

ASTM D1945-03(2010) Standard Test Method for Analysis of Natural Gas by Gas Chromatography

Significance and Use

This test method is of significance for providing data for calculating physical properties of the sample, such as heating value and relative density, or for monitoring the concentrations of one or more of the components in a mixture.

1. Scope

1.1 This test method covers the determination of the chemical composition of natural gases and similar gaseous mixtures within the range of composition shown in Table 1. This test method may be abbreviated for the analysis of lean natural gases containing negligible amounts of hexanes and higher hydrocarbons, or for the determination of one or more components, as required.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents *(purchase separately)*

ASTM Standards

D2597 Test Method for Analysis of Demethanized Hydrocarbon Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography

D3588 Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels

E260 Practice for Packed Column Gas Chromatography

3. Practical Application

Instrumentation: [Agilent 6890 GC with FID](#) ([Ctrl + Click to follow link](#))

Column: Zebron™ ZB-1, GC Cap. Column 60 m x 0.32 mm x 1.00 µm

Column Phase: 100% Dimethylpolysiloxane

Injection Mode: Split/Splitless

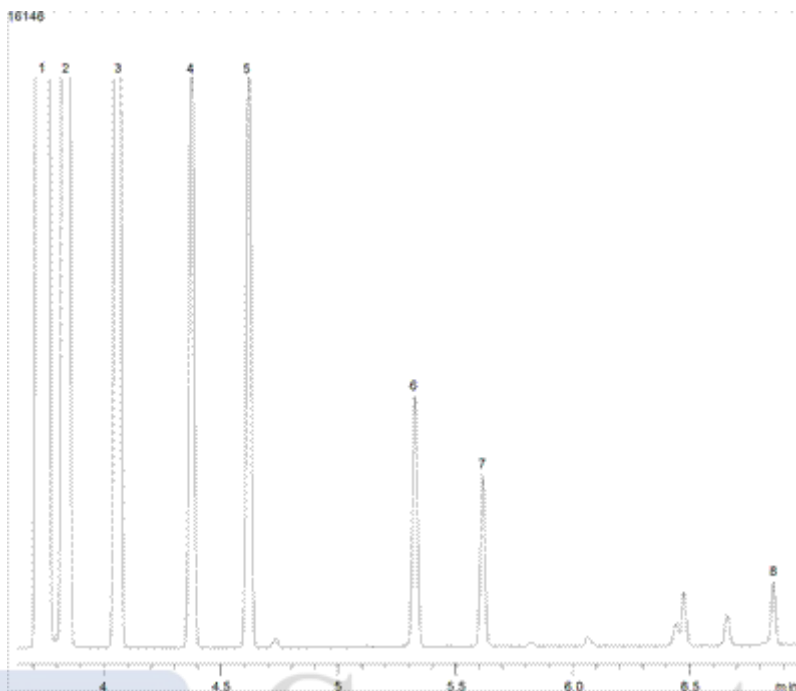
Carrier Gas: Helium at 2.0 mL/min constant flow

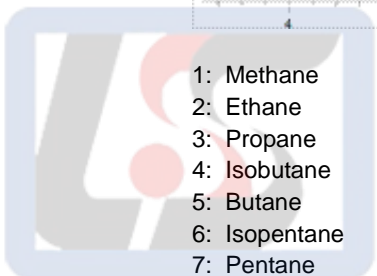
Col./Oven Temp: 35 °C hold 3 min, to 200 °C at 30 °C/min, then hold

Inlet temperature: 250 °C

Injection volume: 500 µL, split 50:1

GC Detection: FID at 250 °C



- 
- 1: Methane
 - 2: Ethane
 - 3: Propane
 - 4: Isobutane
 - 5: Butane
 - 6: Isopentane
 - 7: Pentane
 - 8: Heptane

SpectralLab

Scientific Incorporation

References: <http://www.astm.org/Standards/D1945.htm>
<http://www.phenomenex.com/Application/Detail/16146>