Understanding Gases

Ammonia

NH_3

Ammonia is a compound of nitrogen and hydrogen, with the formula NH3. It is a colourless and pungent gas.

It is the simplest stable compound of these elements and serves as a starting material for the production of many commercially important nitrogen compounds.

Ammonia occurs naturally throughout the environment, in air, soil and water and is the only common alkali gas. It has a characteristic smell, but is highly reactive with acid gases, which can mask its presence.

80%

About 80% of the ammonia produced in industry is used in agriculture as fertilizer. Ammonia is also used as a refrigerant gas, to purify water supplies, and in the manufacture of plastics, explosives, fabrics, pesticides, dyes and other chemicals. It is found in many household and industrial-strength cleaning solutions. Cleaning solutions for industrial use contain higher concentrations of ammonia and can quickly cause irritation and burns.

50ppm

OSHA: The legal airborne permissible exposure limit (PEL) is 50ppm averaged over an 8-hour workshift.

What are the dangers of Ammonia?

It's classified as an extremely hazardous substance and unless well-maintained, catastrophic Ammonia leaks can occur from refrigeration systems and with that, injury and even death. Serious incidents can occur when pipes are ruptured or there are leaks from shaft seals, pipe flanges or valves during maintenance.

Ammonia poses both a toxic and a flammable risk and is caustic in its concentrated form. The risks of gas escape will depend on the site and the size of leak, whether indoors or outdoors; the nature and quality of ventilation; moisture in the atmosphere or whether the leak presents an explosive or toxic risk.

How do you detect, measure and report Ammonia?

Ammonia is detected with electro-chemical and catalytic sensor technology.

Portable detection, including single gas or multi-gas detectors can monitor instantaneous and time weighted average exposure to toxic levels of Ammonia.

Fixed detection systems may include a combination of toxic and flammable level detectors (depending on your application). Fixed systems can also be used for process over-rides and ventilation control.

You must consider where you place your detectors as the density of gas can accumulate at height and pose a toxic risk at breathing level.

Rinse eyes thoroughly with large amounts of water. Blot or brush away excess chemicals and flush the skin with lean water, removing clothing that may have come into contact with Ammonia

Ammonia can affect you when inhaled. Contact can severely irritate and burn skin and eyes with possible eye damage.

Ammonia is corrosive and is classified as an extremely hazardous substance.

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hello@crowcon.com

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