



High Purity Analyser

PG400



- ASTM D8098
- ppb permanent gases in C_2 and C_3 hydrocarbon streams
- Using Pulsed Discharge Detector (PPD, PDHID)

Get ready for tomorrow's analytics

Trace analysis of permanent gases in C₂ and C₃ hydrocarbon products by GC-PDD according to ASTM D8098

This method covers the determination of hydrogen, nitrogen, oxygen, methane, carbon monoxide, and carbon dioxide in the parts per billion mole (nmol/mol) to parts per million mole (μmol/mol) range in C₂ and C₃ hydrocarbons

Instrumentation

The trace gas analyser is configured using a Thermo Trace GC 1600 with Pulsed Discharge Detector (PDD / PDHID), 2 purged diaphragm valves and 3 separation columns. The 10 port valve injects the sample and backflushes the matrix compound using column 1. CO₂ is separated on column 2, and elutes to the PDD via restriction R. H₂, O₂, N₂, CH₄ and CO are temporarily isolated and separated using column 3 and subsequently detected.

The used columns are:

1. Rt-Qbond, 30 m × 0.53 mm
2. Rt-Qbond, 30 m × 0.53 mm
3. Rt-MSieve, 30 m × 0.53 mm

Specification

- Thermo Trace GC1600 with two diaphragm gas switching valves and Pulsed Discharge Detector (PDD)
- 3 capillary columns
- Runtime: 7 minutes
- Minimum detectability: see table
- Repeatability: < 1 %

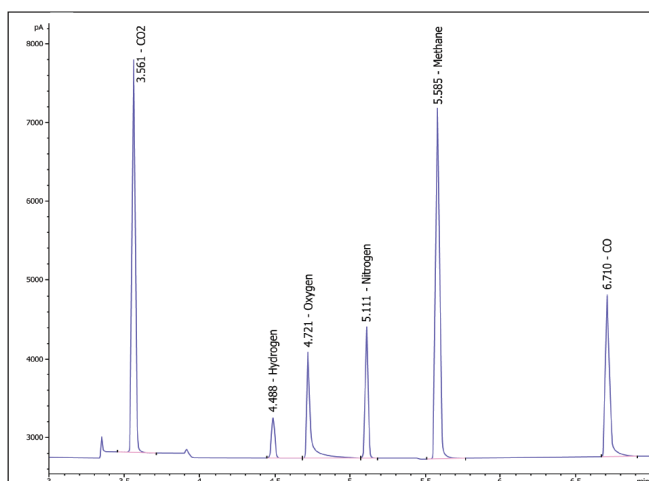
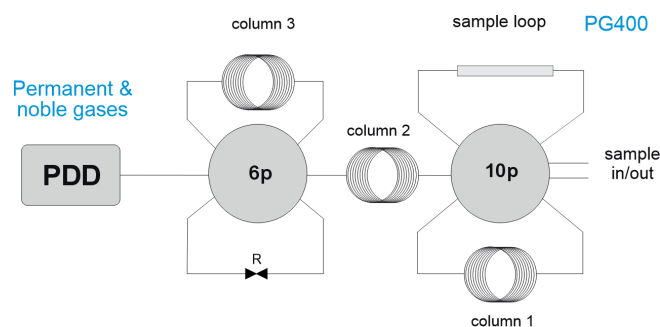


Figure 2 Chromatogram of ASTM D8098 analyser



Results

Figure 2 shows the chromatogram; figure 3 displays the limit of detection (3*s/n).

H ₂	< 20 ppb
O ₂	< 10 ppb
N ₂	< 10 ppb
CH ₄	< 10 ppb
CO	< 20 ppb
CO ₂	< 10 ppb

Figure 3 Limit of detection, based on 3* s/n for each component.

Ordering information PG40X - ABCDE

code X	0	1	2	3
GC model, power	1600, 230V	1610, 230V	1600, 115V	1610, 115V

For the selection of options ABCDE (e.g. valve type and passivation, pump and vacuum sampling, rotameter and sample connections, pressure and moisture sensors, hydrogen sensor for safety shut-off, power plug type and more), [see the options table in the order guide](#).

About GAS

Global Analyser Solutions provides GC & GC-MS solutions for Energy, Refinery, Chemical and Environmental markets. Our analysers address a broad spectrum of measuring requirements with high precision and reliability. Please reach out for more information on our website.

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