

Analysis of Acetone, n-Hexane, MIBK, MNBK, and MIBC Using the Agilent 490 Micro GC

Application Note

Micro Gas Chromatography, Environmental Analysis

Authors

Tim Lenior and Hans-Peter Smid, ASaP
Amsterdam, the Netherlands
Remko van Loon
Agilent Technologies, Inc.
Middelburg, the Netherlands

Introduction

This application note shows the analysis of Acetone, n-Hexane, Methyl iso-Butyl Ketone (MIBK), Methyl iso-Butyl Carbinol (MIBC), and Methyl n-Butyl Ketone (MNBK, 2-Hexanone) using the Agilent 490 Micro GC.

To decontaminate a polluted soil environment, steam is injected into the ground. The contaminants will evaporate from the soil and the steam is collected and cleaned. The 490 Micro GC is used to monitor this decontamination process.

The initial soil sample, including the contaminants, is collected and handled by a processing plant. This system, designed and built by Analytical Solutions and Products (ASaP) in the Netherlands, separates the gas from the soil sample. The final gas sample, containing the contaminations in ppm range, high concentration of ambient air, and some moisture vapor, is analyzed by the 490 Micro GC. The compounds of interest can be separated on both a CP-Sil 5 CB column channel and a CP-Wax 52 CB column channel.

The Agilent 490 Micro GC is a rugged, compact and portable lab-quality gas analysis platform. When the composition of gas mixtures is critical, count on this fifth-generation micro gas chromatography.



Agilent Technologies

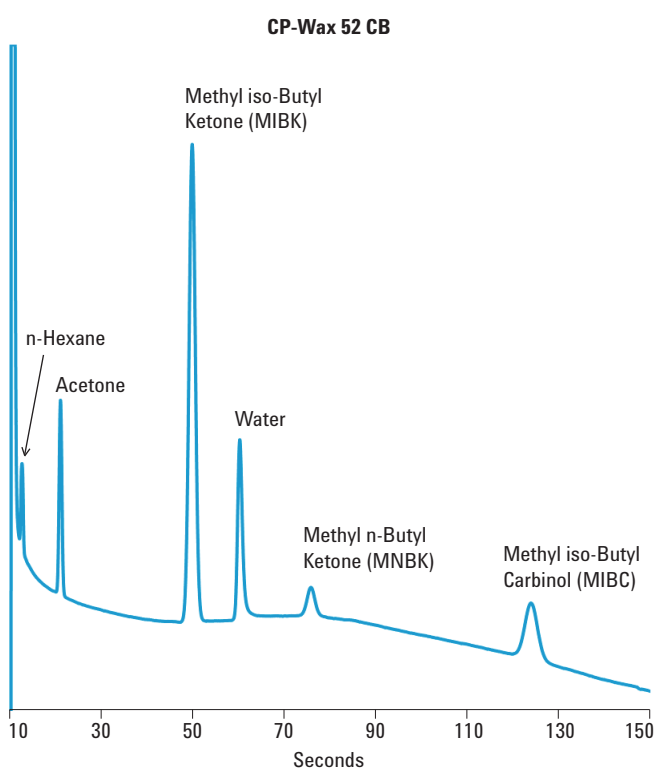
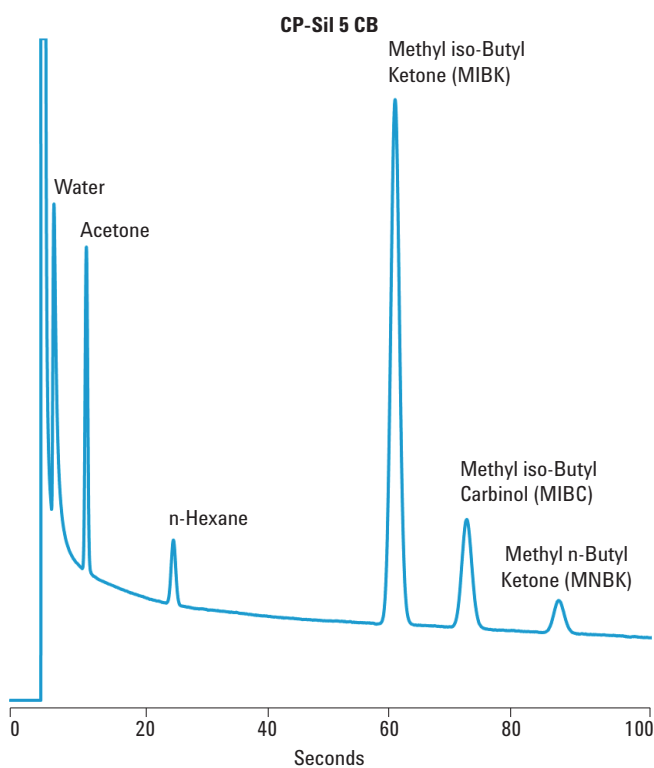
Instrumentation

For this analysis, an Agilent 490 Micro GC (p/n G3581A), equipped with a CP-Sil 5 CB and CP-Wax 52 CB, is used to analyze the compounds of interest.

	CP-Sil 5 CB, 4m	CP-Wax 52 CB, 10m (special)
Column temperature	60 °C	60 °C
Carrier gas	Helium, 200 kPa	Helium, 200 kPa
Injector temperature	60 °C	60 °C
Injection time	200 ms	200 ms
Sample line temperature	60 °C	60 °C

Sample information

Nitrogen/Oxygen (Air)	Matrix
Acetone	64 ppm
n-Hexane	15 ppm
Methyl iso-Butyl Ketone (MIBK)	250 ppm
Methyl iso-Butyl Carbinol (MIBC)	73 ppm
Methyl n-Butyl Ketone (MNBK)	20 ppm



For More Information

These data represent typical results. For more information on our products and services, visit our Web site at www.agilent.com/chem.

www.agilent.com/chem

Agilent shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material.

Information, descriptions, and specifications in this publication are subject to change without notice.

© Agilent Technologies, Inc., 2011
Printed in the USA
June 8, 2011
5990-8361EN



Agilent Technologies