



# Determination of trace mineral oil in petroleum ether using large volume PTV injection

## Application Note

Environmental

### Authors

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### Introduction

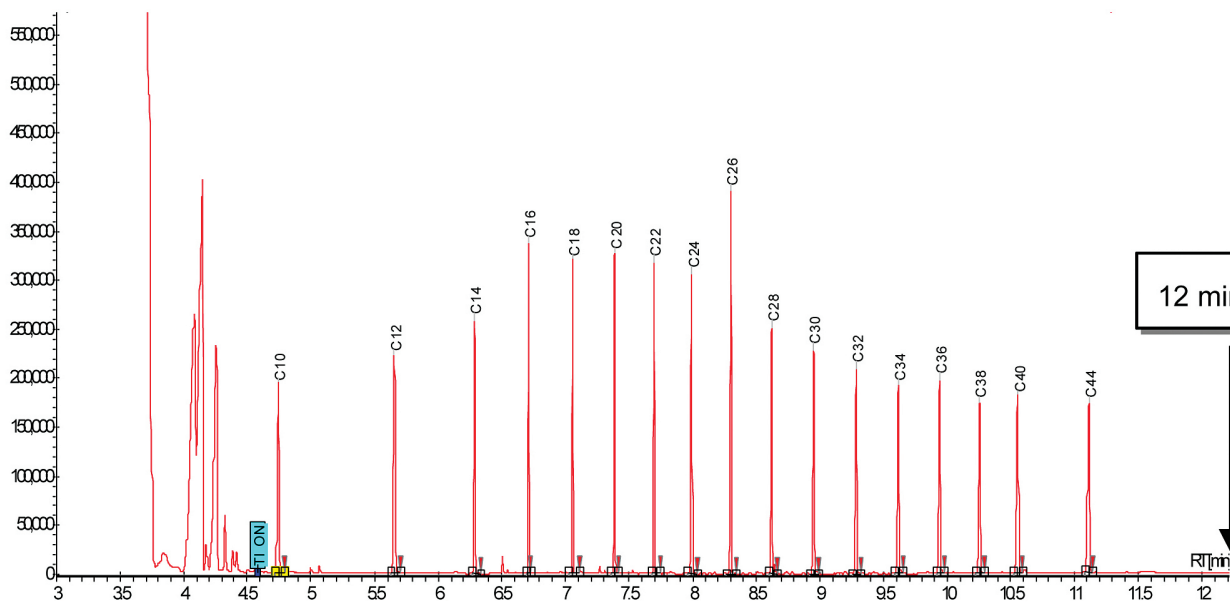
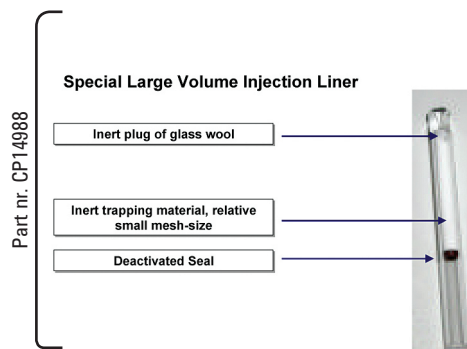
Mineral oils in water can be extracted using different solvents. Most popular are hexane and petroleum ether. Concentrations of mineral oils are very low and to reach sensitivity with FID detection the sample has to be concentrated. The use of large volume injection avoids the preconcentration step as this technique allows sample introduction up to several hundreds of microliters. The Agilent 1079 PTV injector in combination with a specially designed and optimized liner, allows the quantitative determination of mineral oils down to ppb levels using the large volume injection technique.



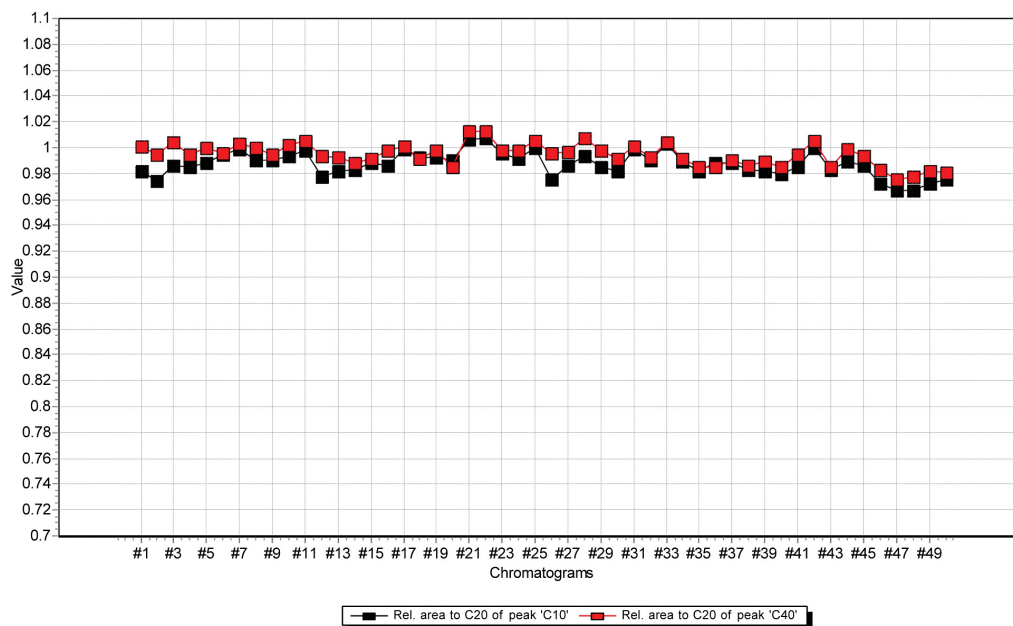
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## Conditions

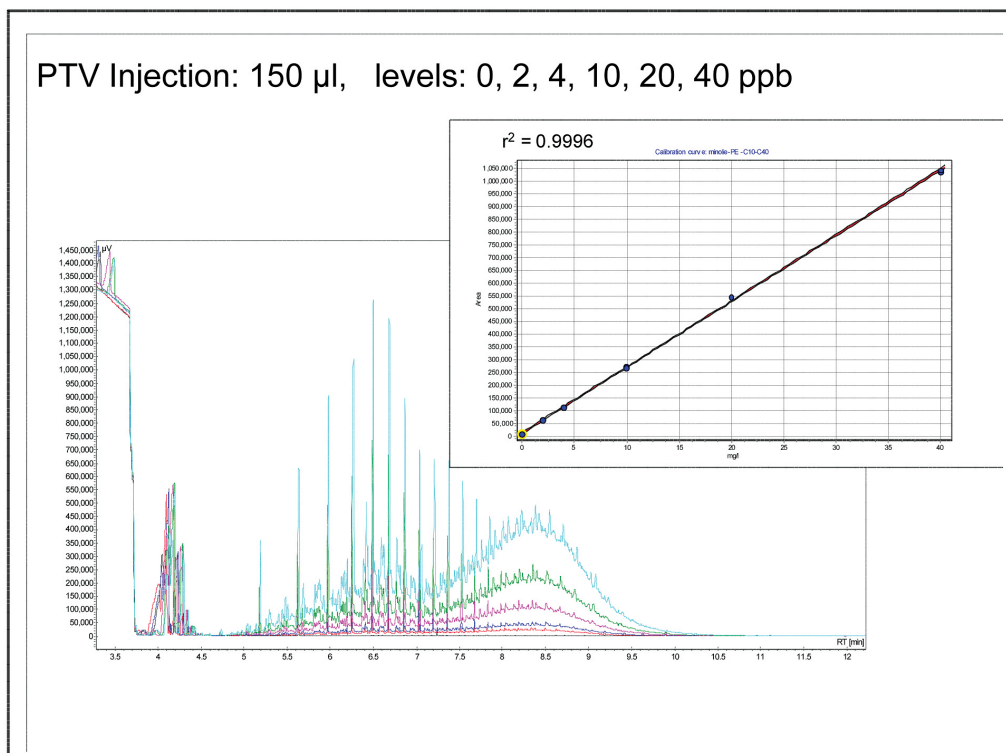
Technique : GC  
Column : Agilent Select Mineral Oil, 0.32 mm x 15 m  
(Part no. CP7492)  
Oven Program : 35 °C for 4 minutes, 300 °C at ballistic speed  
Carrier Gas : Helium, 50 kPa, constant flow 2 mL/min;  
Pressure Puls : 80 kPa, during time split is closed  
Injection : PTV 1079 with optimized liner;  
PTV-program : 45 °C, 25 s → 350 °C, 200 °C/min.  
Injected amount : 150 µL  
Split : 75 mL/min; Split closed after 30 s; Open after 3 min  
Detector : FID  
Sample Concentration : 50 ppb in petroleum ether



Peak area ratio of  $C_{10}/C_{20}$  (black) and  $C_{40}/C_{20}$  (red), 50 consecutive injections alkane standard in petroleum ether, injection volume: 150  $\mu$ L



### Calibration mineral oil in petroleum ether



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