

Measuring H₂S in Fuel Gas

Applied Analytics Application Note No. AN-057

Application Summary

Analytes:	Hydrogen Sulfide (H₂S)
Detector:	OMA-300 Process Analyzer
Process Stream:	Fuel Gas
Typical Measurement Range:	0-320 ppmv

Introduction

Fuel gas is gas that is recovered from different units throughout a refinery that may be used as a fuel source for certain equipment in the refinery, like heaters or boilers. Fuel gas is typically a mixture of hydrogen and hydrocarbons ranging from C1 to C5. One major issue with burning fuel gas is that fuel gas contains varying amounts of hydrogen sulfide (H₂S). When the H₂S is burned, sulfur dioxide (SO₂) is formed and released into the environment.

The U.S. EPA is responsible for the regulation of sulfur emissions from refineries. The measurement of H₂S in the fuel gas gives an accurate approximation of the amount of SO₂ that will be produced from burning the fuel gas. The EPA requires a measurement range of H₂S from 0 to 320 ppmv.

The OMA-300 Process Analyzer can be implemented to monitor the level of H₂S in the fuel gas being produced inside a refinery. The OMA-300 Process Analyzer continuously outputs H₂S readings, providing new measurements every 5 seconds.

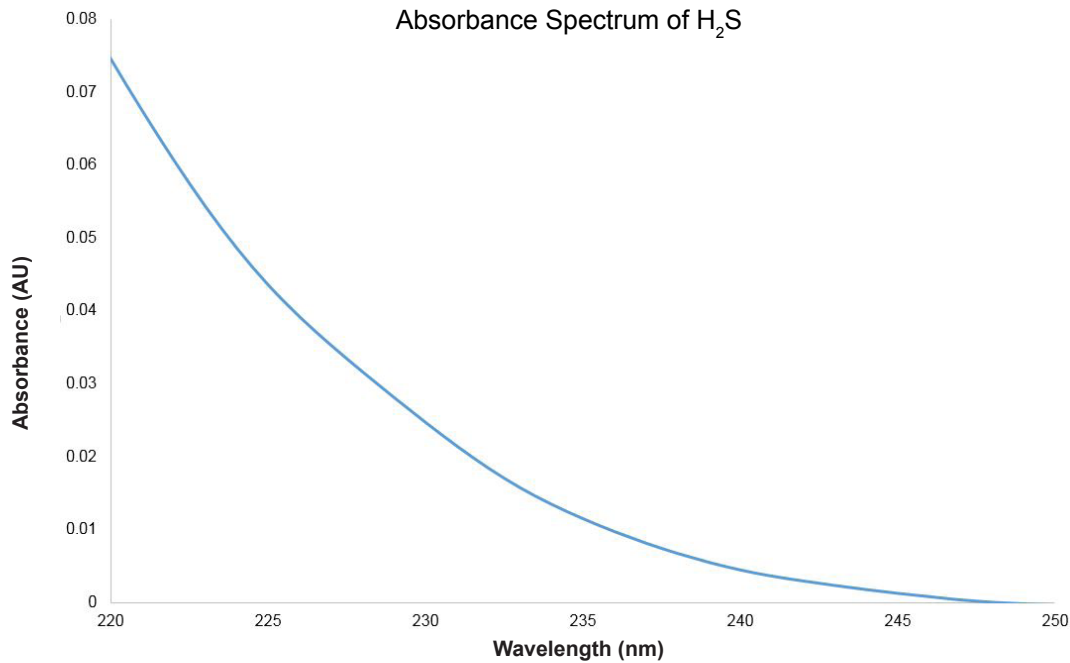
System Benefits

- » Continuously measures hydrogen sulfide levels using UV-Vis spectrophotometer
- » Totally solid-state build with no moving parts — modern design for low maintenance
- » Additional software benches for up to 4 chemical analytes
- » Ultra-safe fiber optic design with no sample gas inside analyzer unit — world's safest solution for this application

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Absorbance spectrum of 80 ppmv H₂S measured with the OMA-300 Process Analyzer.

Further Reading

Subject	Location
OMA-300 H ₂ S Analyzer Data sheet	https://aai.solutions/documents/AA_DS001B_OMA300H2S.pdf
Human Machine Interface Data sheet	https://aai.solutions/documents/AA_DS202A_HMI.pdf
OMA Series Process Analyzers Data Sheet	https://aai.solutions/documents/AA_DS001X_OMAseries.pdf



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