

Carbon Dioxide (CO₂)-Calibration Gas

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Carbon Dioxide (CO₂)

Carbon Dioxide or CO₂ is a very versatile substance and is the 4th most common gas that occurs naturally in Earth's atmosphere. It is an odorless, colorless gas that has been reported to have a slight acidic taste. Carbon Dioxide is not flammable nor will not support combustion, in fact it is used in the manufacture of some fire extinguishers as a way to displace the oxygen and cool down the fuel. The Oxygen we breathe in is converted into CO₂ when we exhale, which contributes to the dangers of Carbon Dioxide in confined spaces. Although relatively harmless, CO₂ displaces Oxygen and can cause asphyxiation when the Oxygen levels reach below 17%. Typically CO₂ is not harmful in low concentrations, but it's when an environment becomes Oxygen deficient is when it can become lethal.



Carbon Dioxide is normally stable and considered to be a NON-REACTIVE GAS with the exception of its reaction to heated magnesium.

Also Known As

Carbonic Acid Gas
Carbonic Anhydride
Carbonic Oxide
Carbon Oxide
Dry Ice (Solid form)

Occupational Exposure Limits for Carbon Dioxide

The TLV or Threshold Limit Value for Carbon Dioxide is 0.5% or 5000ppm. This percentage represents the time weighted average that a worker may be exposed to CO₂ during an 8hr work day. This is where air monitoring devices become essential in ensuring health and safety of personnel by making certain that the Oxygen level remains above 19.5% and the CO₂ level does not exceed the recommended TLV while in a confined space.

Health Effects/Symptoms Caused by CO₂ Exposure

Carbon Dioxide or CO₂ is an essential gas that is expelled by all living beings and is relatively not harmful as it is literally all around us at all times. Confined space workers are more at risk for Carbon Dioxide Poisoning as confined spaces are sealed environments which will allow the buildup of CO₂ and the decrease in O₂ levels as breathing occurs. Minimum exposure is inevitable, but once concentration reaches high levels you may start to exhibit symptoms that are caused by an over abundance of Carbon Dioxide in your bloodstream and they could quickly become life threatening.

Common Symptoms

- Sleepiness
- Headaches
- Dizziness
- Reduced Hearing
- Loss of Attention/Confusion
- Increased Heart Rate
- Slight Nausea
- Visual Disturbances
- Sweating
- Unconsciousness
- Asphyxiation



Industrial Uses for Carbon Dioxide (CO₂)

Carbon Dioxide is a very versatile and necessary gas to humans and in the manufacturing world alike. It is used in many industrial applications in both its solid and liquid form. Some industries that utilize Carbon Dioxide (CO₂) include the metals industry, Pharmaceutical Industry, Rubbers and Plastics industry, Food and Beverage industry and in the Health Care industry just to name a few. Carbon Dioxide is that "fizz" you feel when you drink a soda. You may know of or may have even used dry ice, but did you know that dry ice is just Carbon Dioxide in a solid form.

Handling & Storage of Carbon Dioxide Calibration Gas Cylinder

Carbon Dioxide (CO₂) is often is a compressed liquified gas whose contents are under pressure. In order to maintain a safe environment, all who work with calibration gas cylinders should obtain proper training beforehand. You want to handle Carbon Dioxide calibration gas cylinders with extreme caution, as dropping one or accidentally opening valves could lead to catastrophic consequences. As always, you want to ensure that you read your Material Safety Data Sheets to follow all specific manufacturer requirements pertaining the calibration gases that you work with.

Dos and Don'ts

DO use gloves when handling cylinders

DON'T handle cylinders with wet hands as it could cause the cylinder to slip and fall

DO secure cylinders in an upright position

DON'T store cylinders in direct sunlight or near other sources of heat

DO use a suitable transportation device such as a cart or trolley

DON'T travel with calibration gas cylinders in a vehicle without adequate ventilation

Considerations for Methods of Disposal of CO₂ Calibration Cylinders

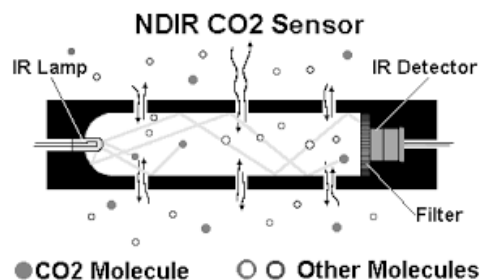
When looking into the proper disposal of calibration gas cylinders, there are a few things that you should consider to ensure the health and safety of fellow co-workers and the environment around you. For unused portions of any calibration gases, you should contact the

supplier and/or manufacturer for recommendations or instructions for recycling or sending empty cylinders back to them. You want to consider the impact that the gas may have or the contamination that may occur if released due to improper disposal. These considerations include the toxicity of the gas, potential for explosions, and impact on air quality in general.

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Detection of Carbon Dioxide in Confined Spaces

Detection of Carbon Dioxide (CO₂) is most crucial in confined spaces, more specifically, in densely populated confined spaces. An NDIR sensor or non-dispersive infrared CO₂ sensor is the standard CO₂ sensor used in the industry for detection of this potentially harmful gas.



Carbon Dioxide Calibration Gas

Egas Depot offers a wide range of [Carbon Dioxide Calibration Gases](#). With 13 different liter sizes and over 40 different options for your ppm and LEL requirements available to you, we are a one-stop shop for all of your field calibration needs.