

Application Data Sheet

No.30

System Gas Chromatograph

Oxygenate Analysis Nexis GC-2030OAS1

An appropriate internal standard such as 1,2-dimethoxyethane (ethylene glycol dimethyl ether) is added to the sample, which is then introduced into a gas chromatograph equipped with two columns and a column switching valve. The sample first passes into a polar TCEP column that elutes lighter hydrocarbons to vent and retains the oxygenated and heavier hydrocarbons. After methylcyclopentane, but before DIPE and MTBE elute from the polar column, the valve is switched to back-flush the oxygenates into a WCOT non-polar column. The alcohols and ethers elute from the non-polar column in boiling point order, before elution of any major hydrocarbon constituents. After benzene and TAME elute from the non-polar column, the column switching valve is switched back to its original position to back-flush the heavy hydrocarbons. The eluted components are detected by a flame ionization or thermal conductivity detector. The detector response, proportional to the component concentration, is recorded, the peak areas measured, and the concentration of each component calculated with reference to the internal standard. The system includes LabSolutions GC workstation software.

Analyzer Information

System Configuration:

One valve / packed and capillary columns with one FID detector

Sample Information:

Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C₁ to C₄ alcohols in Gasoline

Methods met:

ASTM-D4815

Concentration Range:

No.	Name of Compound	Concentration Range	
		Low Conc.	High Conc.
1	Ethers	0.1%	20.0%
2	Alcohols	0.1%	12.0%

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

System Features

- Using high sensitivity FID with single channel
- Lighter hydrocarbons are eluted from polar TCEP column to vent and retain the oxygenate and heavier hydrocarbons
- Good separation of alcohols and ethers with non-polar column in boiling point order
- The eluted components are detected by FID or TCD detector

Typical Chromatograms

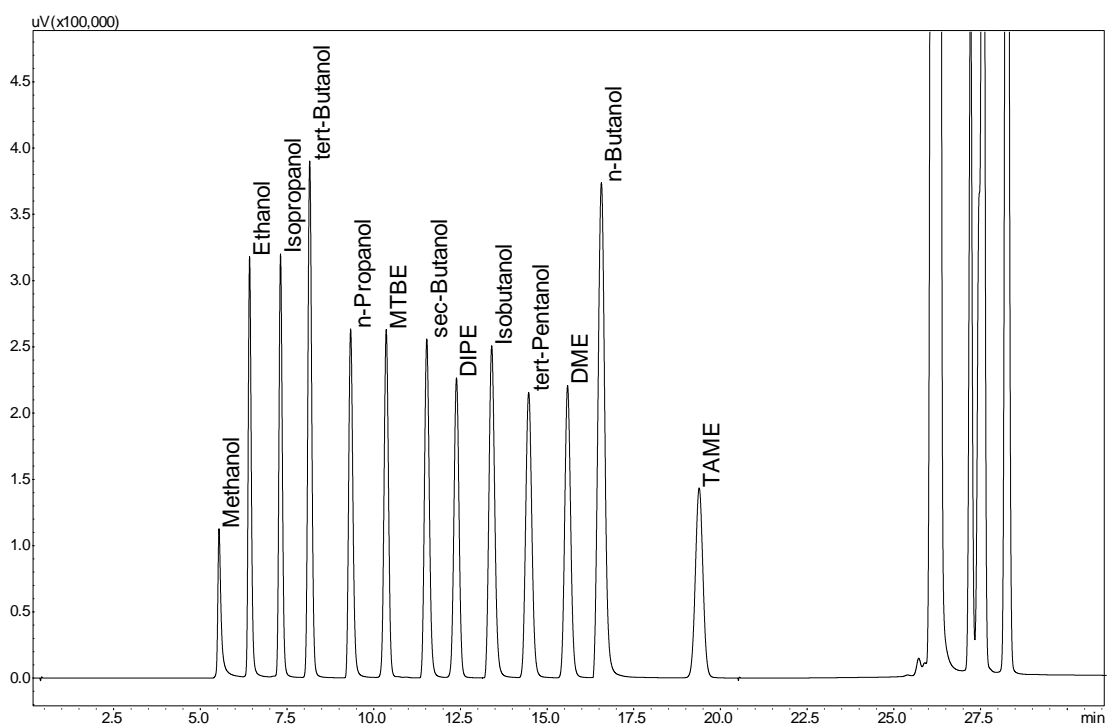


Fig. 1 Chromatogram of FID