

Application Data Sheet

No. 119

System Gas Chromatograph

Fast NGA System without He/H₂ Analysis Nexis GC-2030 FNGA-II2 GC-2014 FNGA-II2

This System is for determining the chemical composition of natural gases and similar gaseous mixtures within the composition range shown below. This test method provides data for calculating physical properties of the sample, such as heating value and relative density, or for monitoring the concentrations of one or more of the components in a mixture. A total of 4 valves and 6 columns are used in this GC system. The sample is loaded into two sample loops for determination. Using a pre-column, the C₆+ components are back-flushed as a single peak. The valve timing then allows the hydrocarbons C₃ through to C₅ to be separated by an Rtx-1 capillary column and to be detected by FID. Using as a main column P-N, Air+CO+CH₄ are eluted as a one peak to a packed MS-5A column and then separated. Switching the valve, CO₂, C₂, H₂S are eluted to a P-Q column, separated then detected by 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:

Four valves / five packed column and one capillary with one TCD detector and one FID detector

Sample Information:

Permanent gas ,C₁-C₆

Methods met:

ASTM-D1945, ASTM-D3588, GPA-2261

Concentration Range:

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

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

System Features

- One TCD channel and one FID channel
- Calorific value software is available
- Good repeatability

Typical Chromatograms

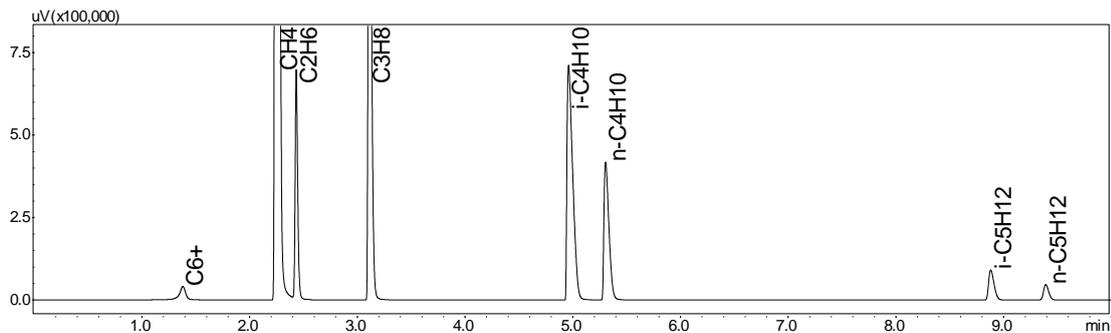


Fig.1 Chromatogram of FID

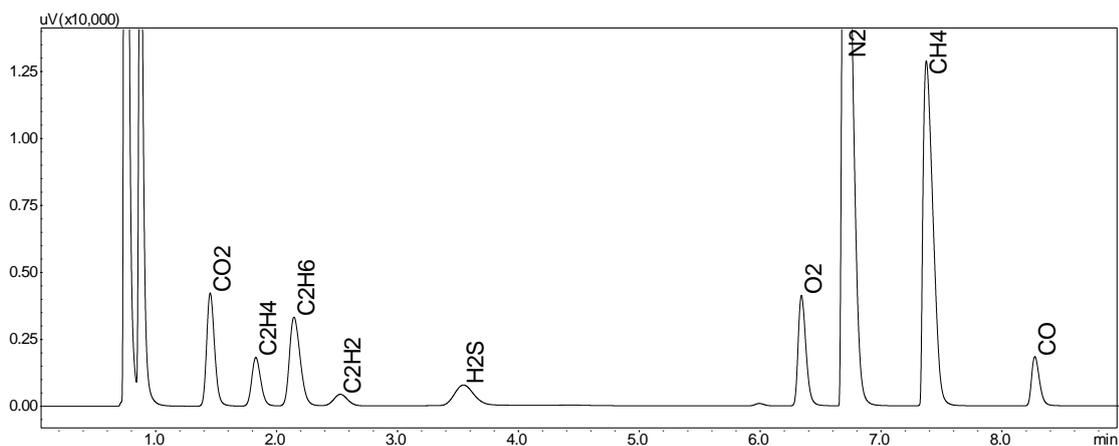


Fig.2 Chromatogram of TCD