



Chlorinated hydrocarbons, $C_1 - C_2$

Analysis of propellants and solvents in aerosol containers

Application Note

Environmental

Authors

Agilent Technologies, Inc.

Introduction

Gas chromatography using an Agilent CP-Al₂O₃/KCl column separates ten propellants and solvents in aerosol containers in six minutes.



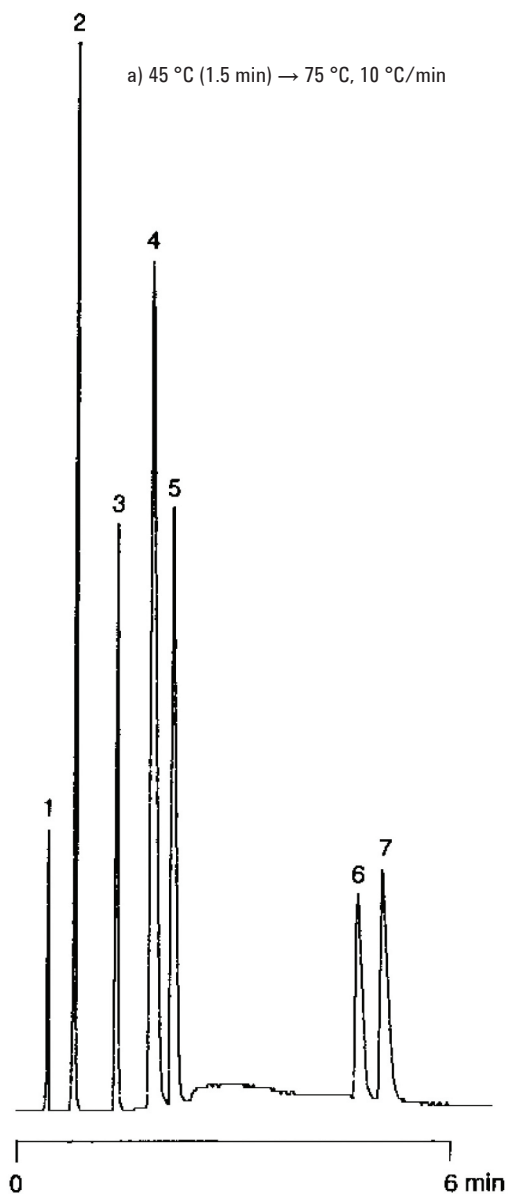
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Conditions

Technique	: GC-capillary
Column	: Agilent CP-Al ₂ O ₃ /KCl, 0.53 mm x 10 m fused silica PLOT Al ₂ O ₃ /KCl (Part no. CP7516)
Temperature	: a) 45 °C (1.5 min) → 75 °C, 10 °C/min b) 75 °C (1.5 min) → 120 °C, 10 °C/min c) 100 °C (1.5 min) → 140 °C, 10 °C/min
Carrier Gas	: He, 6 mL/min
Injector	: Splitter, 1:100 T = 150 °C
Detector	: TCD (3.5 µL cell), T = 190 °C make-up, 15 mL/min ref. flow, 15 mL/min
Courtesy	: R. Annakotta, Keuringsdienst van Waren, Groningen, The Netherlands

Peak identification

1. air
2. propane
3. Freon 12 (CCl₂F₂)
4. isobutane
5. butane
6. Freon 11 (CCl₃F)
7. pentane
8. Freon 113 (C₂Cl₃F₃)
9. dichloromethane
10. 1,1,1-trichloroethane

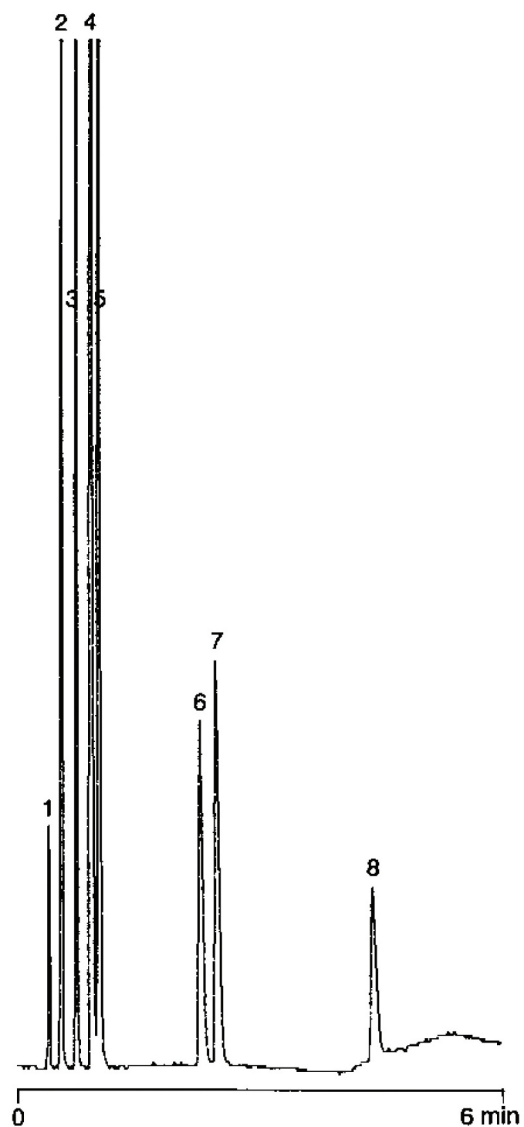


A 100 mL Neubor flask was evacuated using a water jet pump and an injection needle. The flask was filled with standards and an internal standard (pentane) (± 125 mg per component). After heating in an oven at 60 °C for 10 min, a 50 μ L sample was injected into the column.

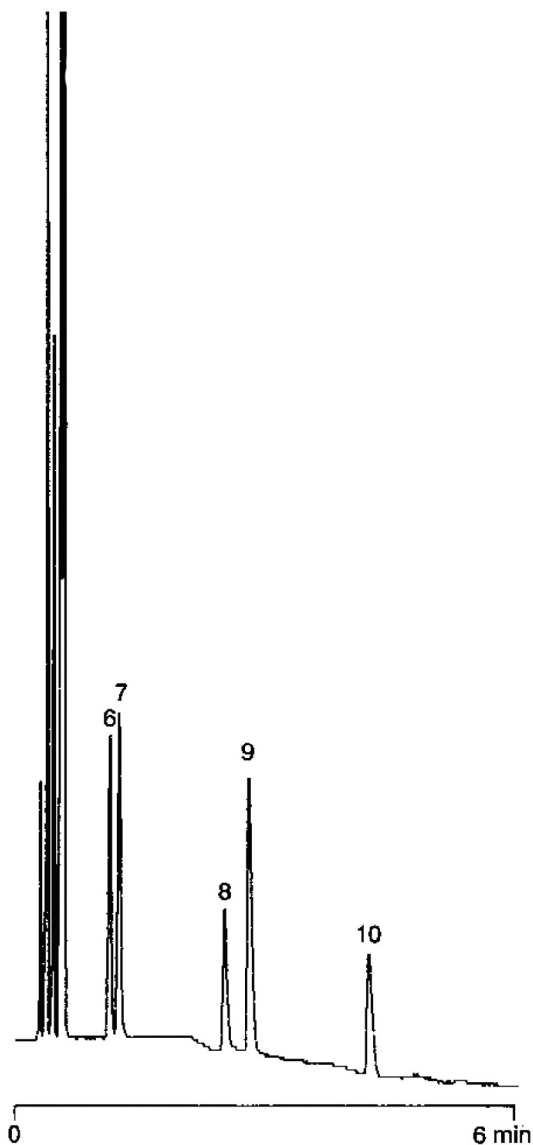
Peak identification

1. air
2. propane
3. Freon 12 (CCl_2F_2)
4. isobutane
5. butane
6. Freon 11 (CCl_3F)
7. pentane
8. Freon 113 ($\text{C}_2\text{Cl}_3\text{F}_3$)
9. dichloromethane
10. 1,1,1-trichloroethane

b) 75 °C (1.5 min) $\rightarrow$ 120 °C, 10 °C/min



c) 100 °C (1.5 min) $\rightarrow$ 140 °C, 10 °C/min



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This information is subject to change without notice.

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