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### eGC *environmental* Gas Chromatograph 1-3 Butadiene in Ambient Air

The eGC measures trace ppbv levels of 1-3 butadiene in ambient air in chemical process manufacturing environments. The eGC is ideal for fence-line or remote monitoring applications where the specific measurement of 1-3 butadiene 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 1-3 butadiene 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.

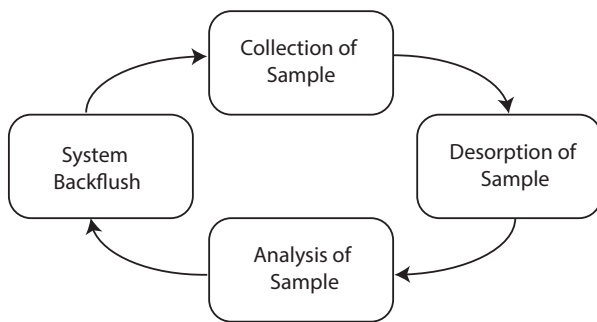
## eGC ADVANTAGES

- 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 1-3 butadiene from other chemicals in the sample. These chemicals elute sequentially into a solid-state hydrocarbon detector that measures the 1-3 butadiene present 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

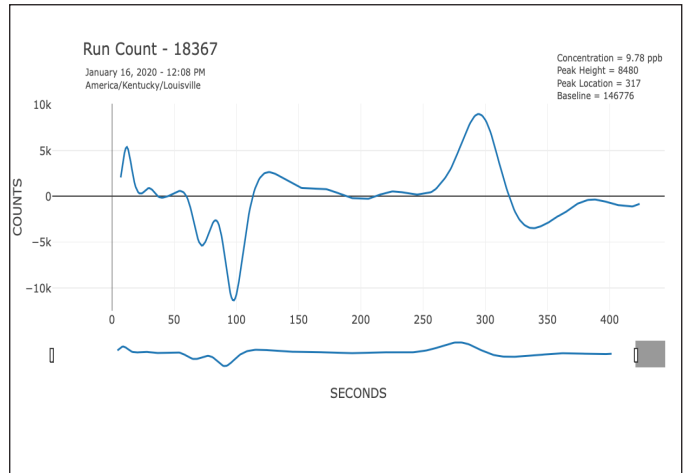
### 1-3 Butadiene Application

Measurement Range: 1.0 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%

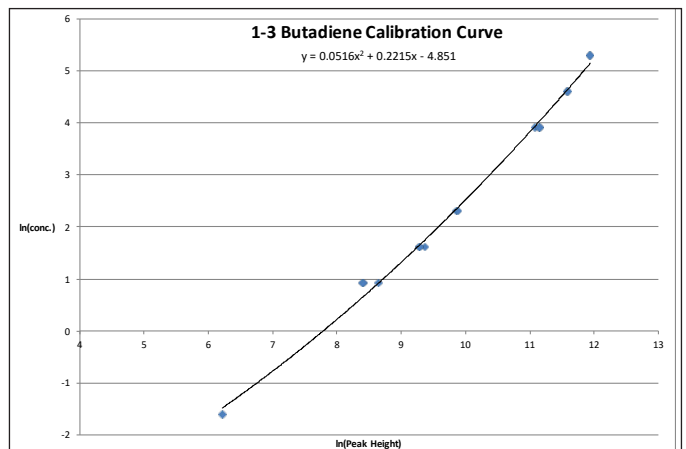
## 1-3 BUTADIENE CHROMATOGRAM

### 10.0ppb Calibration Standard



## 1-3 BUTADIENE CALIBRATION CURVE

### Calibration Range 1.0ppb to 200ppb



## eGC ORDERING INFORMATION

### 1-3 BUTADIENE

eGC 110-240 VAC: P/N X1003021  
eGC 12VDC: P/N X1003001  
Solar Power Kit: P/N X1003511  
Weather Kit: P/N X3342000

Contact ENMET's application team for additional information.



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