Fatty acid ethylene glycol esters, C_{16} – C_{36}

Analysis of montan wax

Application Note

Energy & Fuels

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Introduction

The Agilent CP-SimDist UltiMetal column allows high temperature analysis (HT-GC) of the boiling components of refined/modified and raw montan wax, Montan wax is a plant wax derived from lignite by solvent extraction. It is similar to carnauba wax.

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Conditions

Technique	:	GC-wide-bore
Column	:	Agilent CP-SimDist UlitiMetal, 0.63 mm x 10 m, WCOT CP-SimDist UlitiMetal (df = 0.17 µm) (Part no. CP7542)
Temperature	:	90 °C (2 min) ⟶ 440 °C, 10 °C/min; 440 °C (60 min)
Carrier Gas	:	N_2, 10kPa (0.1 bar 1.4 psi)
Injector	:	on-column
Detector	:	FID, T = 440 °C
Sample Size	:	1.0 µL
Concentration Range	:	0.3 g/100 mL
Solvent Sample	:	toluene
Courtesy	:	Dr. L. Matthies and F. Preusser, Völpker Montanwachs GmbH, Völpke, Germany

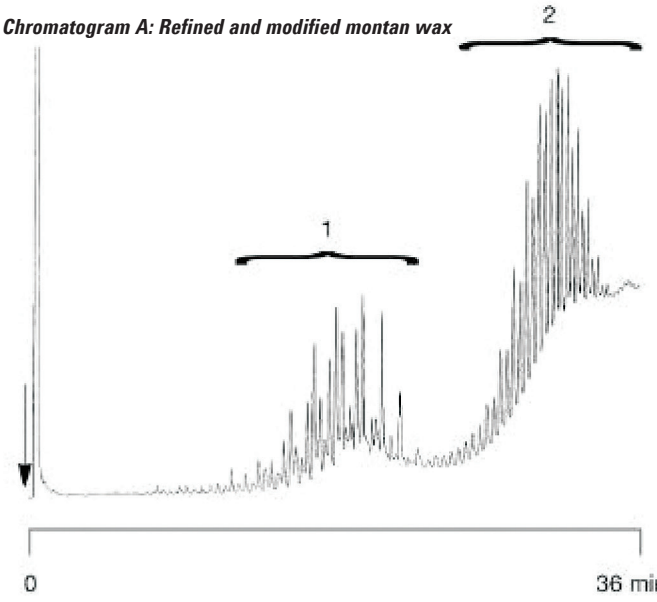
Peak identification chromatogram A

1. ethylene glycol mono-esters of C_{16} - C_{36} saturated fatty acids ("montanic acids") hydrocarbons, traces of C_{16} - C_{36} saturated fatty alchols ("montanic alchols")
2. ethylene glycol di-esters of montanic acids.

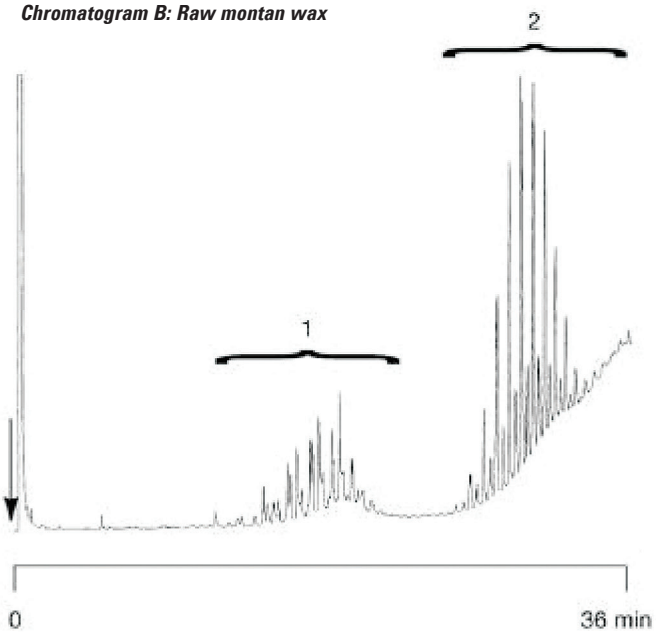
Peak identification chromatogram B

1. montanic alcohols, hydrocarbons
2. montanic alchol esters of montanic acids

Chromatogram A: Refined and modified montan wax



Chromatogram B: Raw montan wax



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