

Application Data Sheet

No. 33

System Gas Chromatograph

TOGAS Analysis System with Manual Sampling Nexis GC-2030TOGAS2 GC-2014TOGAS2

A simple and efficient method based on the technique of manual sampling and valve switching is developed for the analysis of TOGAS. The sample is directed into main-column-1 (P-N) through headspace, and separated in groups. The permanent gas and CH₄ are directed into main-column-2 (MS-13X) through 2-1, and H₂, O₂, and N₂ are detected by TCD. CO and CO₂, reduced into CH₄ by a methanizer, are detected by FID. Valve switching occurs before the CO₂ is directed into main-column-2. The other hydrocarbons and CO₂ are directed into main-column-3 (P-Q). They are detected by FID.

After the detection of C₂H₂, the valve is immediately backed to its original position to wait for the next analysis. A headspace injector can be connected to configure TOGAS analysis with a headspace device. The system includes LabSolutions GC workstation software.

Analyzer Information

System Configuration:

Two valves / four packed columns / TCD / Methanizer with FID

Sample Information:

H₂, O₂, N₂, CH₄, CO, CO₂, C₂ in transformer oil

Methods met:

ASTM-D3612C

Concentration Range:

No.	Name of Compound	Concentration Range	
		Low Conc.	High Conc.
1	H ₂	2.5ppm	50ppm
2	O ₂	50ppm	500ppm
3	N ₂	50ppm	1%
4	CH ₄	1ppm	1%
5	CO	1ppm	1%
6	CO ₂	1ppm	1%
7	C ₂ H ₆	1ppm	1%
8	C ₂ H ₄	1ppm	1%
9	C ₂ H ₂	1ppm	1%

Detection limits may vary depending on the sample.
Please contact us for more consultation.

System Features

- Single channel with packed columns
- Manual sampling and valve switching with optional head space
- 16 minute analysis time
- Trace level of CO and CO₂ are deoxidized into CH₄ by Methanizer and detected by FID

Typical Chromatograms

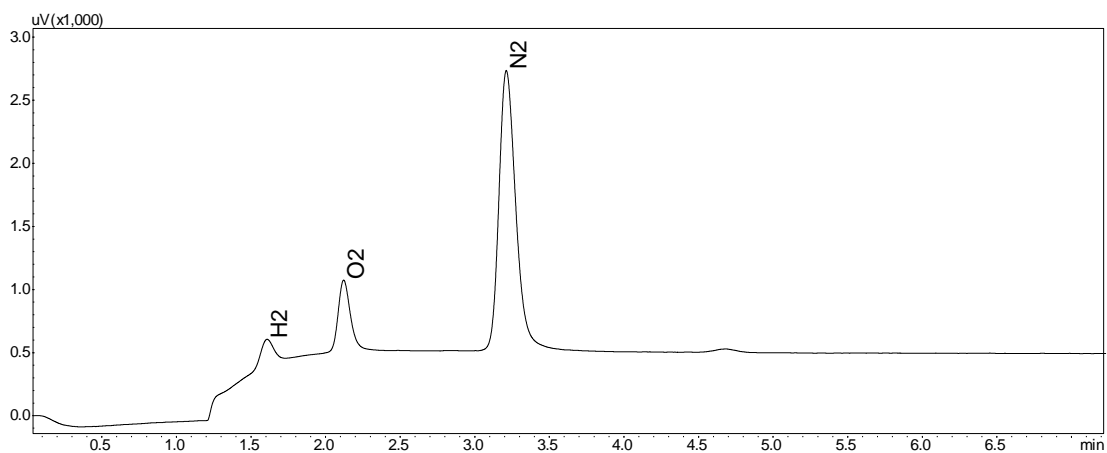


Fig. 1 Chromatogram of TCD

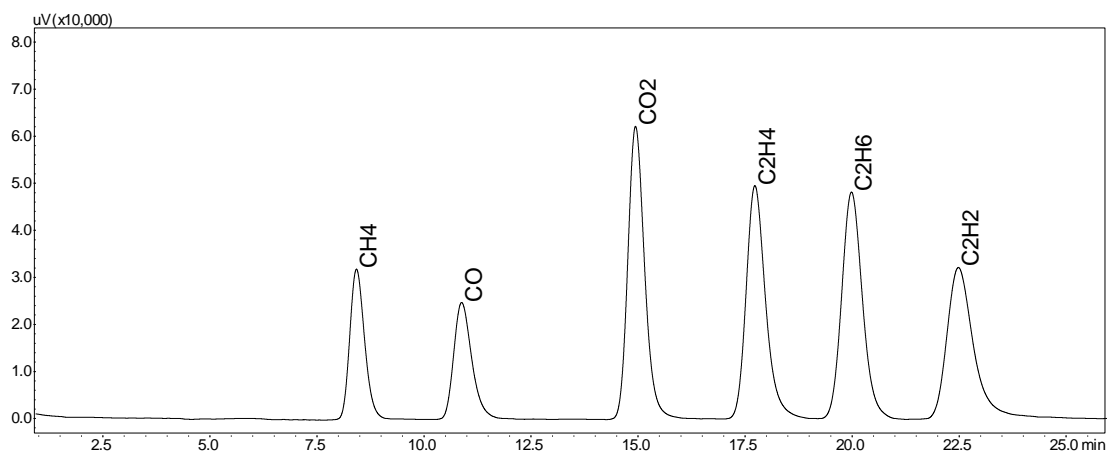


Fig. 2 Chromatogram of FID