fighting Measures

Flammability	: Non-Flammable.
Fire Fighting Instructions	: Use appropriate agent to contain fire around compressed liquid or gas.

If involved in a fire, shut off flow if it is safe to do so. Apply water from a safe distance to compressed liquid or gas containers.

Only trained personnel, wearing the appropriate gear should fight fires. If there has been a Carbon Dioxide leak in the area, fire fighters should wear a self-contained breathing apparatus with a full-face piece to prevent inhalation of gas.

Section 12: Handling and Storage

Handling : Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas and avoid inhalation of gas. Avoid puncturing, dropping, sliding, or rolling of pressurized containers. Ensure that the appropriate pressure ratings and pressure relief valves are used at all times. Avoid touching uninsulated areas containing compressed liquid where cryogenic hazards may exist.

Storage : Keep containers closed, in well ventilated, and cool areas. The use of protective caps and safety plugs should be observed at all times.

Section 13: Transport Information

Regulator Information	UN Number	Proper Shipping Name	Class	Packing Group	Label Description	Additional Information
DOT Classification	UN 1013	Carbon Dioxide	2.2	N/A (Gas)	Green Diamond Shaped Label with cylinder, Non-Flammable Gas, and class designation of 2	Limited Quantity: Yes Packaging Instructions: Cargo Aircraft ONLY. Limited to 75kg.
TDG Classification	UN 1013	Carbon Dioxide	2.2	N/A (Gas)	Green Diamond Shaped Label with cylinder, Non-Flammable Gas, and class designation of 2	Explosion Limit and Limited Quantity Index: 0.125 Passenger Carrying Road or Rail Index: 75
Mexico Classification	UN 1013	Carbon Dioxide	2.2	N/A (Gas)	Green Diamond Shaped Label with cylinder, Non-Flammable Gas, and class designation of 2	None

Section 14: Regulatory Information

US Federal Regulations : TSCA 8(b) inventory: Carbon Dioxide.
 SARA 302/304/311/312 Extremely Hazardous Substances: None found.
 SARA 302/304 Emergency Planning and Notification: None Found.
 SARA 302/304 MSDS Distribution: Chemical Inventory – Hazard Identification: Carbon Dioxide. Sudden Release of Pressure, Immediate Acute Health Hazard, Delayed Chronic Health Hazard.
 Clean Water Act 307: None Found.
 Clean Water Act 311: None Found.
 Clean Air Act: 112 Accidental Release Prevention: None Found.
 Clean Air Act: 112 Regulated Flammable Substances: None Found.
 Clean Air Act: 112 Regulated Toxic Substances: None Found.

State Regulations : Pennsylvania RTK: Carbon Dioxide (Generic Environmental Hazard)
 Massachusetts RTK: Carbon Dioxide
 New Jersey: Carbon Dioxide

Canada Regulations : WHMIS-Class A: Compressed Gas
 CEPA DSL: Carbon Dioxide

Section 15: Other Information

US Label Requirements : Contents Under Pressure.
 Causes Damage to the following organs: Lungs, Cardiovascular System, Skin, Eyes, and Central Nervous System.
 May Cause Respiratory Tract, Eye, and Skin Irritation.

Canada Label Requirements : Class A – Compressed Gas.

Hazardous Material Information System (USA) : Compressed Gas:

Health	1
Fire Hazard	0
Reactivity	0
Personal Protection	C

Liquid:

Health	3
Fire Hazard	0
Reactivity	0
Personal Protection	C

Section 16: Disclaimer

Notice To Reader:

Due to the nature of the product described above and the uniqueness of each customers use, Tri-State Carbonic, LLC assumes no liability, whatsoever, for the accuracy and completeness of the information contained in this Material Safety Data Sheet. It is the sole responsibility of the customer to examine the suitability of the material for their specific use. Although many hazards are contained in this briefing, Tri-State Carbonic, LLC will not guarantee that these are the only hazards present when dealing with this product.

To the best of this company's knowledge, the above information is accurate.