

Extended Natural Gas and Fixed Gas Analysis

Configuration of an Agilent Technologies 7890N Series Gas Chromatograph with thermal conductivity and flame ionization detectors (TCD/FID) for the comprehensive natural gas.

FID Determined Components:

- C1 through C12 hydrocarbons

TCD Determined Components:

- isobutane
- n-butane
- isopentane
- n-pentane
- Carbon dioxide
- Ethane
- Hydrogen sulfide
- Propane
- Oxygen
- Nitrogen
- Methane
- Initial C6+ composite backflush to detector

Components identified on the FID during method development include:

- n-Paraffins
- Benzene
- Toluene
- Ethylbenzene
- Xylenes

The lower quantifiable limit on the FID is 2 ppm for all components except those eluting on the tail of a major preceding peak.

The lower quantifiable limit on the TCD is 400 ppm for all components except propane (800 ppm) and hydrogen sulfide (1000 ppm).

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Repeatability Table RSD = Relative Standard Deviation 95% Argon / 5% Methane					
FID A	Methane				
Runs	Ret. Time	Area			
1	2.953	3827.97412			
2	2.953	3818.05981			
3	2.953	3823.42798			
4	2.953	3804.98047			
5	2.952	3809.80322			
6	2.953	3803.39014			
7	2.953	3793.88184			
Average	2.953	3811.64537			
St. Dev	0.000349927	11.20019			
% RSD	0.0119%	0.2938%			
TCD B	Argon		Methane		
Runs	Ret. Time	Area	Ret. Time	Area	
1	27.694	185529	29.704	8108.4917	
2	27.697	185177	29.706	8090.43994	
3	27.698	184871	29.708	8083.49023	
4	27.698	184468	29.706	805091602	
5	27.698	185133	29.707	8089.59131	
6	27.698	184140	29.708	8046.31104	
7	27.697	184485	29.706	8072.81445	
Average	27.697	184829	29.706	8077.4	
St. Dev.	0.00136	451.7683	0.00129	20.7412	
% RSD	0.0049%	0.2444%	0.0044%	0.2568%	