



Analysis of Ethylene Glycol in Engine Oil

PD200



- Sensitive glycol detection in used engine oil
- Optimised GC analysis with Trace GC 1600
- Accurate quantification of coolant contamination
- Fast and reliable engine condition monitoring

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Ethylene Glycol in Engine Oil analyser

This product note describes the analysis of ethylene glycol (EG) in engine oil using Gas Chromatography (GC). The GC method is designed to provide accurate, sensitive, and quantitative detection of glycol contamination in lubricating oils.

Principle of operation

Ethylene glycol contamination in used engine oil is a critical indicator of coolant leakage and potential engine failure. Accurate and timely detection is essential for condition monitoring, preventive maintenance and failure analysis. Traditional methods such as ASTM D4291-98 are often labour-intensive and time-consuming, limiting sample throughput in routine laboratory environments. The GAS Ethylene Glycol in Used Engine Oil Analyser provides a high throughput alternative based on gas chromatography with headspace sampling. Ethylene glycol is chemically derivatised by Phenylboronic Acid in the autosampler vial, increasing its volatility and reducing polarity. After controlled incubation, a defined headspace volume is injected using a Triplus headspace autosampler. The analysis is performed on a single channel Thermo Trace GC1600, offering a cost-effective, robust and reproducible solution for routine ethylene glycol determination in used engine oils.

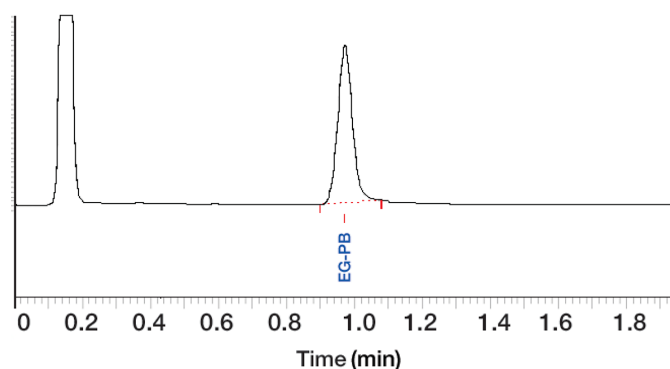


Figure 1 Chromatogram of glycol in used oil using derivatisation and headspace extraction.

Specification

- Thermo Trace GC1600 with SSL (Split-splitless injector), capillary column, FID.
- Headspace sampler is optional.
- Chromeleon chromatography data system.
- Analysis time: 3 minutes; 18 minutes incubation time.
- Concentration range: 0.01% - 1%
- Minimum detectability: better than 0.005%
- Precision: 3% RSD

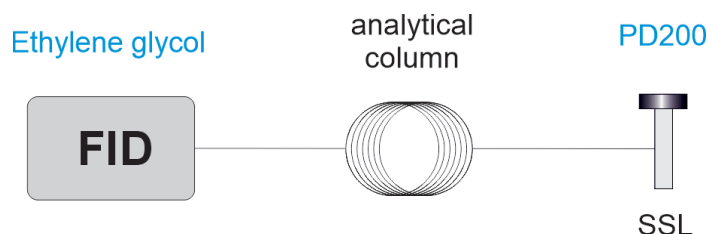


Figure 2 Analyser diagram

Ordering information	PF20X - ABCDE			
code X	0	1	2	3
GC model, power	1600, 230V	1610, 230V	1600, 115V	1610, 115V

For the selection of options (e.g. GC oven cryo valves, Power plug type and more), [see the options table in the order guide.](#)

About GAS

Global Analyser Solutions provides GC & GC-MS solutions for Energy, Refinery, Chemical and Environmental markets. Our analysers address a broad spectrum of measuring requirements with high precision and reliability. Please reach out for more information on our website.

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