

# UNDERSTANDING CARBON DIOXIDE HAZARDS IN FOOD AND BEVERAGE INDUSTRY



**CARBON DIOXIDE CAN  
CREATE A HAZARDOUS  
ATMOSPHERE.**

CARBON DIOXIDE (CO<sub>2</sub>) CAN BE USED AS A GAS, LIQUID, OR SOLID (DRY ICE). IN THE GASEOUS STATE IT IS ODORLESS, COLORLESS, AND TASTELESS MAKING IT UNDETECTABLE TO PERSONS IN THE AREA. EVEN WHEN ADEQUATE OXYGEN IS PRESENT, EXPOSURE TO CARBON DIOXIDE CAN LEAD TO CO<sub>2</sub> POISONING. AN ASPHYXIATION HAZARD CAN ALSO EXIST. FOLLOW STATE AND LOCAL BUILDING AND FIRE CODES.



**RECOGNIZE AND BE  
AWARE OF AREAS WHERE  
CO<sub>2</sub> CAN ACCUMULATE**



- ⚠️ CO<sub>2</sub> CAN ACCUMULATE IN:
  - ➡️ AREAS WHERE CO<sub>2</sub> IS STORED OR USED, INCLUDING ADJACENT AREAS.
  - ➡️ CONFINED, ENCLOSED, OR LOW-LYING SPACES.
  - ➡️ AREAS WHERE CO<sub>2</sub> IS VENTED.
- ✅ UNDERSTAND AND ADHERE TO POSTED WARNING SIGNS.



**MONITOR AND VENTILATE  
FOR CO<sub>2</sub> AS REQUIRED  
BY CODE**



- ⚠️ CO<sub>2</sub> CAN ACCUMULATE TO DANGEROUS LEVELS EVEN WHEN ADEQUATE OXYGEN IS PRESENT FOR LIFE SUPPORT.
- ⚠️ MEASURING OXYGEN CONTENT IS NOT AN EFFECTIVE INDICATION OF THE CO<sub>2</sub> POISONING HAZARD.
- ✅ MAINTAIN ADEQUATE VENTILATION.
- ✅ USE CO<sub>2</sub> DETECTORS WITH AUDIBLE AND VISUAL WARNING DEVICES. ROUTINELY INSPECT, MAINTAIN, AND CALIBRATE DETECTORS.



**NEVER MODIFY OR  
TAMPER WITH CO<sub>2</sub>  
SYSTEMS OR  
EQUIPMENT**



- ⚠️ CHANGES TO THE GAS SYSTEM CAN CREATE LEAKS OR OTHER HAZARDOUS SITUATIONS. SOME VALVES, REGULATORS, HOSES, AND EQUIPMENT USED FOR OTHER GASES ARE NOT COMPATIBLE WITH CO<sub>2</sub>.
- ⚠️ DO NOT MODIFY OR TAMPER WITH GAS SUPPLIER OWNED EQUIPMENT.
- ✅ SYSTEM CHANGES SHALL BE EVALUATED AND MANAGED ONLY BY QUALIFIED PERSONS.



**USE REQUIRED  
PERSONAL  
PROTECTIVE  
EQUIPMENT (PPE)**



- ⚠️ REFRIGERATED LIQUID CO<sub>2</sub> AND DRY ICE ARE EXTREMELY COLD AND CAN FREEZE TISSUE ON CONTACT. IF SWALLOWED, LIQUID CO<sub>2</sub> AND DRY ICE CAN CAUSE SERIOUS INJURY OR DEATH.
- ✅ WEAR GLOVES AND EYE PROTECTION WHEN HANDLING EQUIPMENT CONTAINING CO<sub>2</sub>. ADDITIONAL PPE MAY INCLUDE HEARING PROTECTION, SUPPLIED AIR BREATHING APPARATUS, PERSONAL MONITOR, AND SAFETY SHOES. SEE SAFETY DATA SHEET (SDS) FOR GUIDANCE.



**NEVER ENTER AN AREA OF  
HIGH CO<sub>2</sub> CONCENTRATION  
WITHOUT PROPER TRAINING  
AND PPE**



- ⚠️ ENTERING AREAS WHERE HIGH CONCENTRATIONS OF CO<sub>2</sub> EXIST CAN PRESENT AN IMMEDIATE DANGER TO HUMAN LIFE.
- ⚠️ BREATHING IN HIGH LEVELS OF CO<sub>2</sub> CAN CAUSE HEADACHE, DIZZINESS, RAPID BREATHING, INCREASED HEART RATE THAT CAN LEAD TO UNCONSCIOUSNESS AND DEATH.
- ✅ ESTABLISH, KNOW, AND PRACTICE EMERGENCY PROCEDURES. EMERGENCY RESCUE SHALL ONLY BE INITIATED BY TRAINED PERSONNEL WHO HAVE THE NECESSARY EQUIPMENT AND SUPPORT.

