

## Propane

Method No. S87

### Substance

Propane

### Standard

8-hour time-weighted average: 1000 ppm (1800 mg/cu m)

Reference: 29 CFR 1910.93

### Analytical Method

The propane vapor present in the atmosphere is measured directly by drawing the air sample into a combustible gas meter properly calibrated with propane. The meter reading is recorded and the equivalent concentration in ppm is read off the calibration curve. The method has been validated over the range of 481-2016 ppm at 20.5°C and 760 mm Hg atmospheric temperature and pressure.

### Sampling Equipment

Dual range explosive gas meter such as the MSA Model 40 is used. No sample is actually collected since the atmosphere to be analyzed is usually drawn into the meter using a rubber aspirator bulb. The air can also be drawn into the meter with a personal sampling pump.

### Sampling Procedure

The instructions given in the manual for the appropriate combustible gas meter used must be followed carefully for proper results. Typically, the procedure will require the following steps:

1. The combustion chamber must be swept free of combustible gases and be filled with fresh air.
2. Batteries must be turned on, and the proper voltage applied to the bridge.
3. The bridge must be balanced to zero deflection on the meter with fresh air in the open chamber.
4. The sample is drawn into the meter, and the meter reading is recorded. Repeat at least three times and report average.
5. The concentration of propane in the air samples tested is determined from the calibration curve provided with the properly calibrated meter.

### Special Consideration

1. Any hydrocarbon present in the atmosphere will interfere with the analysis. Where other hydrocarbons are known or suspected to be present in the air, such information, including their suspected identities, should be noted.
2. Water vapor will impair the proper functioning of the sensing filaments. When testing atmospheres of high humidity, use available cotton filters or special humidity conditioning sample probes to remove excessive dust and moisture from the sample under test.

### Reference

Instrument Manual, MSA Combustible Gas Indicator, Model 40, Mine Safety Appliance Company, Pittsburgh, Pennsylvania.