



Method Summary

Determination of Bulk Gas Composition (suite 1)

Scope and Range

Gas analysis is used widely throughout the chemical industry. Environmentally it is mainly used to investigate gas emissions from boreholes, trial pits, spill troughs and landfill sites. This method measures the composition of methane, carbon monoxide, carbon dioxide, oxygen, nitrogen and hydrogen by Gas Chromatography.

The limits of detection are:

Hydrogen	0.5% v/v
Oxygen	0.5% v/v
Nitrogen	0.5% v/v
Carbon Monoxide	0.05% v/v
Methane	0.05% v/v
Carbon Dioxide	0.05% v/v

References

ASTM D 1945-91 Standard test method for Analysis of Natural Gas by Gas Chromatography

Principle

Samples are supplied in tedlar bags, greshams tubes, silonite canisters, plastic gas bombs or pressurised gas cylinders.

The gas components are separated by Gas Chromatography, detected using a Thermal Conductivity Detector (TCD) and identified from their retention times.

Interferences

Thermal Conductivity Detection is a non-specific means of detection. Any substances with thermal conductivities different to that of the carrier gas that co-elute from the chromatographic column with any of the components of will interfere with this determination.