



Safety Data Sheet

Carbon Dioxide

Cal-Tool
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951-686-7822
www.cal-tool.com

Section 1: Product and Company Identification

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Product Code: Carbon Dioxide

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, GAS | Inorganic gases | CARBONIC ACID GAS; CARBONIC ANHYDRIDE; CARBON DIOXIDE; CARBON OXIDE; UN 1013; 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. | Contact with liquid: Immediately 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"> ▪ Any appropriate escape-type, self-contained breathing apparatus. ▪ 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, remove source of ignition. | None |

Section 7: Handling and Storage

| Handling | Storage |
|---|---|
| Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances. | Store and handle in accordance with all current regulations and standards |

Section 8: Exposure Controls/Personal Protection

| Exposure Guidelines |
|---|
| CARBON DIOXIDE, GAS: CARBON DIOXIDE: 5000 ppm (9000 mg/m ³) OSHA TWA 10000 ppm (18000 mg/m ³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993) 30000 ppm (54000 mg/m ³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 5000 ppm ACGIH TWA 30000 ppm ACGIH STEL 5000 ppm (9000 mg/m ³) NIOSH recommended TWA 10 hour(s) 30000 ppm (54000 mg/m ³) NIOSH recommended STEL |

Engineering Controls

Handle only in fully enclosed systems.

| Eye Protection | Skin Protection | Respiratory Protection |
|----------------|-----------------|------------------------|
| | | |

| Eye Protection | Skin Protection | Respiratory Protection |
|--|--|--|
| For the gas: Eye protection not required, but recommended. For the liquid: 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. | For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing. | Any appropriate escape-type, self-contained breathing apparatus. |

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 |
|----------------|------------|-----------|----------------------|---------------|----------|------------|
| Gas | Colorless | Colorless | N/A | Gas | 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. | Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases |

| 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 | Difficulty breathing |

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 | UN1013 | 2.2 | Not applicable | 2.2 | 75 kg or L | 150kg | None |

Canadian Transportation of Dangerous Goods

| Shipping Name | UN Number | Class | Packing Group / Risk Group |
|----------------|-----------|-------|----------------------------|
| Carbon dioxide | UN1013 | 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