

eGC *environmental* Gas Chromatograph Benzene Chromatography

The eGC benzene application is configured to operate in a refinery environment typically associated with petroleum storage tanks, wastewater treatment plants and petroleum transfer stations.

INTRODUCTION

The eGC is a highly specific monitor capable of measuring trace (i.e., sub-ppbv) levels of benzene in ambient air in complex refinery environments. This data sheet describes the performance of many non-target chemicals at varying concentration levels that can be potentially interferants to most gas chromatographic methods.

The eGC achieves this chemical specificity by collecting ambient air samples using a thermally desorbed concentrator and not using direct injection of the sample.

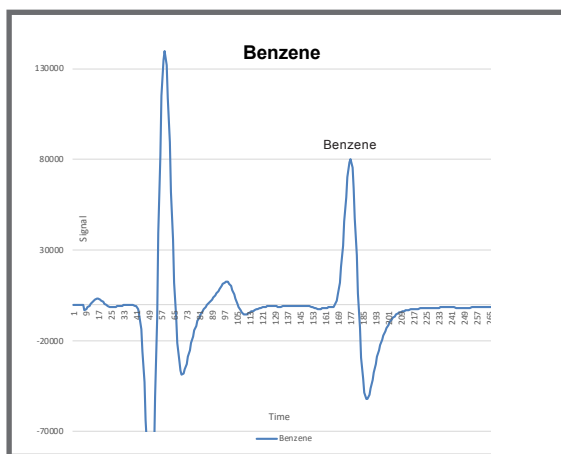
Using a sample collection concentrator offers several analysis advantages which are listed below.

1. Sample enrichment avoids the noise and drift associated with the need to operate the detector at the high gain often required for ppb analysis.
2. The collection adsorption media can be configured to act as a sample filter to collect chemicals that have specific properties.

3. The desorption process can be configured to only allow the release of a specific range of chemicals limiting the analysis complexity and reducing the analysis cycle time.

The eGC uses the combination of a selective sorbent trap, a selective chromatographic column and a long-life, C-H bond sensitive solid-state detector to provide the consistent separation and measurement of benzene from other similar hydrocarbons.

Typical non-target hydrocarbon performance on the eGC analytical column.

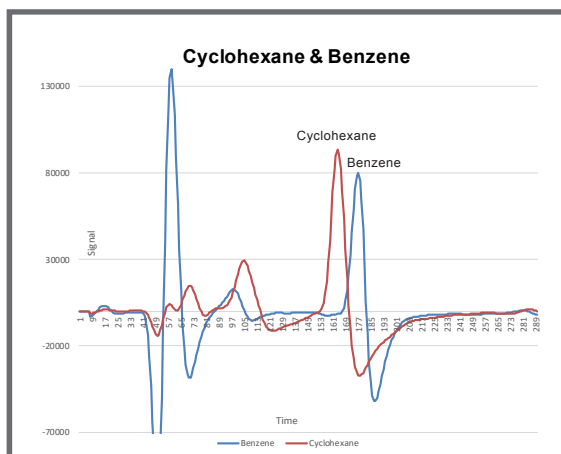
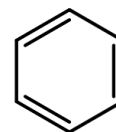


Benzene

C_6H_6

M.W. 78.112 g/m

B.P. 80.1°C

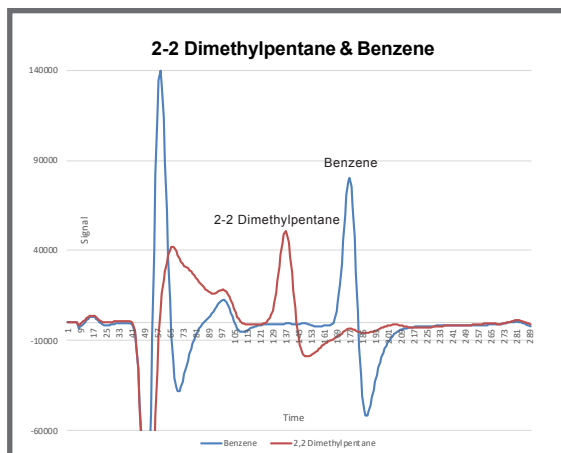
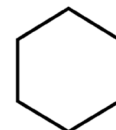


Cyclohexane

C_6H_{12}

M.W. 84.160 g/m

B.P. 80.75°C

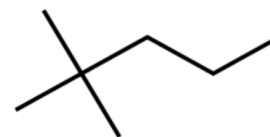


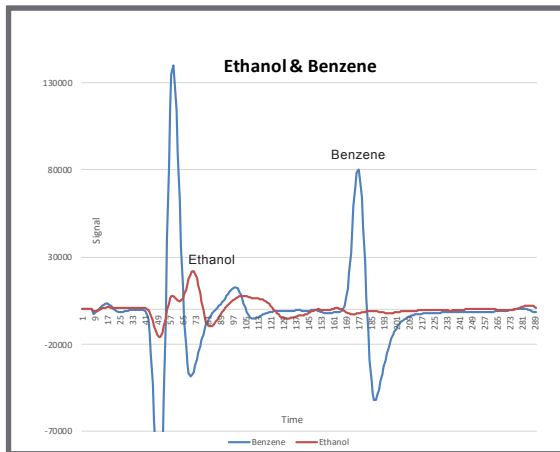
2-2 Dimethylpentane

C_7H_{16}

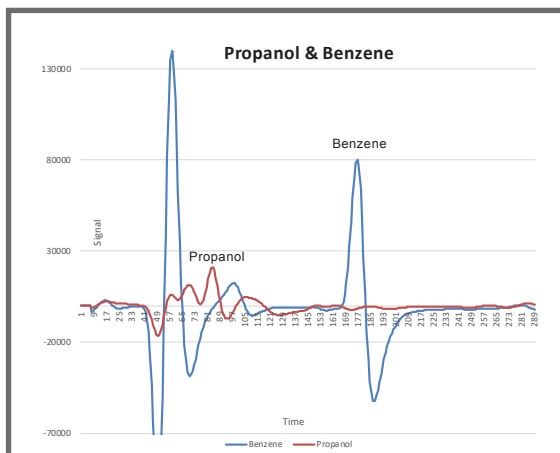
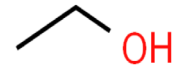
M.W. 100.2 g/m

B.P. 79°C

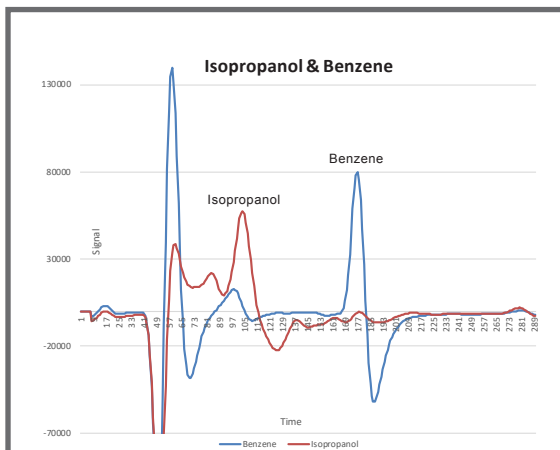
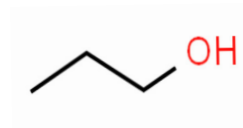




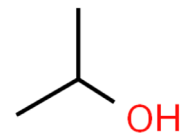
Ethanol
 C_2H_6O
 M.W. 46.068 g/m
 B.P. 78.4°C

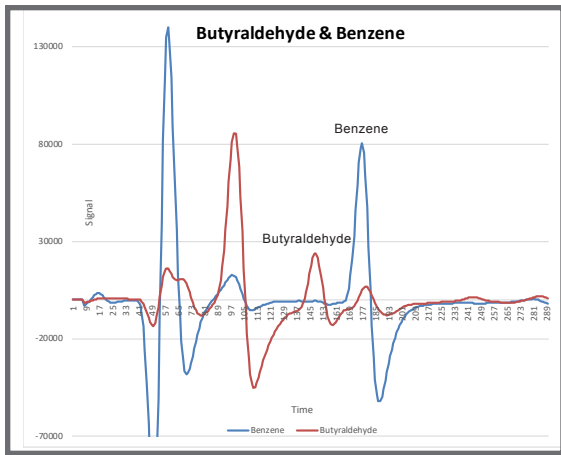


Propanol
 C_3H_8O
 M.W. 60.095 g/m
 B.P. 97°C



Isopropanol
 C_3H_8O
 M.W. 60.095g/m
 B.P. 82.4°C



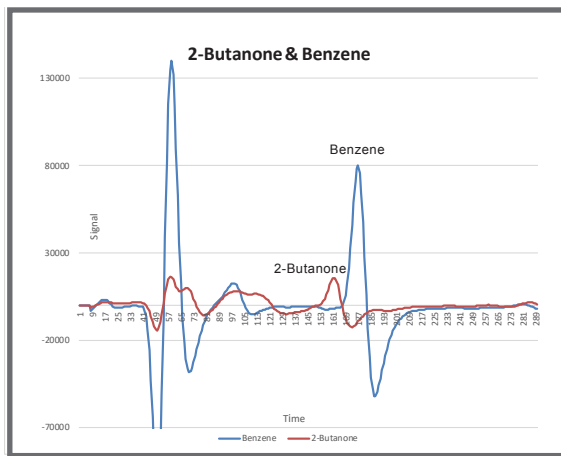


Butyraldehyde

C_4H_8O

M.W. 72.106 g/m

B.P. 74.8°C

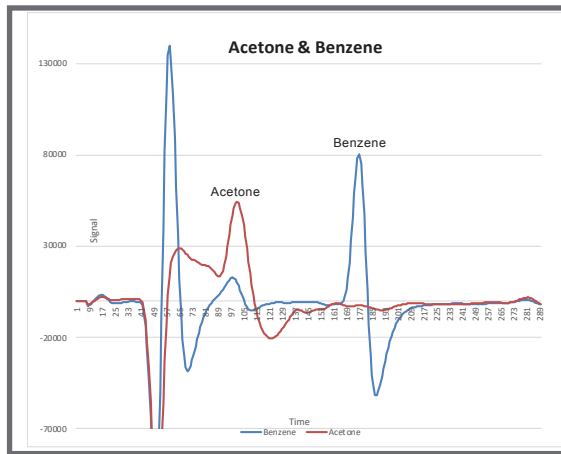
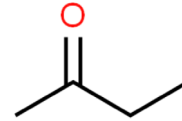


2-Butanone

C_4H_8O

M.W. 72.106g/m

B.P. 79.6°C

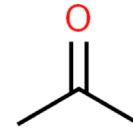


Acetone

C_3H_6O

M.W. 56.08g/m

B.P. 56°C



Contact ENMET's application team for additional information.



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