

Application Data Sheet

No. 60

System Gas Chromatograph

NGA Analysis with ISO6974-3 Nexis

Nexis GC-2030ISO6974-3

GC-2014ISO6974-3

This method is for determining the chemical composition of natural gases within the composition range shown in the specification sheet. 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 MS-13X column with thermal conductivity detector (TCD-2) is used for the separation and detection of He, H₂, O₂, N₂, CH₄ and CO and the C₂+ are back-flushed out by using Porapak-N as pre-column. Porapak-T column coupled with a TCD-1 and a flame ionization detector (FID) in series is used for the separation and detection of N₂, CO₂ and hydrocarbons from C₁-C₈. TCD-1 for component including hydrocarbons up to C₃ and FID for hydrocarbons from C₄ to C₈. The system includes LabSolution workstation software and BTU and Specific Gravity calculation software.

Analyzer Information

System Configuration:

Two valves / three packed columns with two TCD detectors and one FID

Sample Information:

Permanent gas, C₁ – C₈

Concentration Range:

No.	Name of Compound	Concentration Range		Detector
		Low Conc.	High Conc.	
1	He	0.01 %	0.50 %	TCD-2
2	H ₂	0.01 %	0.50 %	TCD-2
3	O ₂	0.10 %	0.50 %	TCD-2
4	N ₂	0.10 %	40.00 %	TCD-2
5	CH ₄	50.00 %	100 %	TCD-2
6	CO ₂	0.10 %	30.00 %	TCD-1/FID
7	C ₂ H ₆	0.10 %	15.00 %	TCD-1/FID
8	C ₃ H ₈	0.001%	5.00 %	TCD-1/FID
9	i-C ₄ H ₁₀	0.0001%	2.00 %	FID
10	n-C ₄ H ₁₀	0.0001%	2.00 %	FID
11	i-C ₅ H ₁₂	0.0001%	1.00 %	FID
12	n-C ₅ H ₁₂	0.0001%	1.00 %	FID
13	C ₆ - C ₈	0.0001%	0.50 %	FID

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

System Features

- Versatile software easy GC system operation
- Two TCD channels
- Good repeatability

Typical Chromatograms

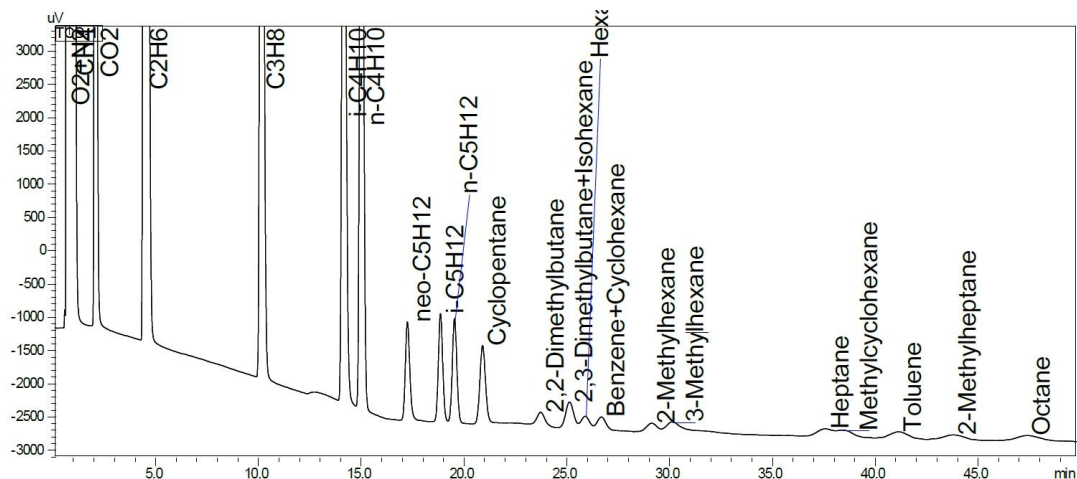


Fig. 1 Chromatogram of TCD-1

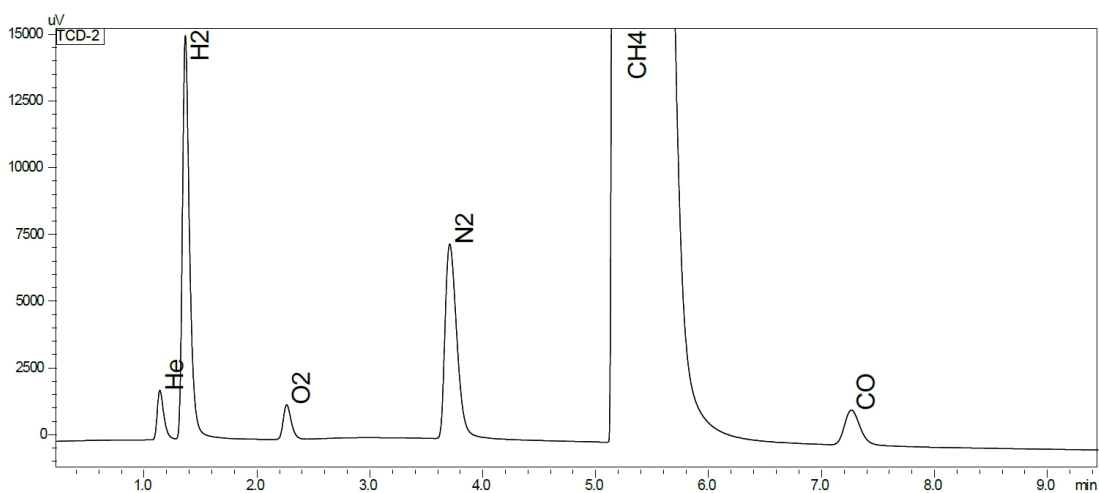


Fig. 2 Chromatogram of TCD-2

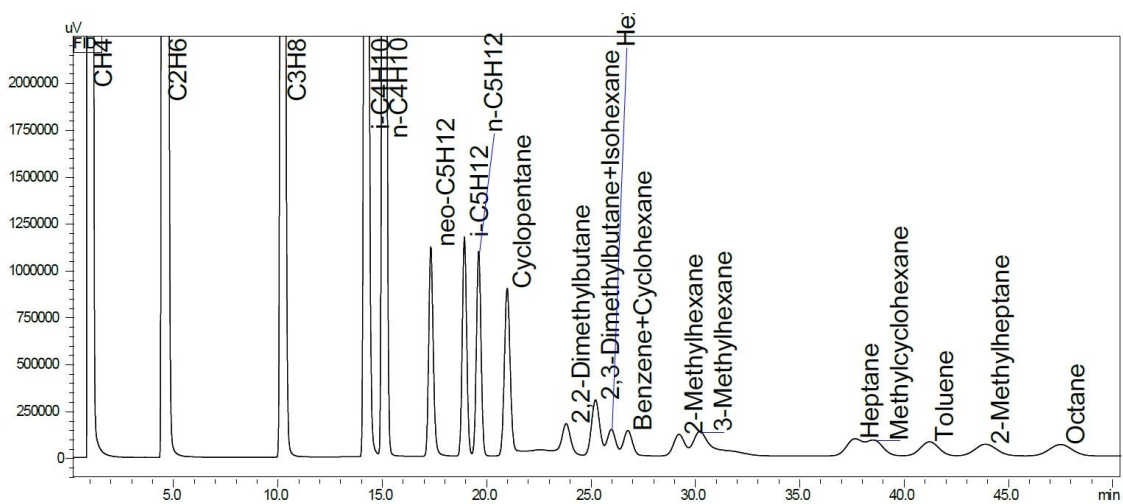


Fig. 3 Chromatogram of FID