

# Model 8900GC Application Note

## Ethylene Oxide

Baseline - MOCON, Inc.™

### APPLICATION

The Model 8900 Ethylene Oxide Analyzer combines the selectivity of gas chromatography with the sensitivity of a Photoionization Detector (PID) providing interference free response to ethylene oxide (EtO) at levels below 0.05 ppm. This analytical method is referenced in OSHA's "Occupational Exposure to Ethylene Oxide; Final Standard" 29 CFR Part 1910.

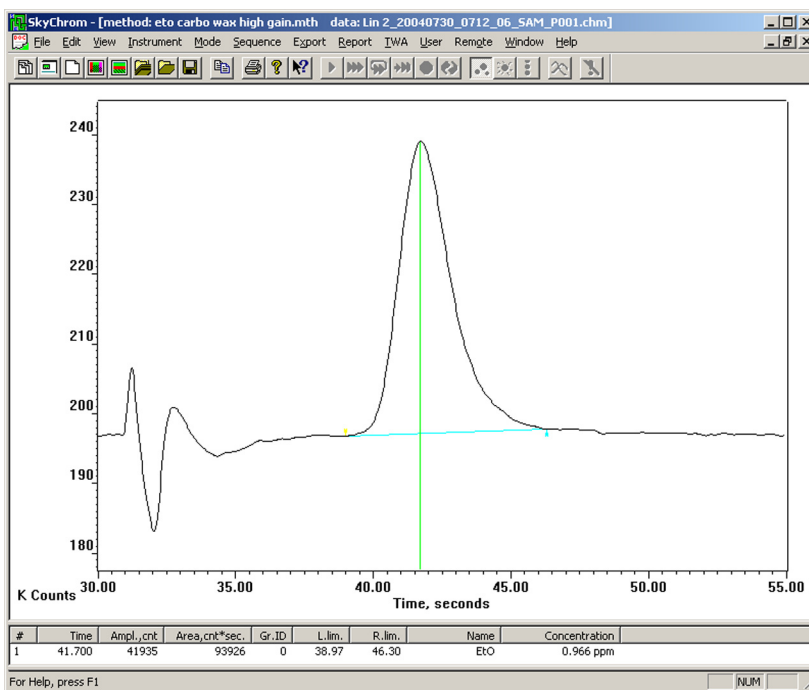
The system documents exposure levels including: time-weighted averages (TWA), short-term exposure limits (STEL) and instantaneous alarms.

Areas that are typically monitored include; EtO Sources - gas storage areas, sterilizer doors, aeration doors, and the General Work Area - decontamination, packaging and preparation and sterile product storage areas.

An integral sampling system expands the analyzers capabilities to monitor 4, 8, or 16 locations. With the addition of the Model 8950 Multipoint Sampler, you can monitor up to 32 locations.

The 8900 EtO Analyzer uses a dual column configuration with timed backflush to vent which is used to strip off moisture and heavier hydrocarbons. A pre-cut column is used in series with the analytical column. At sample injection a fixed sample volume is carried to the pre-cut column. Backflush of the pre-cut column is timed from sample injection so that only EtO and other similar components are eluted from the pre-cut column to the analytical column. Contaminants on the pre-cut column are then vented. EtO is separated from potentially interfering components on the analytical column and elutes to the photoionization detector (PID) and/or optional flame ionization detector (FID) for analysis.

**Baseline, the reference point from which all things are measured.**



### Chromatogram

### Analysis

Analysis Time: <60 seconds  
Detector: PID (FID optional)  
Column: Proprietary Plot Column  
Oven Temperature: 80°C  
Carrier: Nitrogen, 10cc/min typical  
Sample Flow Rate: 500cc/min typical

### Features

- Ethylene Oxide Measurement
- Interference free Response
- Automatic Calibration to a Known EtO Standard
- Offers Multipoint Sampling with Multilevel Alarms for Each Position
- Reports Exposure Levels, TWA, STEL and Instantaneous Alarms
- Convenient data storage
- PC can be Located Outside Potentially Hazardous Area Providing Data Access and Remote Operation
- Optional Local Area Network (LAN) Interface

# Model 8000GC Application Note

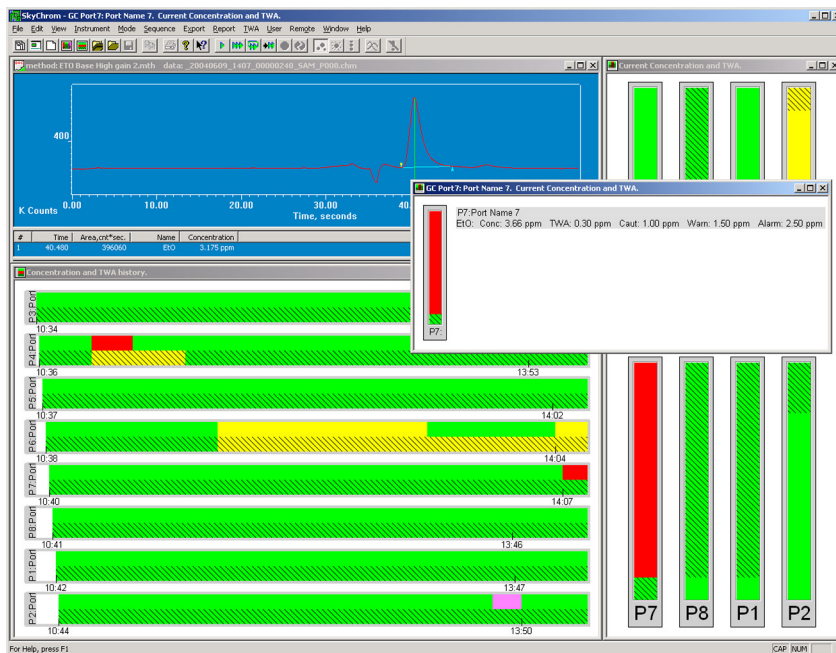
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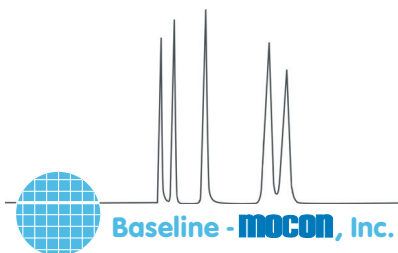
### Specifications

LOWER DETECTION LIMIT	Ethylene Oxide 0.01 ppm
ACCURACY	1% @ 1 ppm
PRECISION	2% of Measured Value
ANALYSIS TIME	<60 Seconds
CARRIER	Nitrogen, 10cc/min typical
SAMPLE FLOW RATE	500cc/min typical
OVEN TEMPERATURE	80°C
OUTPUT	
ANALOG	Standard: (1) 0-20ma or 4-20ma loop power supplied, isolated. Selectable for: gas concentration, unintegrated detector signal or diagnostics. Up to 16 additional programmable 0-20ma, 4-20ma or voltage outputs: 0-1V, 0-5V, or 0-10V.
DIGITAL	Standard: RS-232 output Optional: Local Area Network (LAN)
RELAYS	Standard: (5) User programmable relays for concentration and diagnostic alarms. Up to 32 additional relays available.

Represented by:



SkyChrom Display; Chromatogram, Current Concentration and TWA & Concentration and TWA History



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