

Fast Refinery Gas Analysis

Configuration of an Agilent Technologies 7890N Series Gas Chromatograph with flame ionization and dual thermal conductivity detectors (TCD/TCD/FID) for the fast refinery gases.

Determined Components on the FID include: C1 through C5 paraffins and olefins

- Methane
- Ethane
- Ethylene
- Propane
- Propylene
- Acetylene
- Isobutane
- Propadiene
- n-Butane
- t-2-Butene
- 1-Butene
- Isobutene
- c-2-Butene
- Isopentane
- n-Pentane
- 1,3-Butadiene
- n-Hexane
- Initial C6+ backflush to detector

The lower quantifiable limit on the FID is 40 ppm except for trace peaks eluting on the tail of a major component. Due to the speed of the analysis, partial co-elution of the C5 olefins will occur.

Determined Components using TCD 1

- Carbon dioxide
- Oxygen/argon composite
- Nitrogen
- Methane
- Carbon monoxide

Lower quantifiable limit of 400 ppm except for carbon monoxide (800 ppm). TCD 2 detects hydrogen to a lower quantifiable limit of 200 ppm.

An analysis time of approximately 6 minutes is expected. Requires split/splitless capillary inlet with Electronic Pressure Control.