



Ammonia analyser

ER600 | ER625

- Analysis of NH_3 from ppm to high %
- For fertiliser production, industrial and energy applications
- Using TCD (Thermal Conductivity Detector)
- Resistant to harsh media

Get ready for tomorrow's analytics

Ammonia analyser

Ammonia is a widely produced chemical, primarily used as a fertiliser in food production. It is also applied in various industrial processes and biogas production. Increasingly, ammonia is being explored as a fuel and hydrogen carrier in the energy sector.

This creates a demand for analysing concentrations ranging from high ppm to high percentages. For such applications, an inert analysis system resistant to aggressive media and equipped with a Thermal Conductivity Detector (TCD) is a suitable solution.

Principle of operation

The GAS ammonia analyser comprises a gas sampling valve (GSV), a suitable separation column, and Thermal Conductivity Detector (TCD); see figure 1. As ammonia readily adsorbs onto active surfaces, Sulfinert® (SilcoNert 2000®) deactivation is applied to the entire sample path, which is critical for achieving good peak shape and reliable, accurate quantification.



Figure 1 Diagram ppm-% level ammonia analyser



Figure 2 ppm-% level ammonia analyser on Thermo Trace GC1600 (left) and CompactGC^{4.0} (right)

Specification

- Thermo Trace GC1600 or CompactGC^{4.0} with GSV (Gas Sampling Valve) and TCD (Thermal Conductivity Detector)
- Packed or capillary column
- Chromeleon chromatography data system
- Runtime 5 minutes (Trace G1600) / 60 seconds (CompactGC^{4.0})
- Minimum detectability: < 50 ppm
- Repeatability: < 1 %

Results

Figure 3 demonstrates the analysis of 1000 ppm ammonia in biogas using Trace GC 1600. Further dilution demonstrated a lower limit of detection below 50 ppm

Figure 4 shows the fast analysis of high % levels of ammonia using CompactGC^{4.0}.

Injection: GSV (Gas Sampling Valve)
Detection: TCD (Thermal Conductivity Detector)

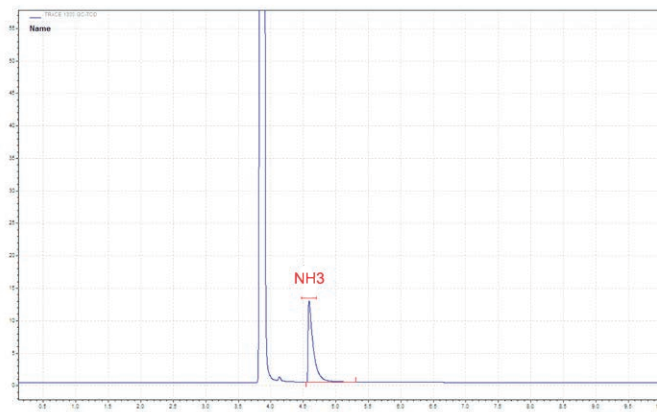


Figure 3 Calibration standard for ammonia analysis in biogas. (1000 ppm in N₂). Trace GC 1600, detector: TCD, LOD <50 ppm

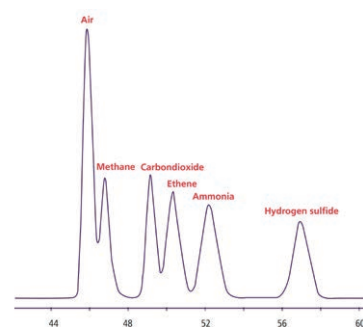


Figure 4 10% NH₃ analysis using CompactGC-TCD. Fast and robust analysis

Ordering information	ER600 - ABCDE Ammonia analyser based on Trace GC 1600			
	ER625- ABCDE Ammonia analyser based CompactGC ^{4.0}			
code X	0	1	2	3
GC model, power	1600, 230V	1610, 230V	1600, 115V	1610, 115V

For the selection of options ABCDE (e.g. valve type and passivation, pump and vacuum sampling, rotameter and sample connections, pressure and moisture sensors, hydrogen sensor for safety shut-off, power plug type and more), see the options table in the order guide.

About GAS

Global Analyser Solutions provides GC & GC-MS solutions for Energy, Refinery, Chemical and Environmental markets. Our analysers address a broad spectrum of measuring requirements with high precision and reliability. Please reach out for more information on our website.

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