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Application Data Sheet

No.19

# System Gas Chromatograph

# CO, $CO_2$, $CH_4$ 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, $CO_2$, $CH_4$

**Concentration Range:**

| No. | Name of Compound | Concentration Range | |
|---|---|---|---|
| | | Low Conc. | High Conc. |
| 1 | CO | 1.0ppm | 100ppm |
| 2 | CO2 | 1.0ppm | 100ppm |
| 3 | CH4 | 1.0ppm | 100ppm |
| 4 | CO | 0.01% | 20% |
| 5 | CO2 | 0.01% | 20% |
| 6 | CH4 | 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, $CO_2$, and $CH_4$ reach TCD
- Hydrocarbons are back flush by the pre-column while trace CO, $CO_2$, $CH_4$ pass through to a methanizer and detection with FID
- 6 minutes analysis time

## Typical Chromatograms

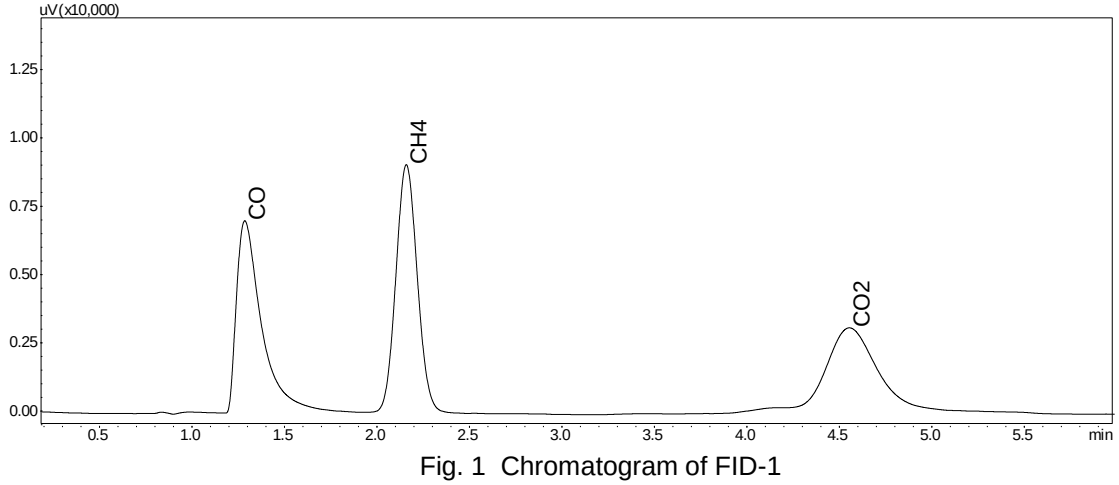


Fig. 1 Chromatogram of FID-1

## Typical Chromatograms

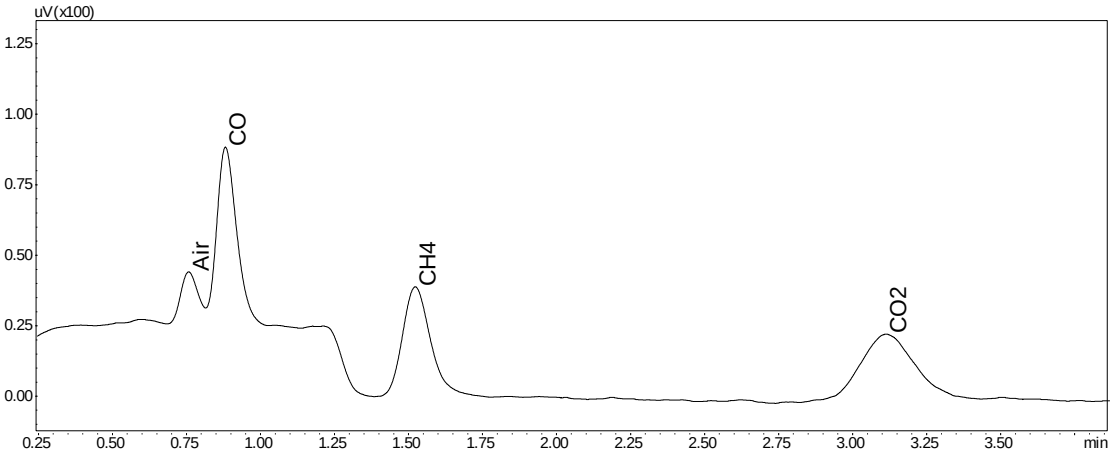


Fig. 1 Chromatogram of TCD-1

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