



Low-level sulphur analyser

PG625



- Analysing sulphur components at ppb levels
- PFPD detection
- Can be combined with other analysers (RGA, PGA, etc.)
- ASTM D6228, D5504, ISO 19739

Get ready for tomorrow's analytics

Find out more on www.gassite.com

Low-level sulphur analysers for petrochemical samples

The GAS Low-level sulphur analyser based on CompactGC^{4.0} provides precise measurement of volatile sulphur species in hydrocarbon streams and bulk gases. It can operate independently as a standalone analyser or be combined with existing instruments like refinery gas analyser (RGA) or permanent gas analyser (PGA) to provide an extra analysis channel.

Principle of operation

The low-sulphur analyser for petrochemical applications comprises a gas sampling valve (GSV), a suitable separation column, and a PFPD (Pulsed Flame Photometric Detector); see figure 1. As sulphur species readily adsorb onto active surfaces, Sulfinert (SilcoNert 2000) deactivation is applied to the entire sample path, a measure that is critical for reliable and accurate quantification.

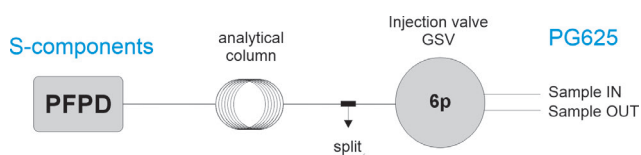


Figure 1 Diagram low level sulphur analyser

Choice of separation column

The choice of the optimal separation column depends on the components being analysed and the sample matrix. Available column phases include non-polar, sulphur-selective, and porous polymer.

Specification

- GAS CompactGC^{4.0} with GSV, capillary column and PFPD
- Programmable column oven (optional)
- Chromeleon chromatography data system
- Runtime: dependent on application
- Minimum detectability PFPD: 20-30 ppb
- Repeatability < 1%

Results

Figures 2-5 show chromatogram, repeatability data, linearity data and a table with limits of detector for the PFPD

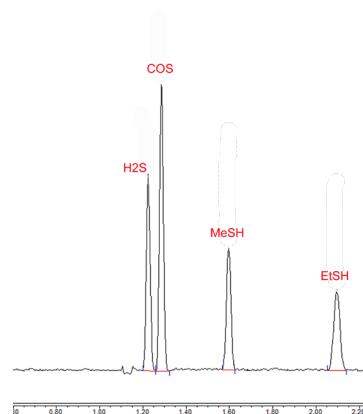


Figure 2 Chromatogram calibration standard.

GC-PFPD ID	H2S Area	COS Area	CH3SH Area	C2H5SH Area
PFPD_071	7553680	7716514	6026713	6764988
PFPD_072	7575351	7695225	5928588	6794046
PFPD_073	7648397	7698997	6013745	6725392
PFPD_074	7608142	7713938	6034135	6895520
Min:	7575351	7695225	5928588	6695520
Max:	7653680	7716514	6034135	6794046
Mean:	7621393	7706144	6000790	6744989
Std Dev:	36820	10646	48880	43352
%RSD:	0.48	0.14	0.81	0.64

Figure 3 Statistical data

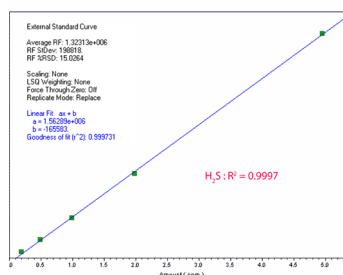


Figure 4 Linearity curve of H₂S: $r^2 = 0.9997$ (100ppb-5 ppm). ($r^2 > 0.995$ for all components)

Component	LOD (ppb)
H2S	17
COS	18
CH3SH	25
C2H5SH	27
i-C3H7SH	39
C3H7SH	30
THI	22
THTHI	30

Figure 5 Limits of detection for PFPD

Ordering information PG625 - ABCDE Low-level sulphur analyser using PFPD

For selecting 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. www.gassite.com