

Application Data Sheet

No.56

GCMS

Gas Chromatograph Mass Spectrometer

Analysis of Inorganic Gases and Hydrocarbons by GC-MS

This shows an example of analyzing inorganic and hydrocarbons gases using a PLOT (porous layer open tubular) column.

Experiment

Table 1 shows the analysis conditions.

Table 1 Analysis Conditions

GC-MS : GCMS-QP2010 Ultra

Column: RT®-Q-BOND (30 m long, 0.32 mm I.D., df = 10 μm)

[GC]

Vaporization chamber temperature: 200 °C

Column oven temperature: 35 °C (2 min) → (10 °C / min) → 150 °C (5 min)

Injection mode: Split

Control mode: Pressure (100 kPa)

Carrier gas: Helium

Split ratio: 50

Sample injection: Gas sampler (1 mL loop volume) (Note 1)

[MS]

Interface temperature: 200 °C

Ion source temperature: 200 °C

Measurement mode: Scan (m/z 10 to100)

Event time: 0.5 sec

Ionization method: EI

Emission current:150 μA

Note 1: Gas sampler P/N 223-57653-91

Analysis Results

A total ion current chromatogram is shown in Figure 1. This column does not separate carbon monoxide from the components in air. Furthermore, at this concentration level, water is causing baseline fluctuations.

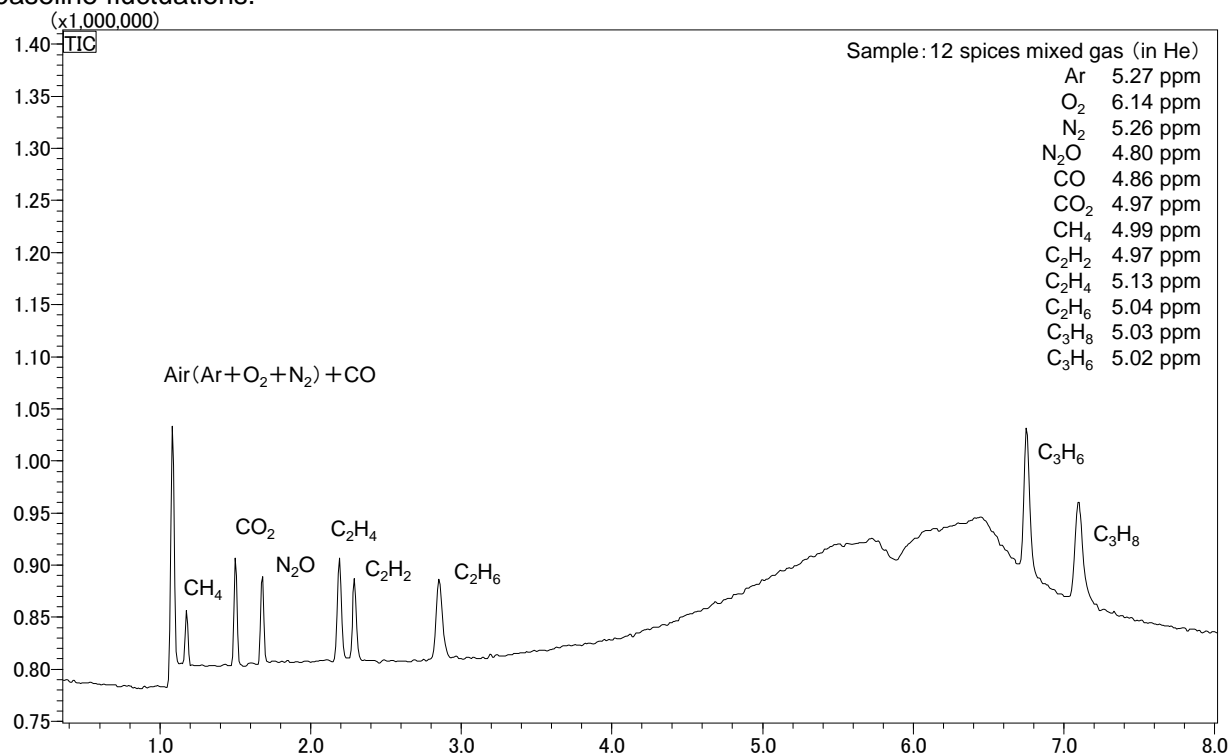


Fig. 1 Total Ion Current Chromatogram

Extracted ion chromatograms of respective components are shown in Figure 2. By selecting ions, all 12 components, including those not separated in the total ion current chromatogram, can be analyzed without being affected by water.

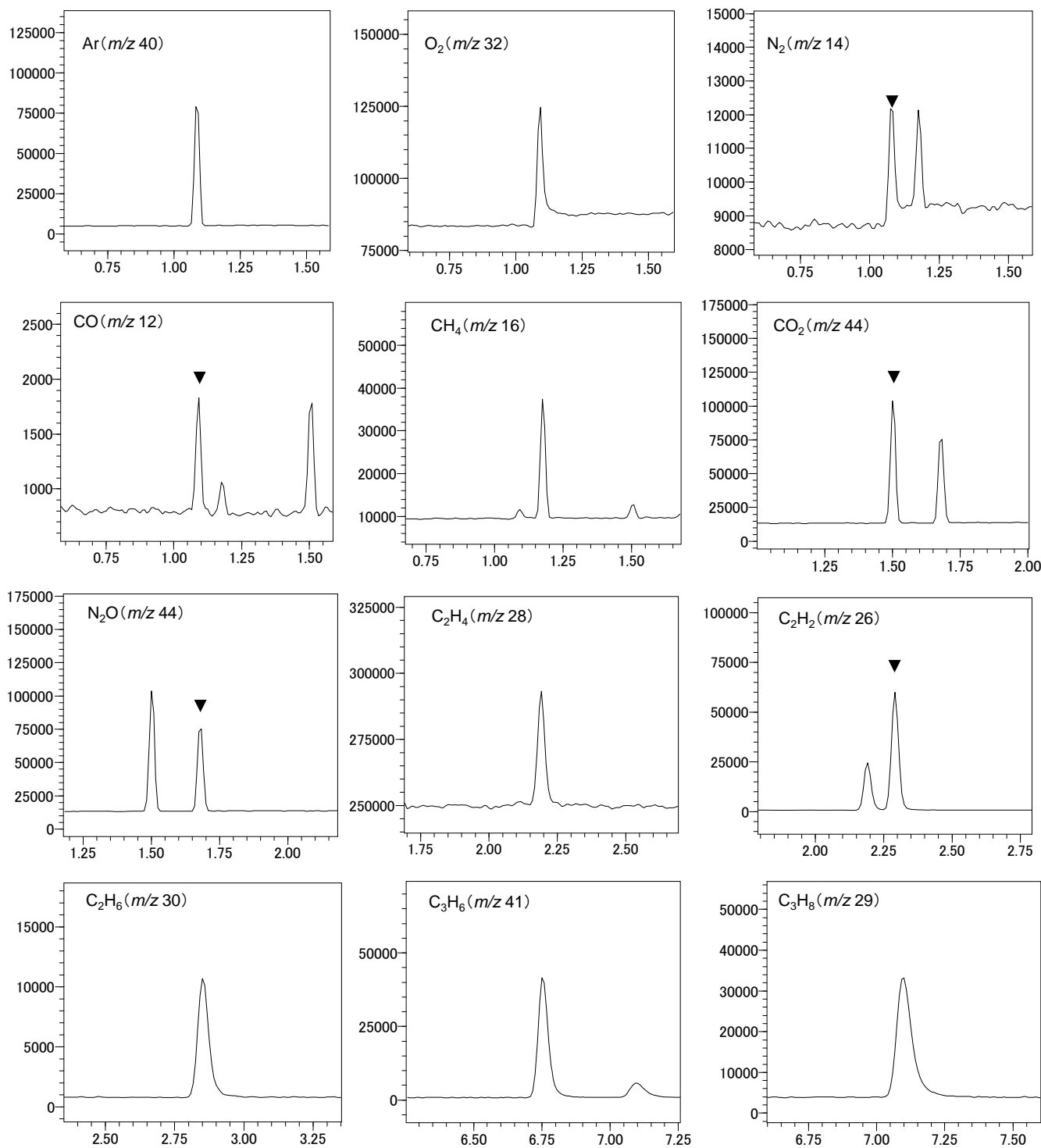


Fig. 2 Mass Chromatograms for Respective Components

