

Analysis of Chloride Compounds in Gasoline using NCI

NCI (negative chemical ionization) is known to be highly sensitive for halides. Another merit of this method is the possibility of analysis without the influence of interfering components.

This data sheet presents an analysis example of chloride compounds in gasoline. The concentrations

of the chlorides is on the order of several parts per million (ppm). Normally, gasoline is analyzed with split injection. In this example, a small split ratio is adopted because the concentrations of the target substances are small.

1 Analytical conditions for GC-MS

Equipment	:GCMS-QP2010
Column	: HR-1 (60m x 0.25mm i.d. df=1.00 μ m)
Column time program	:40°C (2min) - 5°C/min - 250°C (10min)
Carrier gas	: He 100kPa
Injection temp.	: 250°C
Injection method	: Split 100:1 NCI 5:1
Interface temp.	: 200°C
Ion source temp.	: 200°C
Scan	: m/z 35-300 (interval 0.5sec) NCI m/z 10-300
Reagent gas	: CH ₄

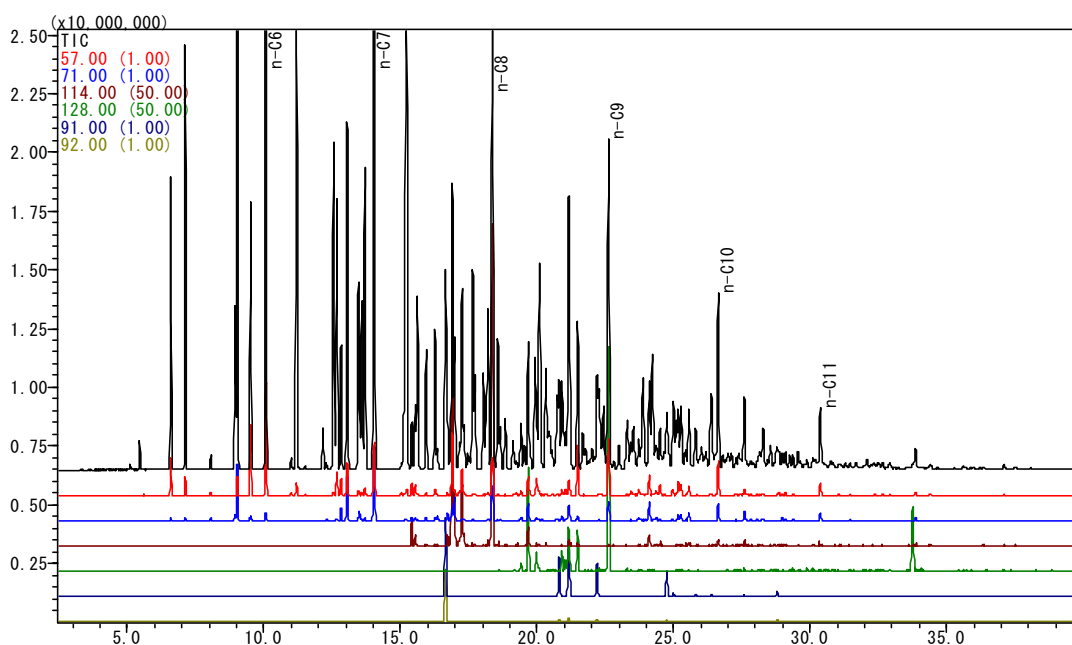


Fig.1 Mass Chromatogram of EI

A mass chromatogram with the split ratio set at 100:1. This data is from measurement by SEI.

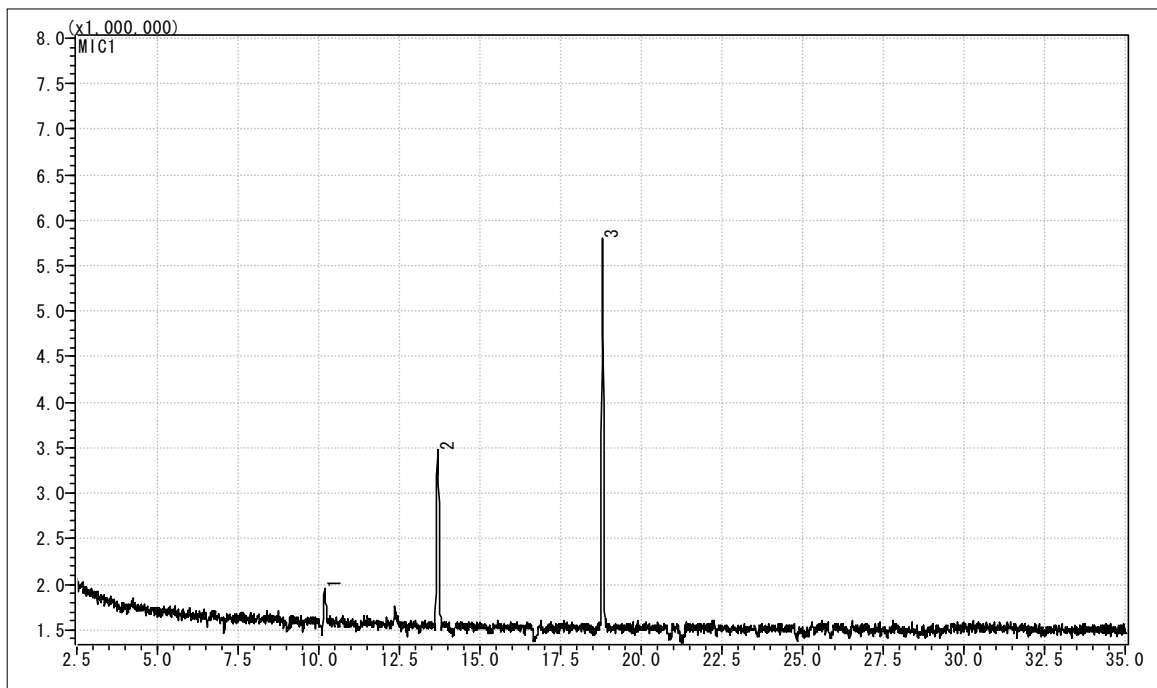


Fig.2 MIC Chromatogram of NCI (m/z 35-37)

This figure shows the MIC of m/z 35-37. Three main peaks are visible. Peak (3) is inferred as tetrachloroethylene (C_2Cl_4 MW:164).

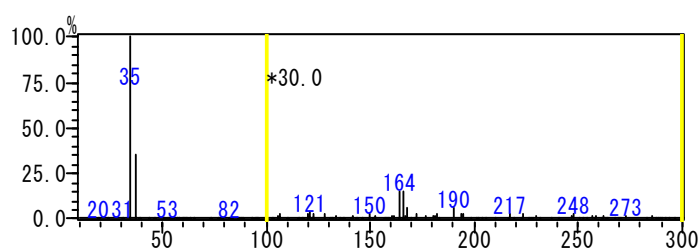


Fig.3 Mass spectrum of peak 3 (C_2Cl_4 MW:164)

SHIMADZU CORPORATION International Marketing Division

3. Kanda-Nishikicho 1-chome, Chiyoda-ku, Tokyo 101-8448, Japan

Phone: 81 (3) 3219-5641 Fax. 81 (3) 3219-5710

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