

Application Data Sheet

No.4

System Gas Chromatograph

Fast Natural Gas Analyzer Nexis GC-2030FNGA2 GC-2014FNGA2

This method is for determining the chemical composition of natural gases and similar gaseous mixtures within the composition range shown in the specification sheet. It provides data for calculating a sample's physical properties, such as its heating value and relative density, or for monitoring the concentrations of one or more of the components in a mixture. This system uses a total of three valves and six columns. The sample is introduced into four sample loops for determination. Using a pre-column, C₆₊ components are back-flushed as a single peak. The valve timing then allows the hydrocarbons C₃ through/to C₅ to be separated individually using an Rtx-1 capillary column and detected by FID. Finally, using MS-5A, O₂, N₂, CH₄, and CO are separated. simultaneously, CO₂, C₂, and H₂S are separated with an Rtx-Q plot column and detected by the TCD. The final analysis time is approximately 10 minutes. The system includes LabSolutions GC workstation software and BTU and Specific Gravity calculation software.

Analyzer Information

System Configuration:

Three valves / six capillary and packed columns with TCD / FID detectors

Sample Information:

O₂, N₂, CO, CO₂, H₂S, C₁-C₅ (methane, ethane, propane, iso-butane, n-butane, iso-pentane, and n-pentane), C₆₊ by backflush

Methods met:

ASTM-D1945, D3588, GPA-2261

Concentration Range:

| No. | Name of Compound | Concentration Range | |
|-----|----------------------------------|---------------------|------------|
| | | Low Conc. | High Conc. |
| 1 | O ₂ | 0.010% | 20.0% |
| 2 | N ₂ | 0.010% | 50.0% |
| 3 | CH ₄ | 20.000% | 100.0% |
| 4 | CO | 0.010% | 5.0% |
| 5 | CO ₂ | 0.010% | 20.0% |
| 6 | C ₂ H ₆ | 0.010% | 10.0% |
| 7 | H ₂ S | 0.100% | 30.0% |
| 8 | C ₃ H ₈ | 0.001% | 10.0% |
| 9 | i-C ₄ H ₁₀ | 0.001% | 10.0% |
| 10 | n-C ₄ H ₁₀ | 0.001% | 10.0% |
| 11 | i-C ₅ H ₁₂ | 0.001% | 2.0% |
| 12 | n-C ₅ H ₁₂ | 0.001% | 2.0% |
| 13 | C ₆₊ | 0.001% | 0.5% |

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

System Features

- Less than 10 minutes analysis for natural gas
- TCD, FID channels
- Calorific value software is available
- Versatile software easy GC system operation

Typical Chromatograms

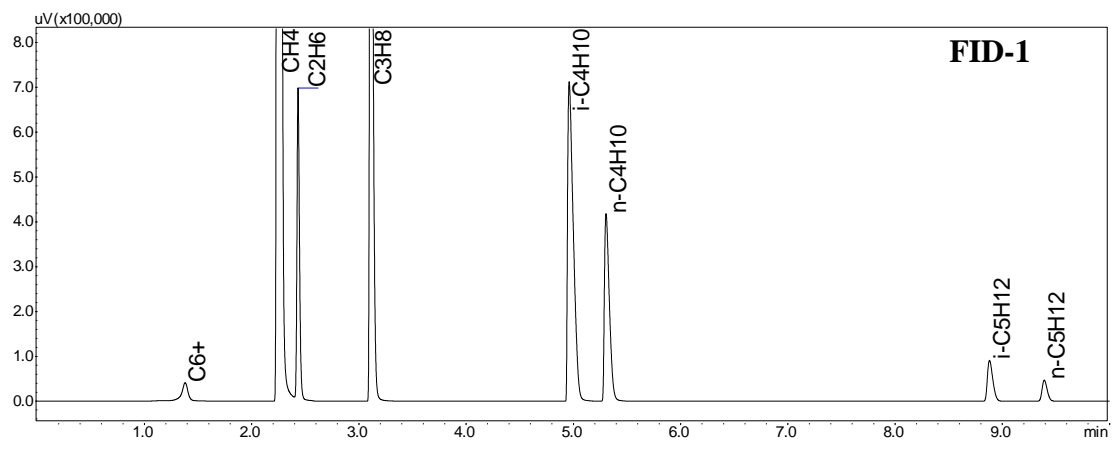


Fig. 1 Chromatogram of FID-1

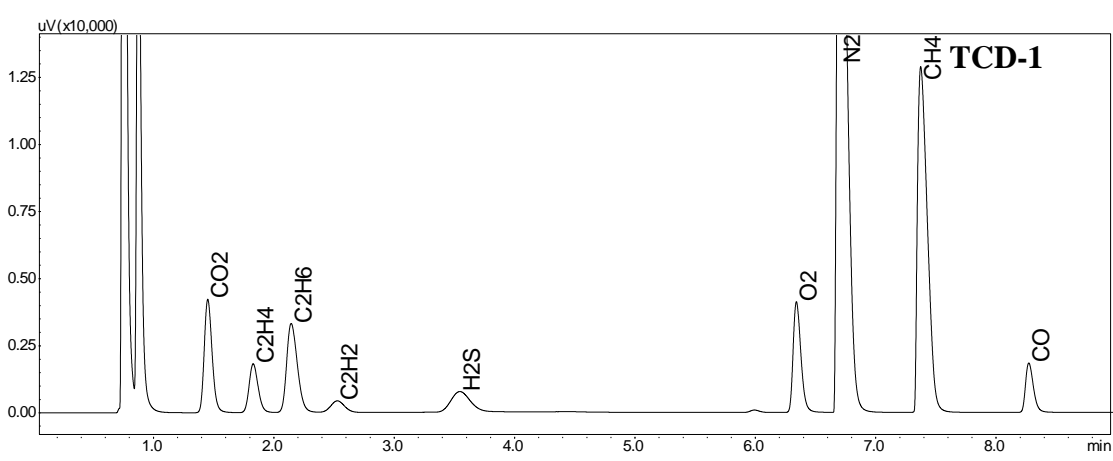


Fig. 2 Chromatogram of TCD-1

