

**SAFETY DATA SHEET**

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations and According to The Hazardous Products Regulation (February 11, 2015) and their amendments.

Carbon Dioxide (Liquid)

SDS Number: LSB-CO2-NA-EN

Section 1: IDENTIFICATION

Product Name: Carbon Dioxide (Liquid)
Synonyms: Not available.
Product Use: Industrial.
Restrictions on Use: Not available.
Manufacturer/Supplier: LSB Chemical, LLC
3503 NW 63rd Street
Suite 500
Oklahoma, OK 73116
Website: www.lsbindustries.com
Email: lsbproductsupport@lsbindustries.com
Phone Number: (405) 235-4546
Emergency Phone: 24 Hour Emergency Telephone Number: 1-800-424-9300
(CHEMTREC)
Date of Preparation of SDS: January 15, 2026

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Gases Under Pressure - Refrigerated Liquefied Gas
Simple Asphyxiant, Category 1

LABEL ELEMENTS**Hazard**

Pictogram(s):



Signal Word: Warning

Hazard Statements: H281: Contains refrigerated gas; may cause cryogenic burns or injury.
May displace oxygen and cause rapid suffocation.

Precautionary Statements

Prevention: P282: Wear cold insulating gloves and either face shield or eye protection.

Response: P315: Get immediate medical attention.
P336: Thaw frosted parts with lukewarm water. Do not rub affected area.

Storage: P403: Store in a well-ventilated place.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None

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This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% vol./vol.
Carbon dioxide	Not available.	124-38-9	98.5 - 100

Section 4: FIRST-AID MEASURES

Inhalation:	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Call a poison center or doctor if you feel unwell.</p> <p>Acute and delayed symptoms and effects: May displace oxygen and cause rapid suffocation. Central nervous system depression can occur if product is present in concentrations that will reduce the oxygen content of air below 18 % (vol). Symptoms may include headache, lightheadedness, drowsiness, disorientation, vomiting and seizures. Unconsciousness and death may occur with severe oxygen deprivation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Inhalation of high concentrations of Carbon dioxide may result in narcotic effects including headache and disorientation. Being under the influence of alcohol may enhance the effects of this product.</p>
Eye Contact:	<p>If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.</p> <p>Acute and delayed symptoms and effects: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result.</p>
Skin Contact:	<p>Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. If on skin: Wash with plenty of water. Get immediate medical attention. Thaw frosted parts with lukewarm water. Do not rub affected area. Remove non-adhering contaminated clothing. Do not remove adherent material or clothing.</p> <p>Acute and delayed symptoms and effects: Contains refrigerated gas; may cause cryogenic burns or injury. Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.</p>
Ingestion:	<p>Not a normal route of exposure.</p>

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Acute and delayed symptoms and effects: Not a normal route of exposure.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES**FLAMMABILITY AND EXPLOSION INFORMATION**

Contains refrigerated gas; may cause cryogenic burns or injury. Non-flammable gases. Containers may explode when heated. Ruptured cylinders may rocket. Move containers from fire area if you can do it without risk. Damaged cylinders should be handled only by specialists.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Not available.

Protection of Firefighters: Vapors may cause dizziness or asphyxiation without warning. Vapors from liquefied gas are initially heavier than air and spread along ground. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection. Always wear thermal protective clothing when handling refrigerated/cryogenic liquids or solids.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

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Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Stop leak if you can do it without risk. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak. If possible, turn leaking containers so that gas escapes rather than liquid.

Methods for Clean-Up: Allow substance to evaporate. Ventilate the area. **CAUTION:** When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE**Handling:**

Avoid breathing gas. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not pierce or burn, even after use. See Section 8 for information on Personal Protective Equipment.

Storage:

Store in a well-ventilated place. Protect from sunlight. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children. Storage Temperature: < 52 °C (< 125°F).

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**Exposure Guidelines****Component**

Carbon dioxide [CAS No. 124-38-9]

ACGIH: 5000 ppm (TWA); 30000 ppm (STEL); (1986)

OSHA: 5000 ppm (TWA), 9000 mg/m³ (TWA);

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)**Eye/Face Protection:**

Wear cold insulating face shield and eye protection. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3:20 and OSHA regulations in 29 CFR 1910.133 for Personal Protective

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	Equipment.
Hand Protection:	Wear protective gloves. Wear cold insulating gloves. Consult manufacturer specifications for further information.
Skin and Body Protection:	Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20-2017 standards is recommended in areas where material is stored or handled.
Respiratory Protection:	If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-18, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
General Hygiene Considerations:	Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless gas, liquefied compressed gas.
Color:	Colorless.
Odor:	Odorless.
Odor Threshold:	Not available.
Physical State:	Gas.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	-78.5 °C (-109.3 °F) (sublimes)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability:	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Relative Vapor Density:	Not available.

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Relative Density:	Not available.
Solubility:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Kinematic Viscosity:	Not available.
Dynamic Viscosity:	14.90 µPa.s at 25 °C (77 °F) 70 µPa.s at -78.5 °C (-109.3 °F)
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	100
Density:	1101 kg/m ³ (liquid at saturation -37 °C (-35 °F)) 1.977 kg/m ³ (gas at 1 atm (100 kPa) and 0 °C (32 °F))
Coefficient of Water/Oil Distribution:	Not available.
Particle Characteristics:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	Dusts of various metals, such as magnesium, zirconium, titanium, aluminum, chromium & manganese are ignitable and explosive when suspended in Carbon dioxide. Forms carbonic acid in water.
Conditions to Avoid:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Incompatible Materials:	Strong oxidizers. Metals. Corrosive atmosphere.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION**EFFECTS OF ACUTE EXPOSURE****Product Toxicity**

Oral:	Not available.
Dermal:	Not available.
Inhalation:	Not available.

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Component Toxicity

Component	CAS No.	LD₅₀ oral	LD₅₀ dermal	LC₅₀
Carbon dioxide	124-38-9	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation.

Target Organs: Skin. Eyes. Respiratory system. Cardiovascular system. Central nervous system.

Symptoms (including delayed and immediate effects)

Inhalation: May displace oxygen and cause rapid suffocation. Central nervous system depression can occur if product is present in concentrations that will reduce the oxygen content of air below 18 % (vol). Symptoms may include headache, lightheadedness, drowsiness, disorientation, vomiting and seizures. Unconsciousness and death may occur with severe oxygen deprivation. May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Inhalation of high concentrations of Carbon dioxide may result in narcotic effects including headache and disorientation. Being under the influence of alcohol may enhance the effects of this product.

Eye: Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. The pain after contact with liquid can quickly subside. Permanent eye damage or blindness could result.

Skin: Contains refrigerated gas; may cause cryogenic burns or injury. Contact with rapidly expanding or liquefied gas may cause irritation and/or frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with liquid can quickly subside.

Ingestion: Not a normal route of exposure.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Respiratory system. Cardiovascular system. Central nervous system.

Chronic Effects: Not available.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

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Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION**U.S. Department of Transportation (DOT)**

Proper Shipping Name: UN2187, CARBON DIOXIDE, REFRIGERATED LIQUID, 2.2

Class: 2.2

UN Number: UN2187

Packing Group: Not applicable.

Placard(s):



ERG Guide: 120

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN2187, CARBON DIOXIDE, REFRIGERATED LIQUID, 2.2

Class: 2.2

UN Number: UN2187

Packing Group: Not applicable.

Placard(s):



ERG Guide: 120

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Section 15: REGULATORY INFORMATION**Chemical Inventories****US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations**United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations**Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Carbon dioxide	124-38-9	Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Carbon dioxide	124-38-9	Listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Carbon dioxide	124-38-9	Listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

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Section 16: OTHER INFORMATION**Disclaimer:**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Any party handling, transferring, transporting, storing, applying or otherwise using this product should review thoroughly all applicable laws, rules, regulations, standards and good engineering practices. Such thorough review should occur before the party handles, transfers, transports, stores, applies or otherwise uses this product.

Date of Preparation of SDS: January 15, 2026

Version: 1.1

GHS SDS Prepared by: **Aegis Regulatory Inc.**
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