

Application Data Sheet

No. 58

System Gas Chromatograph

N₂O/CO/CO₂/CH₄ analysis system (ECD/FID)
Nexis GC-2030NCCC2
GC-2014NCCC2

This method provides for the determination of nitrous oxide (N₂O), in atmospheric air, by gas chromatography (GC) with Electron Capture Detector (ECD) using Porapak-N and HayeSep-D packed column. A total of 5 valves and 7 columns are used in this GC system. Sample is introduced into two sample loops. In the first channel, N₂O is separated by the HayeSep-D column and detected by ECD. In the second channel, the first Porapak-N column is a pre-column used to cut the above C₂ compounds. The second Porapak functions to separate CO/CH₄ and CO₂. The final separation of CO and CH₄ are performed by a MS-13X column. CO₂ moves through the Porapak-Q and bypasses the Mol-Sieve 13X. CO, CH₄ and CO₂ are directed to a methanizer and are reduced to CH₄ by means of nickel catalyst and detected by flame ionization detector (FID). The system includes LabSolutions GC workstation software. Since large amount of O₂ gas affects life time of methanizer catalyst, O₂ gas needs to be removed by additional 6 port valve.

Analyzer Information

System Configuration:

Five valves / seven packed columns with one ECD detector and one FID detector

Sample Information:

N₂O, permanent gas

Concentration Range:

No.	Name of Compound	Concentration Range		Detector
		Low Conc.	High Conc.	
1	CH ₃ COCH ₃	5ppm	500ppm	FID
2	Propylene aldehyde	5ppm	500ppm	FID

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

System Features

- Versatile software easy GC system operation
- One ECD/ one FID channel
- Good repeatability

Typical Chromatograms

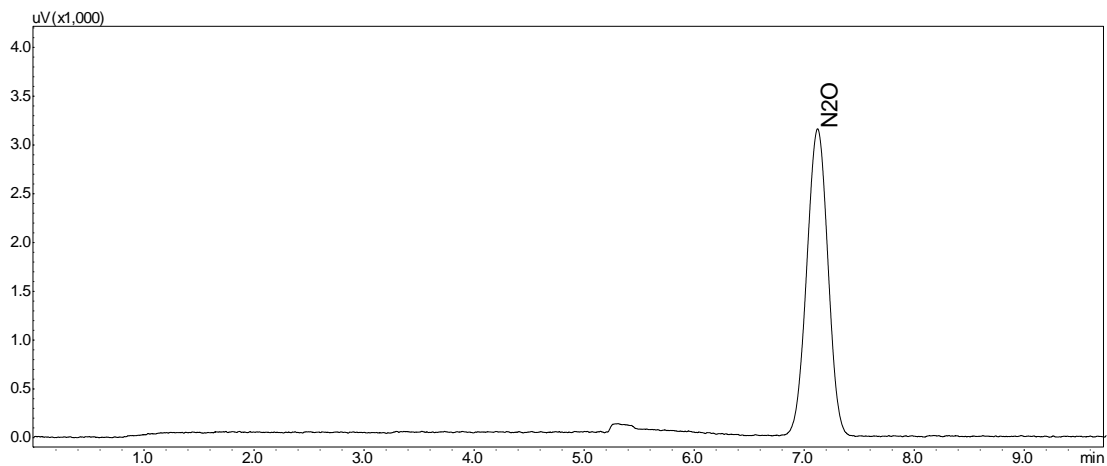


Fig. 1 Chromatogram of ECD

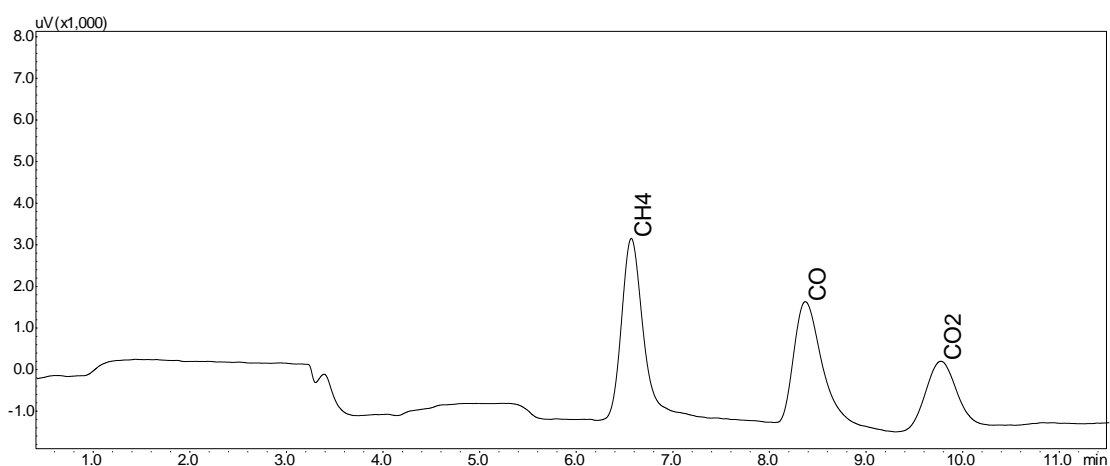


Fig. 2 Chromatogram of FID