

Ammonia



Where is it found?

Ammonia (NH₃) is a colourless gas with a pungent odour that can be detected by humans at 0.4-1 ppm, being the exposure limit 50 ppm. NH₃ is originated from both natural and anthropogenic sources, being the main source agriculture (fertiliser application and fabrication) and livestock (manure management), followed by the waste and water management (slurries, composting and landfills). Other sources are household and industrial cleaners, that can affect directly to humans exposed to them.

Why is it harmful?

NH₃ is a volatile gas poisonous if inhaled at high concentrations, causing respiratory tract and eyes irritation, while causing throat and skin irritation in lesser amounts. It is highly soluble in water, so it is associated with acid deposition, eutrophication, affecting to land and water ecosystems by reducing the biodiversity. Besides, it is explosive when mixed with air or oxygen at very high concentrations. NH₃ also contributes to the formation of particulate aerosols in the atmosphere as a secondary particulate precursor.

NH₃ cartridge

K-NH3-A-01

The Ammonia cartridge has a built-in electrochemical sensor capable of measuring from low to high concentrations with a typical noise below 0.1 ppm when the ambient temperature is under 25°C. The Cartridge presents cross-sensitivities with NO₂, O₃, Cl₂ and SO₂ that can be negligible in most applications. However, it also presents cross-sensitivity to H₂S, which is quite relevant because they can co-exist and both measurements can be essential for the same purpose. That's why, it is recommended to use it together with the H₂S cartridge, which allows the Kunak algorithm to correct from this cross-sensitivity.



Technical specifications

Type	Electrochemical	Limit of Detection (LOD) ⁽⁷⁾	0.1 ppm
Unit of measurement	mg/m ³ , ppm	Response time ⁽⁹⁾	< 45 sec
Measurement range ⁽¹⁾	0 - 50 ppm	Typical accuracy (MAE) ⁽¹⁰⁾	± 0.3 ppm
Resolution ⁽²⁾	0.01 ppm	Typical Intra-model variability ⁽¹²⁾	< 0.1 ppm
Operating temperature range ⁽³⁾	-10 to 50 °C		
Operating RH range ⁽⁴⁾	0 to 99 %RH		
Recommended RH range ⁽⁴⁾	15 to 90 %RH		
Operating life ⁽⁵⁾	> 24 months		
Guarantee range ⁽⁶⁾	100 ppm		

* See notes on page 28