

H₂S Analyser with Vapour Phase Processor SA4000-4

H₂S in liquid petroleum products and crude oil

ASTM D7621; IP 570

ISO 8217; ISO/PAS 23263

- Measurement range from 0-250 mg/kg H₂S (0-250 ppm H₂S) in the liquid phase
- Built in Vapour Phase Processor proven to eliminate effects of chemical interference
- IP 570 Procedure A is referee test in ISO 8217
- A non chemical method, no wet chemistry involved
- Small lab bench footprint
- Integral camera to aid sample input
- Custom result reporting and LIMS output
- Weighing balance connectivity and automation
- Automated gas calibration
- Statistical Quality Control software
- Critical measurement method for product safety and release



Crude Oil • Marine Fuel

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H₂S Analyser

The H₂S Analyser with Vapour Phase Processor (VPP) is a compact bench-top instrument, used to measure the total hydrogen sulphide (H₂S) content of fuel oils, such as marine residual fuels, distillates and petroleum blend stocks. The H₂S Analyser can measure H₂S concentrations from 0 to 250 mg/kg (ppm) in the liquid phase.

The H₂S Analyser is ideal for supporting product Quality Control and safety ensuring product is within approved specification. It is also ideal for both product remediation treatment of feedstock components and off-spec products with fast repeat sample measurement capability.

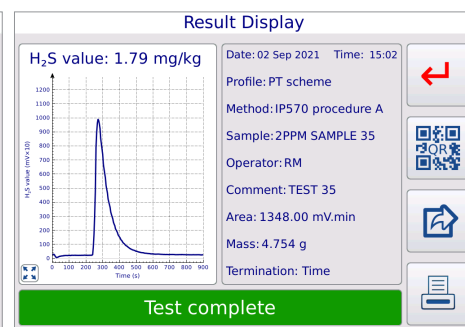
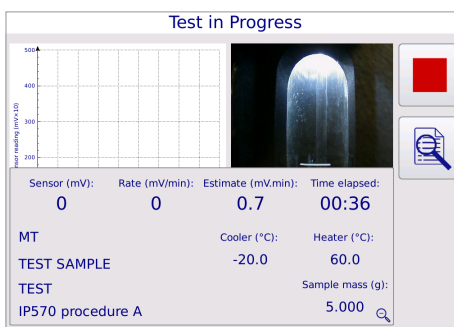
A limit of 2 parts-per-million (2 ppm) in the liquid phase was set by the industry in 2012 under ISO 8217, which made IP 570 Procedure A the referee test for H₂S.


IP 570 includes the use of verification fluids as a recommended practice. Participation within a Proficiency Test Scheme (PT Scheme) is stated as the preferred means to achieve this.



Operator Interface

Start of Test	
Vessel: 20.9 °C	VPP: 24.1 °C
Operator: RM	Sensor: 0 mV
Sample ID: 2091006	Rate: 0 mV/min
Test profile: Marine fuel	
IP570 procedure A	
Cooler temperature: -20 °C	
Test vessel temperature: 60 °C	
Comment: NO COMMENT	



> Enter operator and sample details, press 

> Prepare test following steps given, test begins, instrument sequences

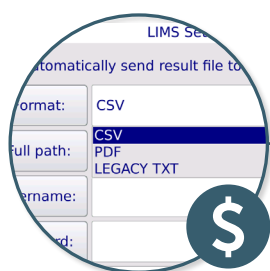
> Final result displays numerically and graphically

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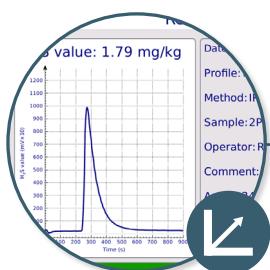
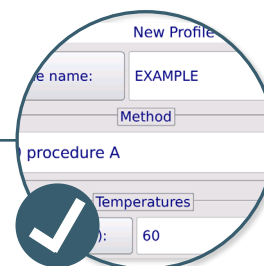


Cost Saving

- Low operator time due to simplicity of set up and no need for analytical preparation by an experienced chemist, reducing labour costs
- A non chemical method, no costly or hazardous chemicals required
- Small test volume, 1 ml, 2 ml, 5 ml (depending on H₂S concentration), can help reduce cost and waste
- LIMS or network compatible for quick result interpretation, increasing productivity
- In-field calibration eliminates time and costs associated with sending the instrument to a service centre

Ease Of Use

- Features simple user interface with touchscreen display
- Custom user profiles are easily programmed
- Integrated camera showing test vessel aids sample input and ensures the correct amount of sample is used

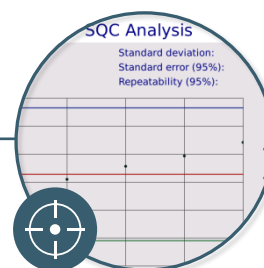


Enhanced Functionality

- Test vessel temperature control at 20 °C and 60 °C
- Real-time graphical display of test progress
- Custom result reporting
- Automated gas calibration
- Connectivity to weighing balance with automated sample mass reading helps save both time and avoid data entry errors

Precision and Accuracy

- Integrated VPP removes components that may affect the accuracy of results, such as toluene, xylene, thiols (mercaptans) and alkyl sulphides
- SQC analysis allows analysis of results in accordance with ASTM D6299
- IP 570 Proficiency Testing Scheme (PT Scheme) is available to ensure continued compliance to IP 570



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Technical Specifications

Methods	
Method compliance	IP 570 Procedure A (referee test) and B
Operation	
Measurement range	0-250 mg/kg H ₂ S in the liquid phase (0-250 ppm H ₂ S)
Viscosity range	1 - 3000 mm ² /s at 50 °C
Principle of measurement	Electro-chemical sensor
Test duration	15 minutes
Sample size	1 ml, 2 ml, 5 ml (depending on H ₂ S concentration)
Diluent volume	20 ml
Data Management	
Results format	Numerical and graphical display
Memory	500,000 result memory Print via external printer, export to LIMS, USB or QR code
Connectivity	RJ45 Ethernet, RS232 Serial or USB
Power requirements	
Voltage	100/240 V, 50/60 Hz, Auto-sensing universal power supply
Physical	
Size (HxWxD) / Weight	520 x 290 x 570 mm / 15 kg

Required Accessories

Part Number	Description
SA4001-2	Static Calibration and Verification Kit Includes traceable verification gas, replacement regulator and a connection hose
SA4003-4	H ₂ S Start Up Kit Includes the following for 20 tests. Graduated test vessels (pack of 5), 2 x nylon filters, 500 ml diluent, VPP cartridges (pack of 10), 20 x 10 ml syringes
SA4011-0	Air Flow Calibration and Verification Kit Includes a calibrated flowmeter, stand and 1m of tubing. H ₂ S airflow calibration is required monthly as per IP 570
SA4019-2	H ₂ S and VPP Temperature Calibration Kit Includes calibrated thermometer and temperature calibration equipment (test block and insulation). Temperature calibration is required every 6 months

Optional Accessories

Part Number	Description
SA4002-0	Personal H ₂ S Alarm
SA4004-0	Pipette
SA4008-0	Test Vessel Heater
SA4021-4	H ₂ S Crude Oil Test Kit
SA4032-0	PT Scheme Quarterly Subscription
SETA-0512-0024	H ₂ S Verification Material 2 mg/kg
SETA-0512-0025	H ₂ S Verification Material 9 mg/kg
81002-3	Data Printer
99130-0	Analytical Balance