



DRY ICE - PAYING ATTENTION TO THE CARGO ON THAT ROLLOVER IS EVEN MORE CRITICAL TODAY.

ATRB recently received a copy of a white paper or safety bulletin for a dry ice response prepared by the [International Association of Fire Chiefs](#). With the delivery of Covid 19 vaccines the probability of encountering a shipment packed with dry ice has increased for first responders, including tow operators. Below are a few on-point excerpts from the bulletin that are worth noting.

Solid carbon dioxide, or dry ice, is an extremely cold material and will be used in the COVID-19 vaccine storage and transport system.

Some of the first generation COVID-19 vaccines require ultra-low temperature storage until a time just prior to use. The unprecedented creation, movement, and storage of these materials at ultra-low temperatures (approximately -80°C) will present hazards for first responders at a variety of locations if the materials are not transported or handled correctly or are involved in an accident.

Oxygen Deficiency - The primary health hazard occurs when dry ice returns to its gaseous carbon dioxide state. The gas quickly expands and displaces oxygen inside enclosed spaces such as in transport compartments, small buildings, walk-in coolers, etc. The 'off-gassing' from dry ice can occur quickly and result in oxygen displacement. A 0.5% drop in the oxygen level due to the presence of carbon dioxide gas can result in unconsciousness.

Exposure to those oxygen deficient atmospheres can quickly lead to poor judgment, impaired ability to escape, and unconsciousness. Deaths have occurred from these situations.

Thermal Burns – Contact with unprotected skin will cause severe thermal injury equivalent to full-thickness burns. Unprotected skin may become stuck to the material or container.

Scene Management & Personal Safety – An incident may require a buddy system with a backup team to operate safely in and around these CO₂ atmospheres. Self-contained breathing apparatus is required for respiratory protection. Structural turnout gear, fire gloves, and extrication style gloves offer limited protection to extreme cold temperatures; they can be utilized to make immediate rescues only. They should not be relied upon to handle dry ice products or containers. Specialized cryogenic gloves, approved for cold contact and conductive cold, are required when handling dry ice or damaged and leaking containers. **IF YOU ARE NOT PREPARED OR TRAINED STAY AWAY FROM DRY ICE PACKED CARGO.**

Storage Information – Dry ice must be stored in well-ventilated locations and placed in insulated and ventilated storage containers, insulated coolers, or special containers designed for the storage of dry ice. Due to its thermal expansion, dry ice should never be stored in a tightly sealed container such as an ultra-low freezer or glass container.

Vaccine Concerns – The vaccines themselves are not harmful if accidentally released, spilled, or released from broken containers. They contain no "live" or toxic material.

If possible, every attempt should be made to preserve the ultra-cold environment for the protection of the vaccines.

The article above was prepared from excerpts taken from the [IAFC Hazardous Materials Committee, White Paper on Dry Ice \(carbon Dioxide\) Response](#), prepared by the International Association of Fire Chiefs, November 23, 2020.+



Arkansas Towing and Recovery Board