

NEW SENSORS FOR NH₃ MEASUREMENT

With the new ammonia PAS – Photoacoustic Sensor we extend our product family.

Ammonia is used in different industries such as the agriculture sector, steel sector, woodworking sector, emission control sector, plastic sector, refrigeration sector, energy sector, or even in private household as a cleaner. At room ammonia is a colourless gas with a distinct pungent smell. It is a good solvent for metals or salts. The dangers of ammonia include severe skin burns and eye damage, it is toxic if inhaled and is very toxic to aquatic life with long lasting effects. The advantages of ammonia are its non-existent global warming potential or harmless of the ozone layer. Ammonia is used between – 60° to +100° C.

Applications for ammonium:

Agriculture sector:

Ammonia is used as a fertilizer as well as for straw fumigation. It occurs also in the fermentation process within biogas plants.

Steel sector:

NH₃ is needed for bright annealing of steel and for extracting zinc and nickel. Also used as a protective gas for welding.

Woodworking sector:

Ammonia fumes react with the natural tannins in the wood and cause it to change colours.

Emission protection sector:

NH₃ is used for flue gas cleaning.

concentration in ppm	effect
10 – 20	odour threshold
more than 20	harassment
50	MAK (workplace limit)
100	noticeable irritation of the mucous membranes
300 – 500	maximum 1h tolerable
700	irritation and damage to the eyes
1700	vocal cramp, cough
2500 – 6500	life-threatening at 30 minutes exposure

Plastic sector:

It is used to produce nylon and polyamide.

Refrigeration Sector:

Also known as R717, NH₃ used as refrigerant in industrial refrigeration and ice stadiums

Energy sector:

Ammonia is used as a storage for renewable energy and makes hydrogen transportable in large scales

Further usages:

In the pulp and paper sector, for medicinal products, as smell irritant or catalyst in the chemical sector.

Further links:

- https://www.smartgas.eu/fileadmin/11_1_aktuelle_datenblaetter_pas/DS_PA-242204-0000_NH3_200ppm_01.pdf
- <https://en.wikipedia.org/wiki/Ammonia#Uses>
- https://www.uni-regensburg.de/chemie-pharmazie/anorganische-chemie-pfitzner/medien/data-demo/2011-2012/ammoniak_khsh.pdf
- <https://www.skwp.de/produkte/agrochemie/allgemeine-informationen/lexikon/verwendung-von-ammoniak/>
- https://www.schickgruppe.de/WordPress/?page_id=239

PAS

Photo acoustic sensor

Ammonia

200 ppm

smartGAS item number:

PA-242204-0000

