Carbon Dioxide Asphyxiation

You can suffer an accidental death by asphyxiation from carbon dioxide (CO2). Customer employees, supplier employees, need to know and understand its properties and recognize potential asphyxiation situations.

CO2 Need to Know Facts
- It is a colorless, odorless gas and about 1.5 times as heavy as air. Since it is denser than air, high concentrations can occur in open pits and other areas below grade.
- It is an asphyxiant and displaces oxygen, which can cause death. At concentrations of 10 percent and above, it can result in unconsciousness in 1 minute or less.
- It can cause asphyxiation when leaks or discharges occur in enclosed areas, poor or unventilated work areas, or below grade locations that are not confined spaces.
- It can result in impairment in performance during prolonged exposure of 3 percent.
- It can increase the heart rate and blood pressure and can cause headaches, dizziness, sweating, rapid breathing, shortness of breath, dizziness, mental depression, visual disturbance, or shaking depending on the length of exposure and the strength of the concentration.

Other Facts About CO2
- Basement liquid container installations should be avoided if at all possible.
- Liquid container installations that are in confined, low or restricted space should have appropriate warning signs and floor-mounted positive ventilation systems to prevent both asphyxiation and pressure buildup.
- If concentrations of CO2 in the atmosphere are possible, a CO2 detector with an alarm system should be in place.
- The outlet from the pressure relief device on a liquid container must be piped outdoors for indoors, restricted, confined or limited space installations.
- Any type of built in gas discharge should be piped outdoors.
- All fill connections for liquid containers should be piped so the connections are made outdoors.
- Suggested wording for warning sign is:

   CAUTION
   CARBON DIOXIDE GAS
   Ventilate before entering
   A high CO2 gas concentration may occur in this area and may cause asphyxiation.