



CARBON DIOXIDE INSTRUCTIONS

This instructions include

- CO2 general information.
- Instructions for boxing and shipping empty bottles.
- CO2 safety information.
- Managing emergencies and special situations.

CO2 GENERAL INFORMATION



CO₂ GENERAL INFORMATION

- Carbon dioxide is a byproduct of human and animal metabolism and plays a crucial role in the life cycle of all plants.
- It is most commonly found in gas form, but depending on temperature and pressure, it can also exist as a liquid or solid.
- As one of the most abundant gases on Earth, carbon dioxide makes up about 0.038% of the Earth's atmosphere at sea level.
- Carbon dioxide gas is approximately 1.5 times heavier than air, causing it to settle in normal atmospheric conditions.
- It is non-toxic, colorless, and odorless, and it dissolves in water.
- CO₂ is non-flammable, does not burn, and is not classified as an oxidizer in fires. In fact, it is used in some fire extinguishers.

INSTRUCTIONS FOR BOXING AND SHIPPING EMPTY BOTTLES.



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- Ensure the bottles are empty by pressing the center pin with a spoon to release any remaining CO2. Wear gloves to protect your hands, as the CO2 will be cold upon release.
- Inspect the bottles (refer to the next page for details). Securely twist on the provided caps to seal them.
- Place two empty bottles in the exchange box (you must return two empty bottles).
- Affix the included return label over the existing label. Seal the box with tape and place it in the mailbox.



INSPECTING BOTTLES.

- Each bottle must be thoroughly inspected before shipping. Bottles that are damaged cannot be shipped or refilled.
- Check for the following:
 - Dents.
 - Damage to the valve or cylinder body.
 - Gouges.
 - Bulges.
 - Contamination or corrosion.
- Any damaged bottle should be discarded.



CO2 SAFETY INFORMATION



CHILLY PROPERTIES

- Liquid carbon dioxide is extremely cold and can cause frostbite, a cryogenic injury similar to a burn.
- Avoid touching uninsulated, frosty canisters containing liquid CO₂ or the cold vapor emitted from them, as this can result in frostbite or cause your skin to adhere to the freezing surfaces.

EFFECTS OF EXCESS

- Carbon Dioxide is essential to the human body.
- Life on Earth as we know it would not exist without carbon dioxide.
- Breathing is stimulated by an excess of CO₂.
- If an individual breathes too slowly, or is exposed to excessive CO₂ levels, too much CO₂ can build up.
- Signs and symptoms of overexposure may include:
Dizziness, headache, nausea, rapid breathing, shortness of breath, deeper breathing and increased heart rate (tachycardia).

FIRST AIDS MEASURES

- Start by removing the exposed person from the exposure.
- Seek fresh air.
- Trained personnel should administer CPR if person shows signs of inadequate breathing.
- In cases of overexposure to liquid or solid carbon dioxide, quickly remove contaminated clothing and rinse contaminated skin gently with lukewarm, not hot, water.
- Do NOT rub any skin or affected areas.
- Transfer promptly to a medical facility for evaluation and treatment.

MANAGING EMERGENCIES AND SPECIAL SITUATIONS.



GENERAL PRECAUTIONS

- Always wear protective gloves when handling cold or frosty bottles.
- REAL C.S. bottles supply gas under high pressure.
- High pressure gases have the potential to cause serious injury.
- Consult SDS for more details on any hazardous product.

CARBON DIOXIDE RELEASES

- Carbon dioxide is a non-flammable gas that is heavier than air.
- When a carbon dioxide release occurs, it is important to determine the type of leak (liquid or gaseous) as well as the origin and the extent of the release.
- The only evidence that a leak has occurred may come in the form of noise (pressurized gas escaping into the atmosphere) and/or the appearance of dry ice snow, frost, or fog.
- When liquid carbon dioxide is exposed to atmospheric pressures, it expands rapidly, creating large volumes of gas and dry ice.

IF A BOTTLE RELEASES

- A full REAL C.S. CO₂ bottle will release about 7.7 ft³ of gas.
- If a full cylinder releases inside the average home (1500 sq ft) and disperses, it would result in a concentration of about 0.064%.
- This concentration is well below all recognized safety limits, so there would normally be no need to evacuate unless other hazards were present, or the release occurred inside a confined space.
- Keep people and pets away from the immediate area to avoid hazards from the liquid CO₂.
- Don't handle the canister until it has warmed to room temperature.
- Call Chemtrec in the event of a transportation emergency: 1-800-424-9300