

Analysis of Dichloromethane from Waste Water Using the 490 Micro GC

Application Note

Authors

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Introduction

Dichloromethane (DCM) is a colorless, oily, organic liquid with a sweet, chloroform-like odor. It is mainly used to produce vinyl chloride monomer, the major precursor for PVC production. It is also used as a solvent for resins and fats, and in photography, photocopying, cosmetics, drugs and as a soil fumigant. DCM can be harmful to wildlife and human health, and so it is regulated in Europe under EC Directive 76/464 'Pollution of the aquatic environment by dangerous substances' (plus daughter directives).

Fast, on-line analysis of DCM is accomplished using the Agilent 490 Micro GC.



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Instrumentation

Instrument: 490 Micro GC
Module: Fused silica, non-polar phase

Conditions

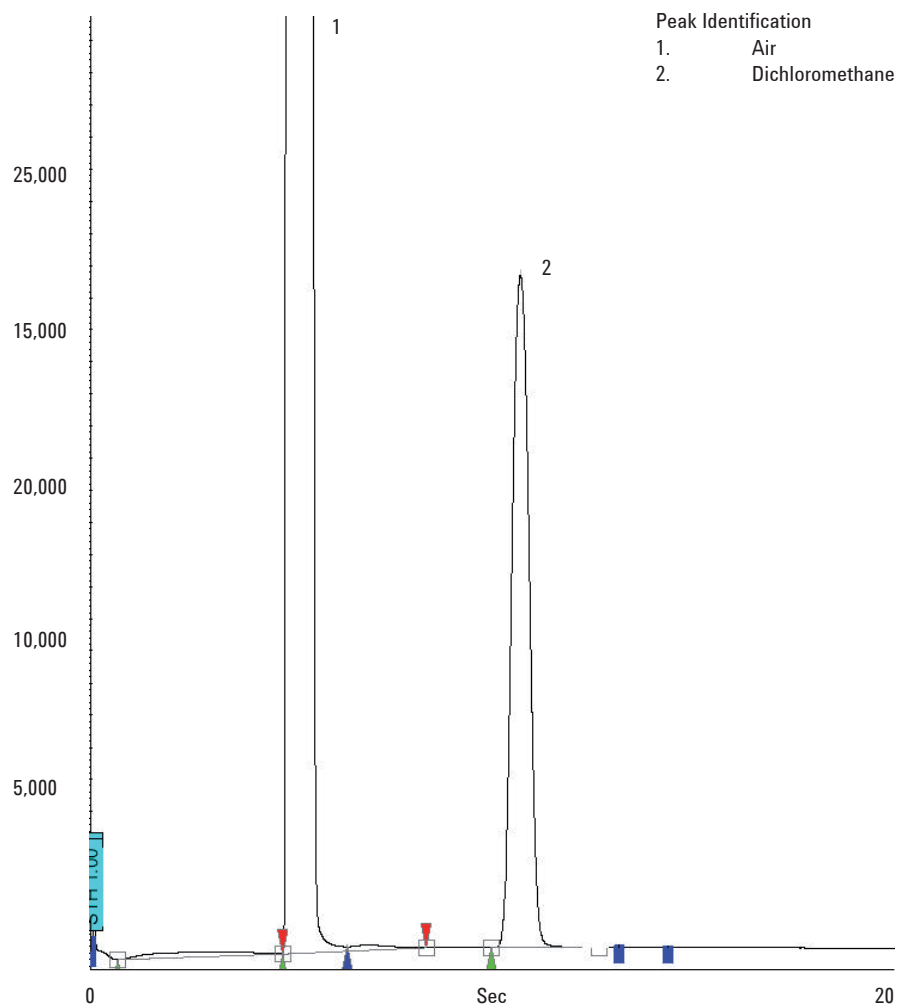
Sample Conc: 7400 mg/m³ and 4 mg/m³
Carrier Gas: Helium, ca. 45 kPa
Injector Temp: Unheated
Detector: μ -TCD

Materials and Reagents

Dichloromethane was extracted from waste water via purge and trap. The water was stripped and the stream directly analyzed via the 490 Micro GC.

Results and Discussion

Figures 1 and 2 show the effect of different dichloromethane concentrations on its separation.



Peak Identification

1. Air
2. Dichloromethane

Figure 1. Dichloromethane in air at 7400 mg/m³

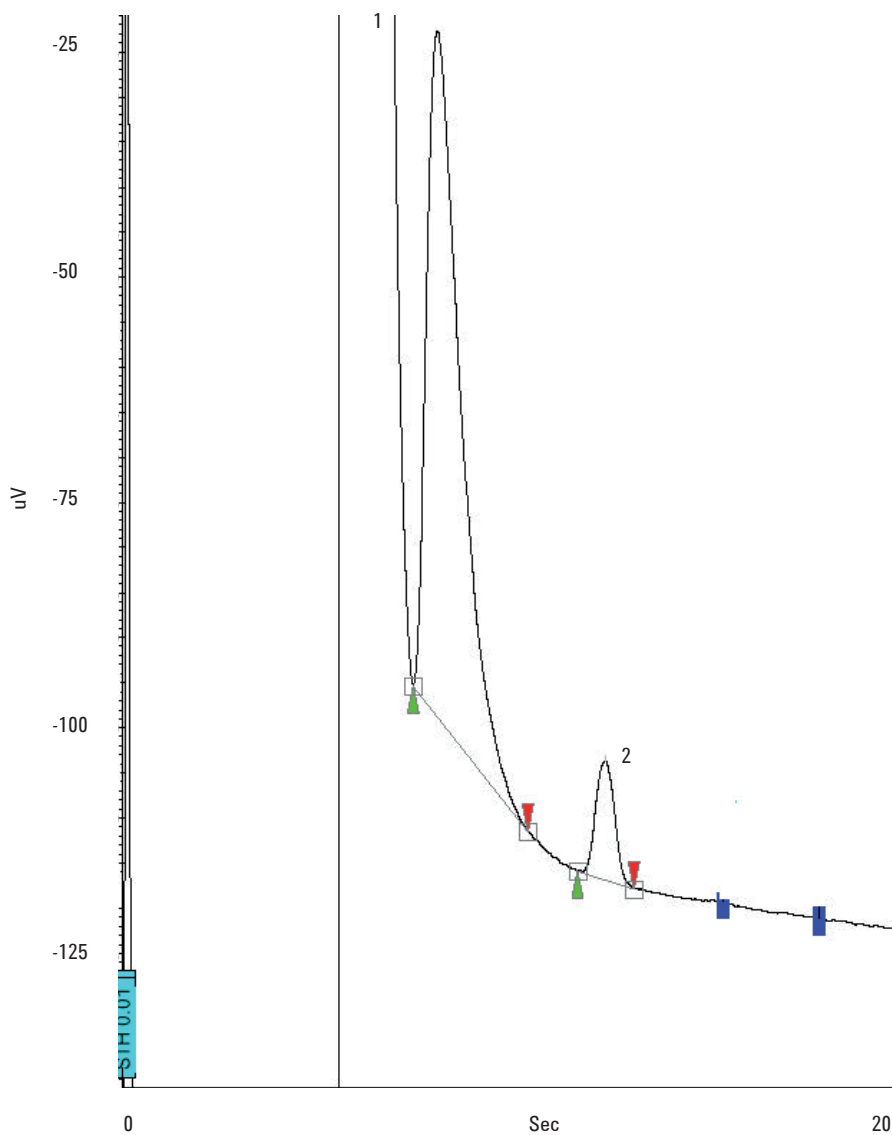


Figure 2. Dichloromethane in air at 4 mg/m³

Conclusion

The 490 Micro GC successfully analyzed waste water samples containing dichloromethane, even at very low levels. The 490 Micro GC is a rugged, compact, "lab-quality" gas analysis platform that delivers high efficiency analyses. When the composition of gas mixtures is critical, this fifth generation micro-gas chromatograph generates more data in less time for faster and better performance.

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