

UNDERSTANDING CARBON DIOXIDE HAZARDS IN FOOD AND BEVERAGE INDUSTRY



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

CARBON DIOXIDE (CO₂) 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 CO₂ POISONING. AN ASPHYXIATION HAZARD CAN ALSO EXIST. FOLLOW STATE AND LOCAL BUILDING AND FIRE CODES.



**RECOGNIZE AND BE
AWARE OF AREAS WHERE
CO₂ CAN ACCUMULATE**



- ⚠️ CO₂ CAN ACCUMULATE IN:
 - ➡️ AREAS WHERE CO₂ IS STORED OR USED, INCLUDING ADJACENT AREAS.
 - ➡️ CONFINED, ENCLOSED, OR LOW-LYING SPACES.
 - ➡️ AREAS WHERE CO₂ IS VENTED.
- ✅ UNDERSTAND AND ADHERE TO POSTED WARNING SIGNS.



**MONITOR AND VENTILATE
FOR CO₂ AS REQUIRED
BY CODE**



- ⚠️ CO₂ CAN ACCUMULATE TO DANGEROUS LEVELS EVEN WHEN ADEQUATE OXYGEN IS PRESENT FOR LIFE SUPPORT.
- ⚠️ MEASURING OXYGEN CONTENT IS NOT AN EFFECTIVE INDICATION OF THE CO₂ POISONING HAZARD.
- ✅ MAINTAIN ADEQUATE VENTILATION.
- ✅ USE CO₂ DETECTORS WITH AUDIBLE AND VISUAL WARNING DEVICES. ROUTINELY INSPECT, MAINTAIN, AND CALIBRATE DETECTORS.



**NEVER MODIFY OR
TAMPER WITH CO₂
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 CO₂.
- ⚠️ 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 CO₂ AND DRY ICE ARE EXTREMELY COLD AND CAN FREEZE TISSUE ON CONTACT. IF SWALLOWED, LIQUID CO₂ AND DRY ICE CAN CAUSE SERIOUS INJURY OR DEATH.
- ✅ WEAR GLOVES AND EYE PROTECTION WHEN HANDLING EQUIPMENT CONTAINING CO₂. 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 CO₂ CONCENTRATION
WITHOUT PROPER TRAINING
AND PPE**



- ⚠️ ENTERING AREAS WHERE HIGH CONCENTRATIONS OF CO₂ EXIST CAN PRESENT AN IMMEDIATE DANGER TO HUMAN LIFE.
- ⚠️ BREATHING IN HIGH LEVELS OF CO₂ 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.

