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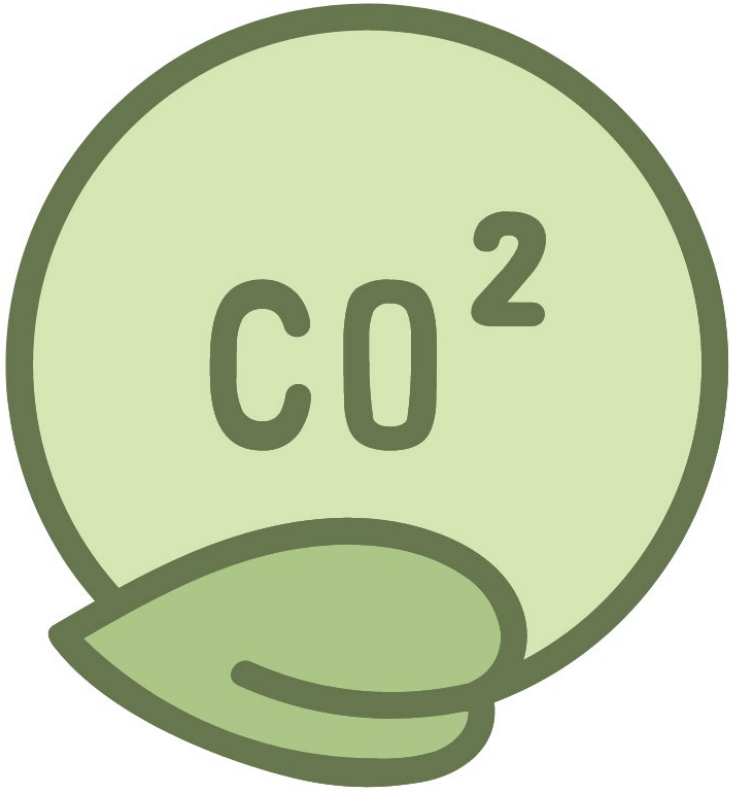
Carbon Dioxide Training

This Training Will Address:

- Carbon Dioxide General Information
- Instructions for Boxing and Shipping Empty Canisters
- Safety Information about Carbon Dioxide
- Handling Special Situations and Emergencies

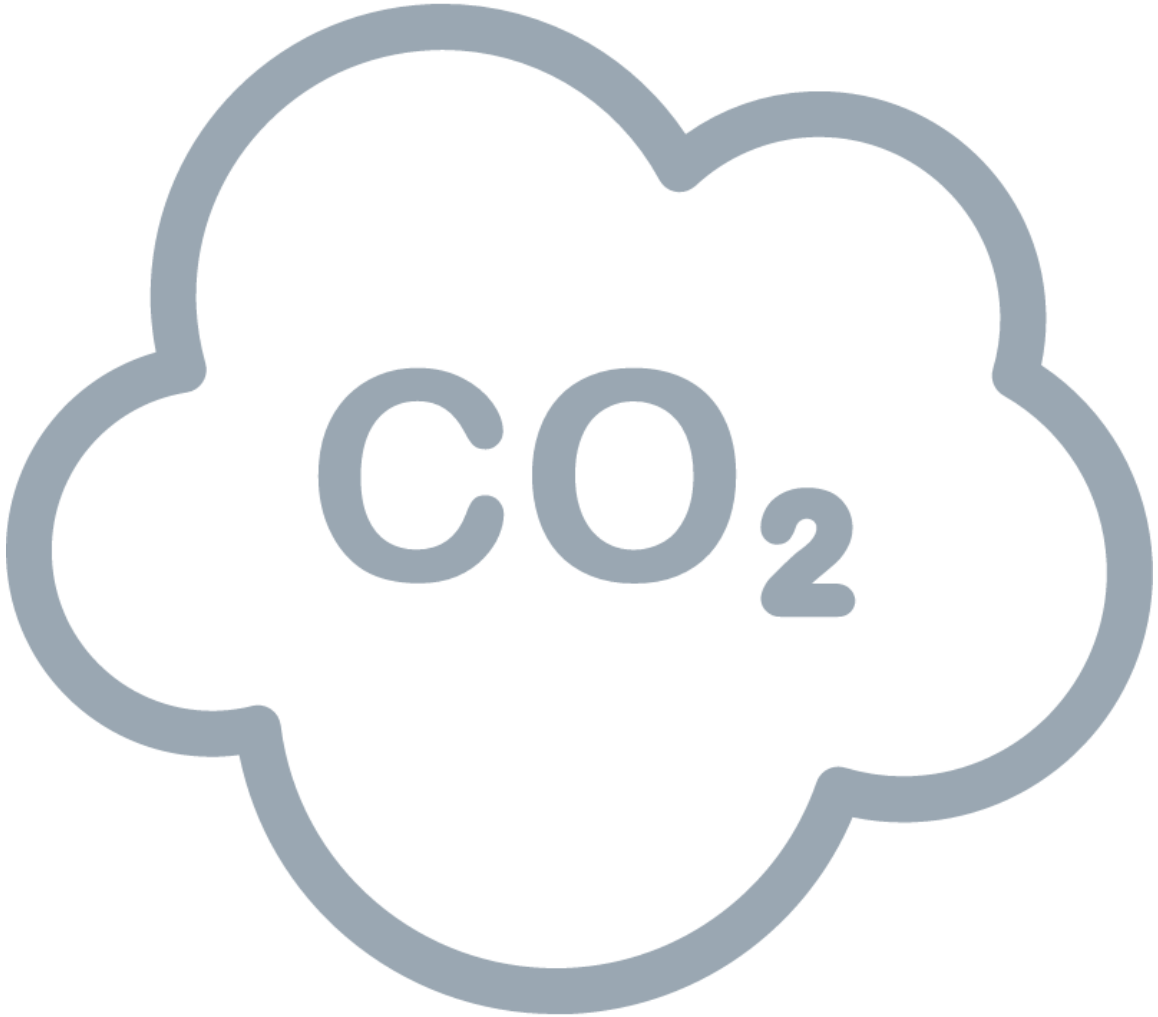


General Information About Carbon Dioxide

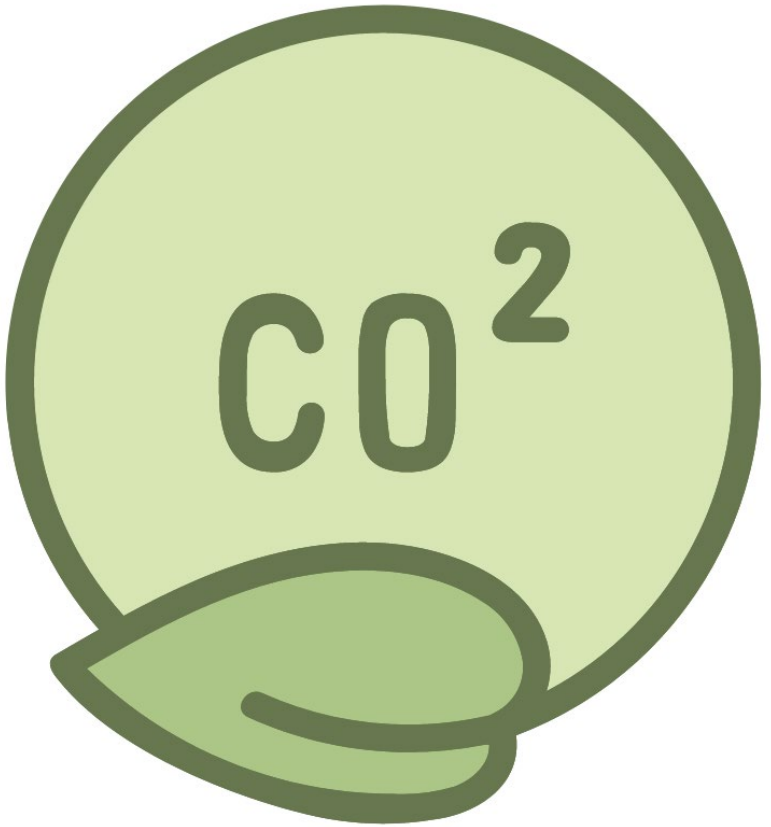
About Carbon Dioxide

- Carbon dioxide (CO_2) is a product of human and animal metabolism and is important to the life cycle of all types of plants.
- In its most common form, it is a gas, but depending on the temperature and pressure, it may exist as a gas, a liquid, or a solid.

- Carbon dioxide is a common and abundant gas on earth.
- Carbon dioxide comprises approximately 0.038 percent by volume of the earth's atmosphere at sea level.



- Gaseous carbon dioxide is about 1½ times as heavy as air, meaning it will tend to sink in normal air.
- It is nontoxic.
- CO2 is soluble in water, colorless, and odorless.
- Carbon dioxide is non-flammable and will not burn, and it is not considered to be an oxidizer in a fire. (It is used in some fire extinguishers)



Boxing and Shipping Canisters

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Exchanging Canisters

- Step 1 – Verify the canisters are empty by depressing the center pin with a spoon to remove any remaining CO@. Wear gloves to protect hands since CO2 will be cold when released.
- Step 2 – Inspect canisters (see next page). Twist on provided caps to seal the canisters.
- Step 3 – Place 2 empty canisters in the exchange box. (Must return 2 empty canisters).
- Step 4 – Place Included return label over the existing label.
  - Tape the box closed.
  - Place in mailbox.

Inspecting Canisters

- It is essential that each canister is inspected prior to shipping. Damaged canisters cannot be shipped or refilled.
- Inspect for:
  - Dents
  - Damaged valve or cylinder body
  - Gouges
  - Bulges
  - Contamination or corrosion
- Damaged canisters should be discarded.

Carbon Dioxide Safety Information

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Chilly Properties

- Liquid carbon dioxide is very cold and can cause frostbite, a cryogenic injury resembling a burn.
- Avoid touching uninsulated frosty canisters containing liquid or the cold vapor issuing from it; you can suffer frostbite, or your skin may stick fast to the cold surfaces.

Effects of Excess CO2

- 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 Aid 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.

Handling Special Situations and Emergencies

General Precautions

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

CO2 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 Canister Releases

- A full Simpli Soda CO2 cylinder will release about 7.7 ft^3 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