



GASES • AUTOMATION • DRY ICE • WELDING SUPPLIES

Safety Data Sheet

Carbon Dioxide, Liquid

Section 1: Product and Company Identification

Oxygen Service Company

1111 Pierce Butler Rte.

Saint Paul, MN 55104

(651) 644-7273

<https://www.oxygenservicecompany.com>

CHEMTREC (800) 424-9300

Product Code: Carbon Dioxide, Liquid

Section 2: Hazards Identification



Warning

Hazard Classification:

Gases Under Pressure

Hazard Statements:

Contains gas under pressure; may explode if heated

Precautionary Statements

Storage:

Protect from sunlight.

Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

| |
|--------------|
| CAS # |
| 124-38-9 |

| Chemical Substance | Chemical Family | Trade Names |
|------------------------|-----------------|--|
| CARBON DIOXIDE, LIQUID | Inorganic gases | Carbon dioxide (cryogenic liquid), LCO2, liquefied CO2 |

Section 4: First Aid Measures

| Skin Contact | Eye Contact | Ingestion | Inhalation | Note to Physicians |
|--|--|-------------------------|--|----------------------------------|
| If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention. | Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention. | Do not induce vomiting. | If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. | For inhalation, consider oxygen. |

Section 5: Fire Fighting Measures

| Suitable Extinguishing Media | Products of Combustion | Protection of Firefighters |
|------------------------------|------------------------|--|
| Non-flammable | Non-flammable | <ul style="list-style-type: none"> ▪ Non-flammable ▪ Non-flammable |

Section 6: Accidental Release Measures

| Personal Precautions | Environmental Precautions | Methods for Containment |
|---|--|--|
| Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Do not touch spilled material. | Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers. | Stop leak if possible without personal risk. |

| Methods for Cleanup | Other Information |
|----------------------|-------------------|
| Stop leak, evacuate. | None |

Section 7: Handling and Storage

| Handling | Storage |
|--|--|
| Store and use with adequate ventilation. Firmly secure cylinders upright to keep them from falling or being knocked over. Screw valve protection cap firmly in place by hand. Store only where temperature will not exceed 125 F (52 C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods. | Do not get liquid in eyes, on skin, or clothing. Protect cylinders from damage. Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Open valve slowly. Close cylinder valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier |

Section 8: Exposure Controls/Personal Protection

| Exposure Guidelines |
|--|
| OSHA PEL 5,000 ppm ACGIH TLV-TWA (2009) 5,000 ppm; 30,000 ppm, 15 min STEL |

Engineering Controls

Handle only in fully enclosed systems.

| Eye Protection | Skin Protection | Respiratory Protection |
|---|--|------------------------|
| Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. | Wear appropriate protective, cold insulating clothing. | Non-flammable |

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

| Physical State | Appearance | Color | Change in Appearance | Physical Form | Odor | Taste |
|----------------|------------|-----------|----------------------|---------------|----------|------------|
| Liquid | Colorless | Colorless | N/A | Liquid | Odorless | Acid taste |

| Flash Point | Flammability | Partition Coefficient | Autoignition Temperature | Upper Explosive Limits | Lower Explosive Limits |
|---------------|---------------|-----------------------|--------------------------|------------------------|------------------------|
| Not flammable | Not available | N/A | Nonflammable | Nonflammable | Nonflammable |

| Boiling Point | Freezing Point | Vapor Pressure | Vapor Density | Specific Gravity | Water Solubility | pH | Odor Threshold | Evaporation Rate | Viscosity |
|---------------|---------------------------|-------------------|---------------|------------------|------------------|--|----------------|------------------|------------------|
| Not available | -71 F (-57 C) @ 4000 mmHg | 43700 mmHg @ 21 C | 1.5 (Air=1) | 1.522 @ 21 C | Soluble | 3.7 (saturated aqueous solution) @ 101.3 kPa (carbonic acid) | Not available | Not applicable | 0.01657 cP @ 0 C |

| Molecular Weight | Molecular Formula | Density | Weight per Gallon | Volatility by Volume | Volatility | Solvent Solubility |
|------------------|-------------------|---------|-------------------|----------------------|----------------|---|
| 44.01 | C-O2 | 0.114 | Not available | Not applicable | Not applicable | Soluble: Alcohol, acetone, hydrocarbons, organic solvents |

Section 10: Stability and Reactivity

| Stability | Conditions to Avoid | Incompatible Materials |
|---|---|--|
| Stable at normal temperatures and pressure. | Stable at normal temperatures and pressure. | Oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases, Alkali metals, alkaline earth metals, metal acetylides, chromium, titanium above 1022 F (550 C), uranium above 1382 F (750 C), magnesium above 1427 F (775 C) |

| Hazardous Decomposition Products | Possibility of Hazardous Reactions |
|----------------------------------|------------------------------------|
| Carbon monoxide | Will not polymerize. |

Section 11: Toxicology Information

Acute Effects

| Oral LD50 | Dermal LD50 | Inhalation |
|-----------------|-----------------|---|
| Not established | Not established | Ringin in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, visual disturbances, suffocation, convulsions, coma |

| Eye Irritation | Skin Irritation | Sensitization |
|---------------------------------------|-----------------------------|--|
| Irritation, frostbite, blurred vision | Liquid: blisters, frostbite | Asphyxiant OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION CGA -HG01 - MAY CAUSE FROSTBITE CGA - HG03 - MAY INCREASE RESPIRATION AND HEART RATE |

Chronic Effects

| Carcinogenicity | Mutagenicity | Reproductive Effects | Developmental Effects |
|-----------------|-----------------|----------------------|-----------------------|
| Not available | Not established | Available. | No data |

Section 12: Ecological Information

Fate and Transport

| Eco toxicity | Persistence / Degradability | Bioaccumulation / Accumulation | Mobility in Environment |
|--|---|--|--------------------------|
| Fish toxicity: 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta) Invertebrate toxicity: Not available Algal toxicity: Not available Phyto toxicity: Not available Other toxicity: Not available | Relatively non-persistent in the environment. Moderately volatile from water. | Accumulates very little in the bodies of living organisms. | Leaches through the soil |

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

| Proper Shipping Name | ID Number | Hazard Class or Division | Packing Group | Labeling Requirements | Passenger Aircraft or Railcar Quantity Limitations | Cargo Aircraft Only Quantity Limitations | Additional Shipping Description |
|----------------------|-----------|--------------------------|----------------|-----------------------|--|--|---------------------------------|
| Carbon dioxide | UN2187 | 2.2 | Not applicable | Nonflammable gas | 75 kg or L | 150kg | None |

Canadian Transportation of Dangerous Goods

| Shipping Name | UN Number | Class | Packing Group / Risk Group |
|----------------|-----------|-------|----------------------------|
| Carbon dioxide | UN2187 | 2.2 | Not applicable |

Section 15: Regulatory Information

U.S. Regulations

| CERCLA Sections | SARA 355.30 | SARA 355.40 |
|-----------------|----------------|----------------|
| Not regulated. | Not regulated. | Not regulated. |

SARA 370.21

| Acute | Chronic | Fire | Reactive | Sudden Release |
|-------|---------|------|----------|----------------|
| Yes | No | No | No | Yes |

SARA 372.65

Not regulated.

OSHA Process Safety

Not regulated.

State Regulations

CA Proposition 65

Not regulated.

Canadian Regulations

WHMIS Classification

A

National Inventory Status

| US Inventory (TSCA) | TSCA 12b Export Notification | Canada Inventory (DSL/NDSL) |
|----------------------|------------------------------|-----------------------------|
| Listed on inventory. | Not listed. | Listed on inventory. |

Section 16: Other Information

NFPA Rating

HEALTH=3 FIRE=0 REACTIVITY=0 SPECIAL=SA

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard