



eGC *environmental* Gas Chromatograph Benzene in Ambient Air

The eGC measures trace (i.e., sub-ppbv) levels of benzene in ambient air in refinery environments. The eGC is ideal for fence-line or remote monitoring applications where the specific measurement of benzene in atmospheres containing interfering chemicals is essential.

INTRODUCTION

The eGC automatically samples the air, performs a gas chromatographic analysis and sends a report on a ten-minute cycle. The system generates a continuous record of benzene emissions that is logged on the eGC and also uploaded to a user-accessible web server via an on-board cellular modem. The eGC is unique in its ability to operate in uncontrolled hot and cold environments. An accessory wind speed and direction sensor makes the eGC a

highly effective area monitor, giving a near real-time picture of the site emissions. Using an array of eGC units for vector triangulation of emissions provides a way to quickly locate emission sources. The near real-time reporting of the eGC provides valuable temporal information that is very complementary to sample canister or passive tube collection methods.

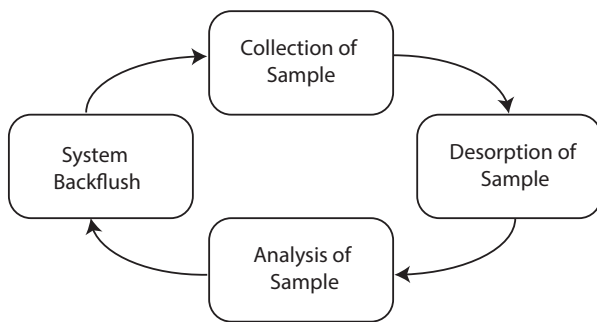
eGC ADVANTAGES

- Fully autonomous operation
- No shelter or wiring construction required
- Automatic calibration
- Laboratory level data quality assurance
- Analysis data fused with local weather conditions and GIS position
- Intuitive graphical data website
- E-mail and text alarm alerts
- Limited maintenance

SAMPLE ANALYSIS METHOD

The eGC uses a selective sorbent trap and thermal desorption to inject a sample of ambient air into the gas chromatograph. The GC column separates benzene from other chemicals in the sample. These chemicals elute sequentially into a solid-state hydrocarbon detector that measures the benzene and generates the analytical result. Upon completion of the analysis time, the GC system is automatically backflushed and prepared for the next analysis.

eGC Analysis Cycle



ANALYSIS SPECIFICATIONS

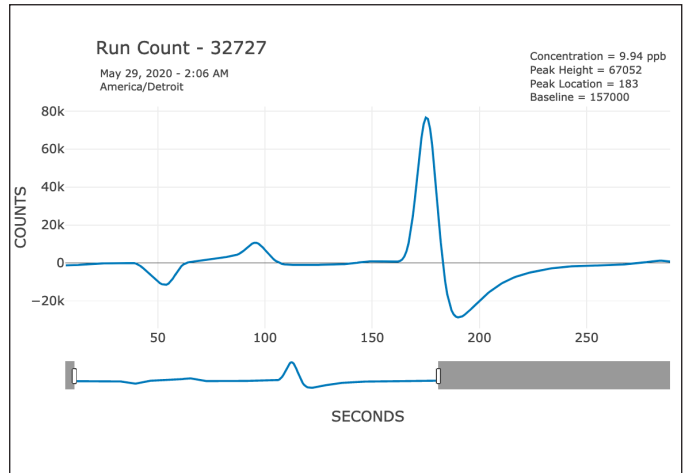
Trace Benzene Application

Measurement Range: 0.25 to 200ppb
Analysis Time: 10 Minutes
Column: 0.53mm x 10m
Column Temperature: +55°C
Ambient Temperature: -10°C to +45°C
Power Input: 12 VDC @ 5A (max)
110-240 VAC

eGC Precision: ±5%
Calibration Std. Accuracy: ±10%

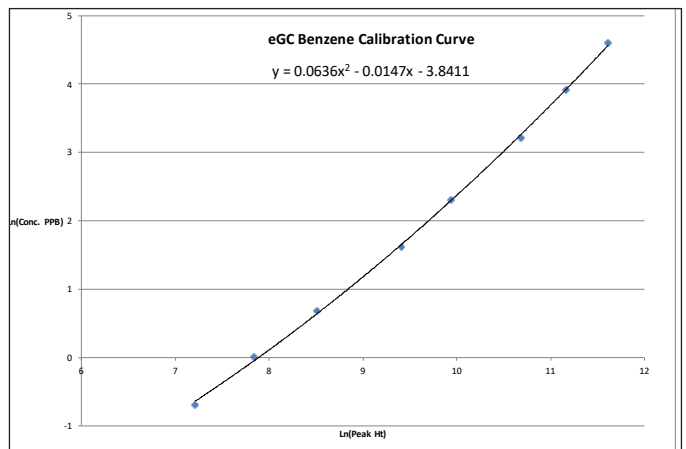
BENZENE CHROMATOGRAM

10.0ppb Calibration Standard



BENZENE CALIBRATION CURVE

Calibration Range 0.0ppb to 200ppb



eGC ORDERING INFORMATION

eGC 110-240 VAC: P/N X1003020
eGC 12VDC: P/N X1003000
Solar Power Kit: P/N X1003511
Weather Kit: P/N X3342000

Contact ENMET's application team for additional information.



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