Agilent Technologies
Innovating the HP Way

PRAXAIR

Certificate of Analysis

Universal Gas Calibration Standard

Agilent Part No: 5183-4800, 5184-3541 **Sample Lot No:** 112701A

Concentrations (±mole%):

Helium	0.0978% (±5%)	n-Hexane	0.0476% (±5%)
Neon	0.0490% (±5%)	n-Heptane	0.0481% (±5%)
Hydrogen	0.0981% (±5%)	Water content (H_2O)	<5 ppm
Oxygen	0.0494% (±5%)	Other impurities (HC's)	<1 ppm
Nitrogen	0.0982% (±5%)		
Methane	Balance		
Ethane	0.0533% (±5%)		
Ethylene	0.0507% (±5%)		
Carbon Dioxide	0.0491% (±5%)		
Carbon Monoxide	0.0990% (±5%)		
Acetylene	0.0473% (±5%)		
Propane	0.0510% (±5%)		
Methyl Acetate	0.0496% (±5%)		
n-Butane	0.0502% (±5%)		

Traceability:

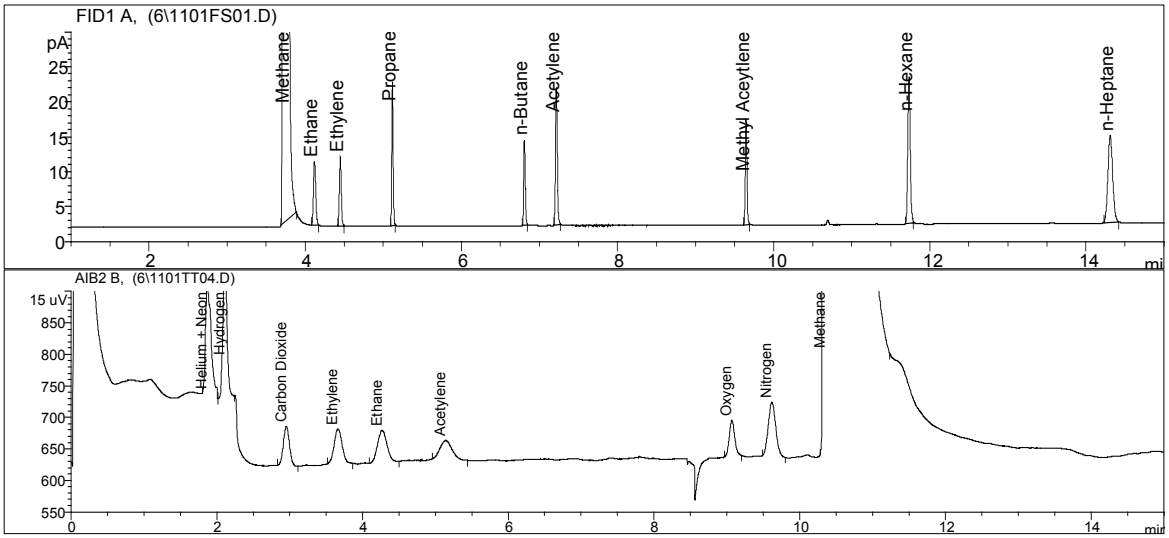
This standard was produced gravimetrically following Specialty Gas Work Instruction #15. Balances used are calibrated per POIS 2.140, traceable to NIST. Concentrations were verified on an Agilent model 6890 gas chromatograph, using a Wasson valve switch, Variable Pressure Control and multiple packed/capillary columns.

Standards Used:

Praxair UGS Primary Standards, serial #s: H177474, 167228, 529117, 12064AW; source #SA13714.

Analytical GC Chromatogram:

Analytical columns: Agilent MS-5A PLOT, U-PLOT
TCD: 1.0 ml loop; He carrier at 35 ml/min; oven temp = 90degC
FID: 0.1 ml loop; He carrier at 30 ml/min; split ratio=25:1; Ramp 75degC for 6 min to 180degC for 3.75 min at 20degC/min



Date of Release: 30 November, 2001
Expiration Date: 30 November, 2003

Analyst: Alan M. Toth
Alan M. Toth, Chemist, Praxair, Inc.