

Safe Handling of Dry Ice (Solid CO₂)

Dry ice is solid carbon dioxide (CO₂). It is made by compressing and cooling gaseous CO₂ until it liquefies

Expansion converts the liquid into the snow form of the solid state. The snow is then compressed by a hydraulic press into dry ice blocks, slices or pellets.

Solid Carbon Dioxide - CO₂ is very cold: -70°C. It turns from a solid to an asphyxiant gas that is heavier than air. It is important to note that a little bit of dry ice will sublime to a large volume of gas.

Dry Ice Safety

Before handling and using dry ice it is important to understand its properties and potential hazards, and familiarize yourself with actions to take in an emergency



Properties

- Dry ice is carbon dioxide in solid state
- Chemical formula is CO₂
- A translucent, white solid; at normal temperatures sublimates directly into a gas without passing through a liquid phase
- Non-flammable
- Temperature of dry ice is -70°C
- Asphyxiant
- Colorless gas with a slightly pungent odor which is only detectable in high concentrations.

Hazards

- Asphyxiation - In high concentrations, sublimed vapor may cause asphyxiation. 10kg of dry ice sublimates into about 5.4 m³ of carbon dioxide gas.
- Extreme cold - Contact with dry ice can cause cold burns and frostbite.

Tips

- Do not handle dry ice with bare hands; it can cause severe cold burns and frostbite
- Before using dry ice in any area, establish the risks involved
- Ensure you consider the potential of creating an atmosphere with a high concentration of carbon dioxide near the ground
- Only experienced and properly instructed people should handle dry ice
- Do not remove or damage any product labels
- Know and understand the properties of dry ice
- Establish emergency plans
- Always seek professional advice on suitable ventilation systems
- Use carbon dioxide monitors to warn of ventilation problems
- Never play games with dry ice
- Always keep dry ice away from children
- Water on solid CO₂ increases sublimation with a corresponding higher risk of asphyxiation
- Always wear eye protection and cryogenic hand gloves suitable for the extreme cold temperature of dry ice
- Dispose of dry ice in a well-ventilated area away from the public. Do not discharge into any place where its accumulation could be dangerous
- Take care when carrying packages of dry ice.