

PLAYING IT SAFE

Be safe and healthy on the job at with these helpful tips provided by Bankers Insurance, LLC.

Toxic Gas Concerns in Agribusiness

Precautions around silos, manure pits and grain bins

You already know how important it is to wear effective protective equipment on the job to prevent injury and illness. In agriculture, air-purifying respirators, powered air purifiers, gas masks and air-supplied respirators are crucial for preventing long-term damage.

However, engineering controls and personal protective equipment are just the first lines of defense against toxic gases. It is also important to know what kinds of poisonous substances you work around so you can identify symptoms and warning signs.

The following toxic gases are commonly found in and around agricultural buildings, especially silos, manure pits and grain bins. Use this information to better equip yourself to stay safe on the job and identify when hazards exist.

Hydrogen Sulfide (H₂S)

- Has a distinct, putrid, rotten egg smell, is extremely flammable and is heavier than air
- Workers exposed to the gas even for a short time become immune to the odor.
- Symptoms include eye and respiratory tract irritation, headache, nausea and dizziness.
- Causes death at high concentrations

Ammonia (NH₃)

- Colorless gas with a distinct, pungent odor that is heavier than air
- Causes eye and respiratory tract irritation as well as ulceration to the

eyes in high concentrations

Carbon Dioxide (CO₂)

- Common sources in agribusiness are soil, plant and animal respiration as well as microbial respiration in manure
- Acts as an asphyxiant by replacing oxygen in the air, which is especially dangerous to both humans and animals in confined spaces or poorly ventilated buildings
- Odorless and difficult to detect
- Early symptoms are dizziness and shortness of breath.

Methane (CH₄)

- Odorless and lighter than air
- Accumulates on top of manure pits
- Main hazard is its ability to easily ignite and explode

Nitrogen Dioxide (NO₂)

- Sharp, biting odor and red-brown in color, but only visible at very high concentrations
- Extremely toxic, but easily detected by smell
- Present at the bottom of enclosed spaces
- Symptoms include bronchitis, pneumonia and severe lung damage.



Did You Know?

Many people think gas masks protect against all inhalation hazards. The truth is, gas masks are more effective than chemical cartridge respirators in high concentrations of toxic gases, but are extremely dangerous in oxygen-limited environments. Make sure you choose the right protective equipment for the job.

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