

## Extinguishing Agent

### Carbondioxide (CO2)

#### Description

Carbon Dioxide is an odorless, colorless, electrically non-conductive, non-corrosive, and non-deteriorating inert suppression agent. Carbon Dioxide is approximately 50% heavier than air, and is normally present in the atmosphere at about 0.03% by volume. Carbon Dioxide is instrumental in controlling respiration and other vital responses in animals and humans, but it WILL NOT support life.

Carbon Dioxide is a standard commercial product commonly used for carbonating beverages, fast-freezing food products, purging pipes and tanks, medical purposes, and a multitude of additional tasks. It is also used for fire fighting purposes: i.e. hose reels, portable hand extinguishers, and engineered fixed pipe systems. Carbon Dioxide is available in most large cities and seaports throughout the world.

Carbon Dioxide extinguishes fire by reducing the oxygen content of the protected space and/or local flame front to a point where it will not support combustion. Oxygen reduction below 16% by volume will extinguish most fires. Surface or “flash” type fires (oils, paints, etc.) are quickly extinguished. Deep-seated or “smoldering” type fires (paper, baled cotton, clothing, etc.) are extinguished by the prolonged action of a high concentration of Carbon Dioxide. Retaining the agent within the protected space reduces the fire’s ability to re-ignite. In addition, Carbon Dioxide has a cooling effect on the surrounding atmosphere that has been found to be a benefit to fire extinguishment.

#### Specification

Chemical Name	Carbon Dioxide
Chemical Formula	CO <sub>2</sub>
Molecular Weight	44.01
Critical Temperature	31.00C
Boiling Point	-109.30F
Vapor Pressure @ 68OF	832 PSIG
Vapor Density @ 68OF	1.53
Solubility in Water @ 68OF	87.8% by Volume
Appearance and Odor	Colorless Gas, Slight Pungent Odor