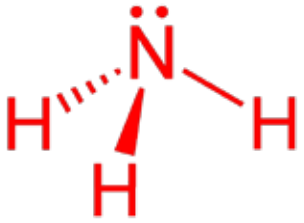
Measuring Ammonia in Gas

Applied Analytics Application Note No. AN-040



Application Summary

Analytes: **NH_3**

Detector: **Model OMA-300 Ammonia Analyzer**

Process Stream: **gas**

Introduction

Ammonia (NH_3) concentration is a critical measurement in a wide range of processes, from monitoring the ammonia levels in an acid gas inlet to an SRU unit to operation to analyzing the performance of a biogas digester. Due to the prominent absorbance curve of ammonia in the UV wavelength domain, UV spectroscopy provides one of the best available measurement technologies.

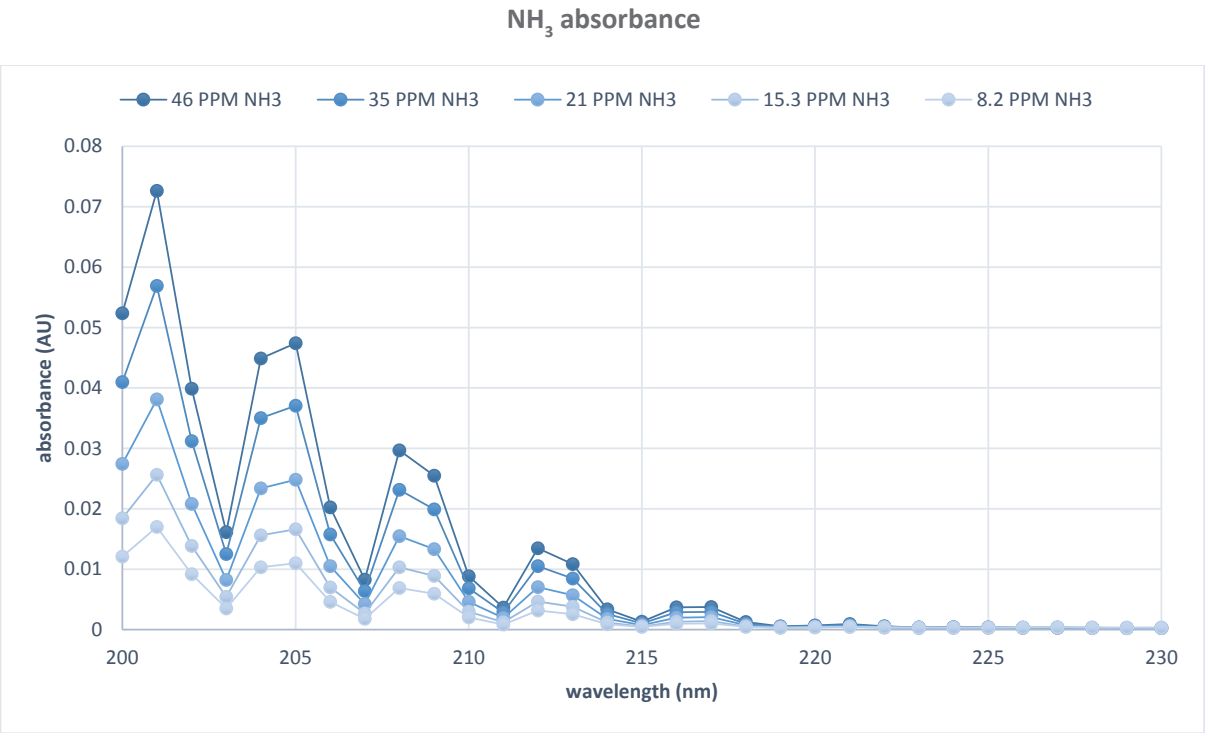
The OMA Ammonia Analyzer continuously measures NH_3 concentration in process gas. Using a high-resolution UV-Vis spectrophotometer, the OMA can easily isolate the absorbance curve of ammonia for an interference-free analysis. Due to the transparency of methane and moisture in the UV absorbance range, the OMA provides an ideal solution for direct measurement of hot, wet samples and natural gas.

OMA Benefits

- Continuously measures ammonia concentration with wide dynamic range
- Totally solid state build with no moving parts — modern design for low maintenance
- Additional software benches available for more analytes

Ammonia Absorbance Curve

The OMA uses a high-resolution UV-Vis spectrophotometer to detect the complete absorbance curve of ammonia:



Example Installation

The OMA system below measures NH_3 (and H_2S) concentration in a biogas reactor:

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The specifications below represent performance of the OMA-300 Process Analyzer in a typical NH_3 in gas application.

For technical details about the OMA-300 Process Analyzer, see the data sheet:
http://aai.solutions/documents/AA_DS001A_OMA300.pdf

All performance specifications are subject to the assumption that the sample conditioning system and unit installation are approved by Applied Analytics. For any other arrangement, please inquire directly with Sales.

Application Data		
Performance Specifications		
Accuracy	*Custom measurement ranges available; example ranges below.*	
	NH_3	0-10 ppm: ±0.5 ppm 0-1,000 ppm: ±1% of reading, full scale 0-1%: ±1% of reading, full scale 0-50%: ±1% of reading, full scale

Further Reading

Subject	Location
OMA-300 Process Analyzer Data sheet	http://aai.solutions/documents/AA_DS001A_OMA300.pdf
Advantage of Collateral Data Technical Note	http://aai.solutions/documents/AA_TN-202_CollateralData.pdf
Multi-Component Analysis Technical Note	http://aai.solutions/documents/AA_TN-203_MultiComponentAnalysis.pdf

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