

# Analysis of Dichloromethane from Waste Water Using the 490 Micro GC

## Application Note

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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/m<sup>3</sup> and 4 mg/m<sup>3</sup>  
Carrier Gas: Helium, ca. 45 kPa  
Injector Temp: Unheated  
Detector:  $\mu$ -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.

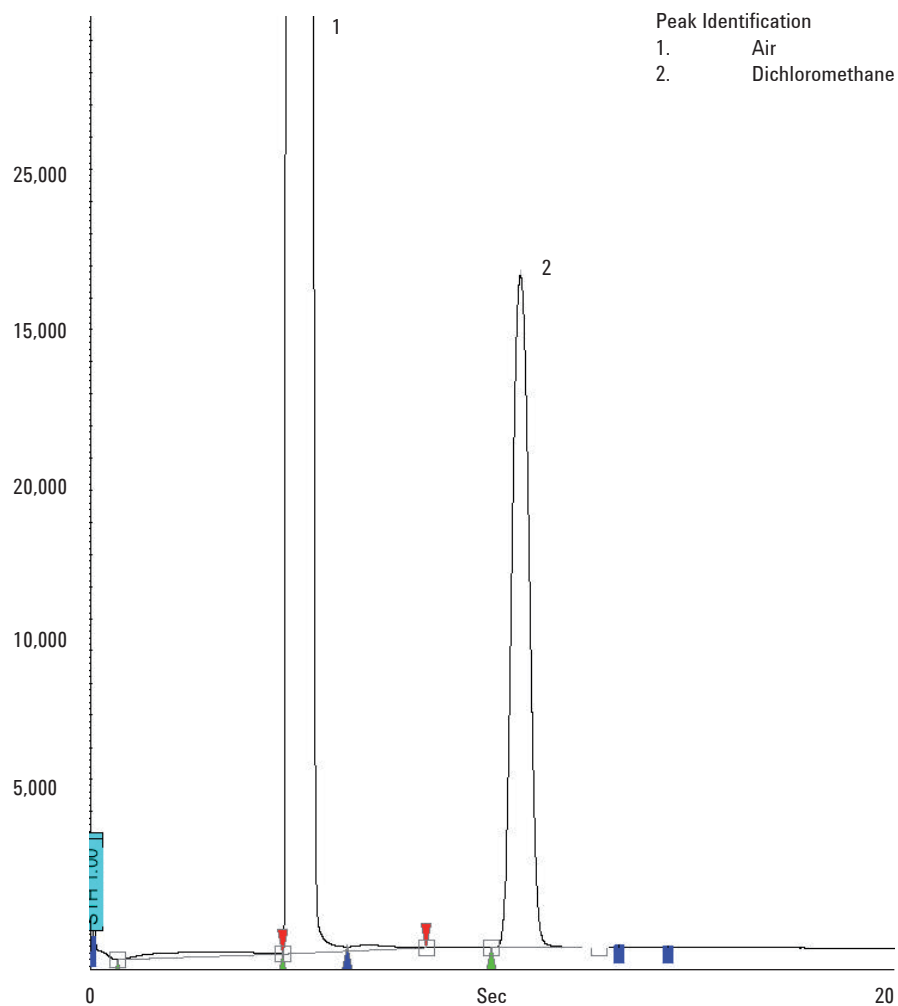


Figure 1. Dichloromethane in air at 7400 mg/m<sup>3</sup>

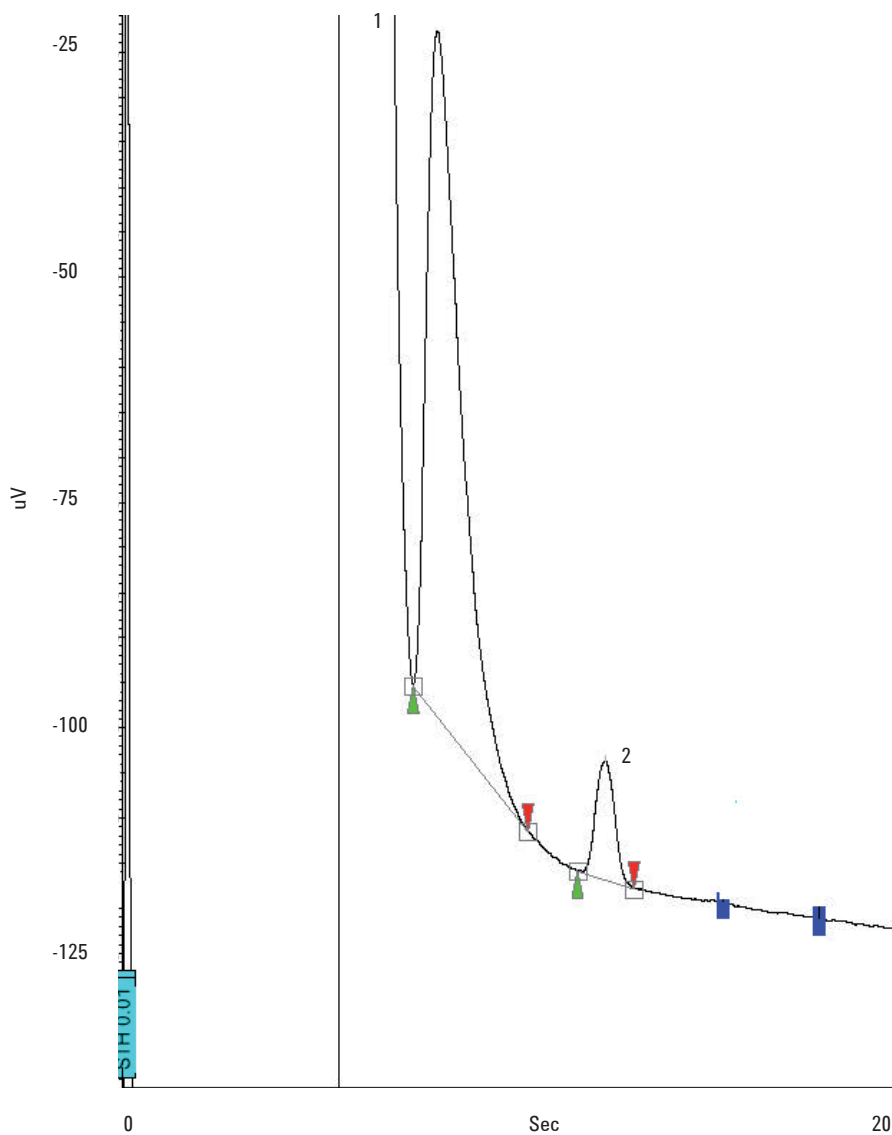


Figure 2. Dichloromethane in air at 4 mg/m<sup>3</sup>

## 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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