

Application Data Sheet

No.19

System Gas Chromatograph

CO, CO₂, CH₄ Analysis Nexis GC-2030CCC3 GC-2014CCC3

This system is designed to measure a trace amount of carbon monoxide (CO), methane (CH₄) and carbon dioxide (CO₂) in a gas sample. The sample is injected automatically through a 10-port valve. The target CO, CO₂ and CH₄ are treated by a pre-column and then separation occurs using a charcoal column. A methanizer is used for high-sensitivity detection of trace concentrations. In contrast, if the target concentrations are high, a TCD can be used. This system allows selection of the detector according to the concentration of the target components. Why is this statement here? When using an FID, the concentration of O₂ should be less than 0.1%, if the matrix contains O₂. If using a TCD, the concentration of H₂, N₂, O₂ and Ar should be less than 0.1% if the matrix contains these gases. The system includes LabSolutions GC workstation software.

Analyzer Information

System Configuration:

Two valves / two packed columns / Methanizer with FID and TCD detector

Sample Information:

CO, CO₂, CH₄

Concentration Range:

No.	Name of Compound	Concentration Range	
		Low Conc.	High Conc.
1	CO	1.0ppm	100ppm
2	CO ₂	1.0ppm	100ppm
3	CH ₄	1.0ppm	100ppm
4	CO	0.01%	20%
5	CO ₂	0.01%	20%
6	CH ₄	0.01%	20%

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

System Features

- Dual channel with packed columns
- Hydrocarbons and water are backflushed by the pre-column while high concentration CO, CO₂, and CH₄ reach TCD
- Hydrocarbons are back flush by the pre-column while trace CO, CO₂, CH₄ pass through to a methanizer and detection with FID
- 6 minutes analysis time

Typical Chromatograms

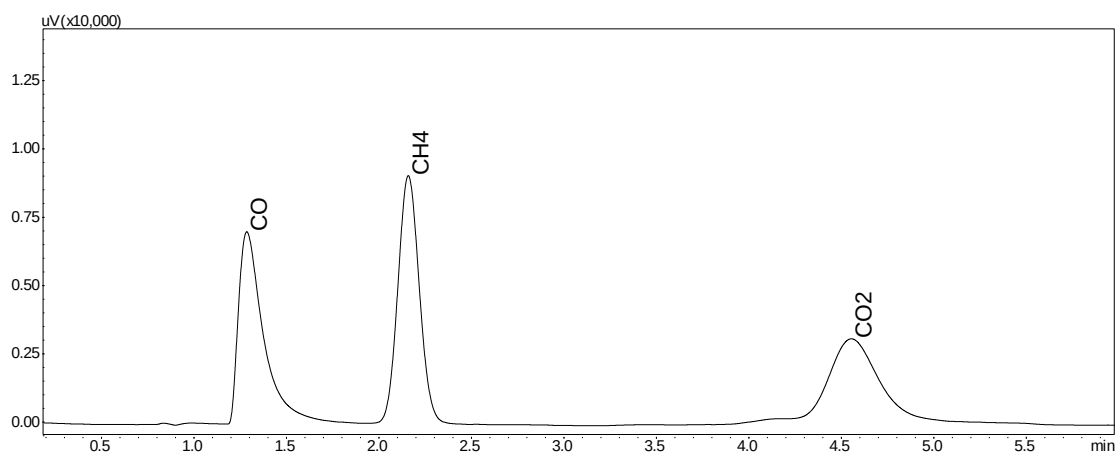


Fig. 1 Chromatogram of FID-1

Typical Chromatograms

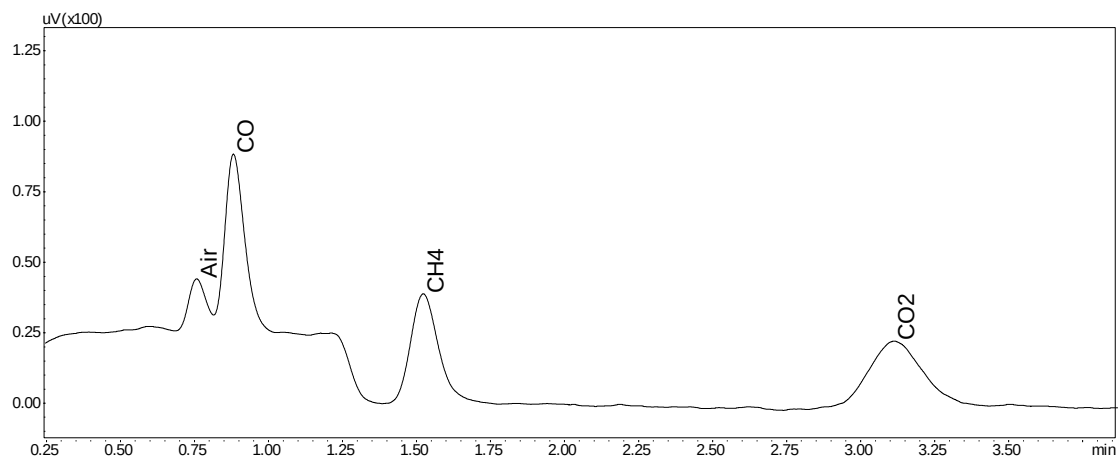


Fig. 1 Chromatogram of TCD-1

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