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pGC-MS 3035

Portable Gas Chromatography Mass Spectrometry

EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Overview:

The new generation of pGC-MS 3035 portable gas chromatography-mass spectrometry p(GC-MS) is a portable device for rapid qualitative and quantitative analysis of on-site organic matter, which can be used for rapid qualitative and quantitative analysis of volatile organic compounds (VOCs) in the atmosphere, water and soil, as well as semi-volatile organic compounds (SVOCs) in pesticides, drugs and explosives. At present, it is widely used in emergency monitoring, environmental monitoring, disease control, public security criminal investigation, fire control and other fields. pGC-MS 3035 Portable pGC-MS has excellent environmental adaptability and meets the needs of customers to obtain accurate analysis results in real time. It is an ideal on-site organic
analysis expert!

Features:

The equipment is highly integrated, and the ultimate field portability

Liquid inlet

Whole heat tracing technology in zero cold zone is suitable for the detection of semi-volatile organic compounds

Gas electric warehouse

Battery, carrier gas, and internal standard system are fully built-in

Parallel design, one key switching

System software

Intelligent interaction, wizard operation

Sorbent tube/quantitative loop

Parallel design, one key switching

Waterproof, dustproof and earthquake-resistant, strong environmental adaptability

The equipment is designed to be dustproof, waterproof andearthquake-resistant, fearless of the harsh environment challenges on site.

Multiple application methods, comprehensive scene applicability

Single/double shoulder

The whole machine is less than 19kg, and can be carried byone person, allowing you to easily reach the core area to obtain reliable on-site results.

Portable mode

On-site monitoring trolley integrated power module, shock-absorbing design, assists sensitive point inspection, and saveson-site inspection and effort.

Vehicle carry mode

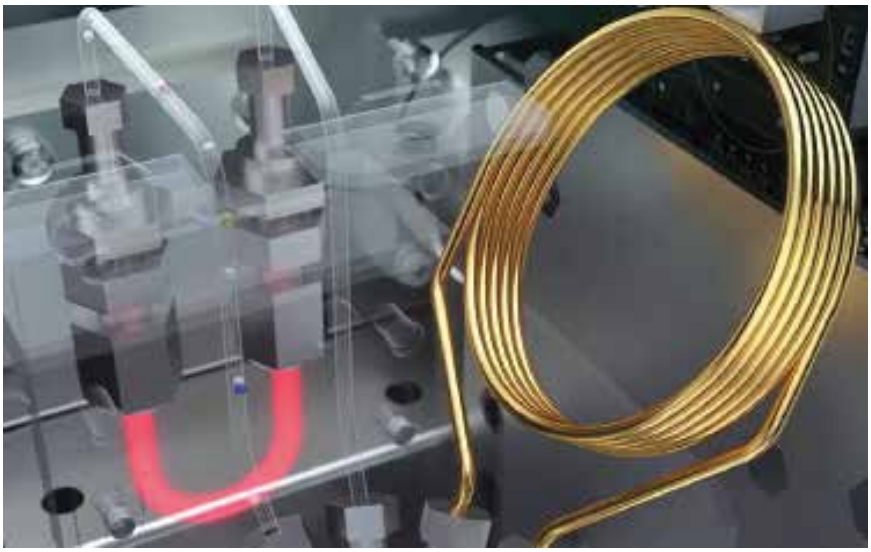
The equipment can be quickly fixed to the shock-absorbing platform in the mobile inspection vehicle and complete the boot warm-up, fearless of complicated road conditions, and start working immediately after arriving at the scene.

Offline sampling

For dangerous areas, drones are used for remote sampling,and
Portable GC can be used for on-site analysis directly after sampling.

Multiple sampling modes, one machine with multiple functions and full configuration

Sorbent tube/quantitative loop injection



The second-level response realizes the rapid positioning of pollutants, and there is no vacuum constraint, which can be used continuously forrapid screening.

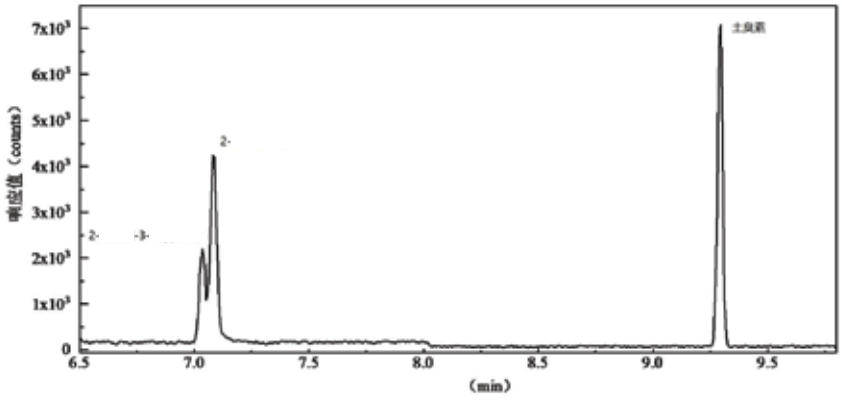
Headspace injection

It is mainly used for the detection of volatile organic compounds in water and soil, and can also be used for the detection of other materialmatrices.

Needle injection/SPME injection

Combined with liquid injection port, it is mainly used for the detectionof semi-volatile organic compounds in drugs, water, soil and other matrices.

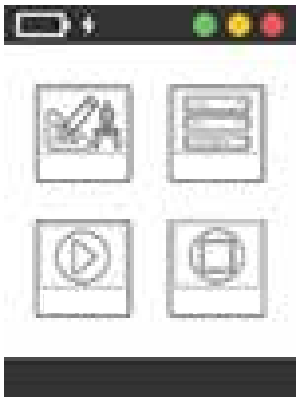
A variety of scanning modes, the sensitivity is greatly improved



The product has full scan mode, selected ion scan mode andMS/MS scan mode, in which the detection limit of geosmin and 2-methylisocanthol is less than 10ppt.

Intelligent software, wizard operation

Intelligent interaction, no need for professional technical background to become an on-site organic analysis expert.



probe interaction

host interaction

Application:

Emergency monitoring

Rapid response and accurate quantification can be achieved through the single mass spectrometry injection mode and gas chromatographymass spectrometry injection mode, and the on-site situation can be grasped at the first time to assist scientific decision-making.

Environmental monitoring

One-button switching to analyze trace VOCs in ambient air and ultra-highconcentration VOCs in pollution sources. In addition, the VOCs and SVOCs in water and soil can be qualitatively and quantitatively analyzed through headspace and solid-phase microextraction comprehensive pretreatmentequipment.

Disease control

Sampling and analysis can be carried out at different locations in the workplace,and the test results can be given quickly. In addition, the product can collect thepatient's exhaled breath for qualitative and quantitative analysis to assist in thediagnosis of related diseases.

Technical Specification of pGC-MS-3035 Portable:

The pGS-MS 3035 Portable pGC-MS is based on gas chromatography-mass spectrometry p(GC-MS) technique for the analysis of organic pollutants in the field. It can be equipped on a mobile carrier for monitoring, or can be moved over the shoulder or handheld to sites that are inaccessible by car for rapid qualitative and quantitative analysis of volatile and semi-volatile organic chemical contaminants. The pGS-MS 3035 Portable pGC-MS uses a single mass spectrometer membrane injection technique, gas chromatography separation technique and ion trap mass spectrometry technique. After passing through the pre-treatment equipment, the sample is fed through a chromatographic injection system or a membrane injection system and then into a mass analyzer to be tested to obtain the qualitative and quantitative results of the sample.

The pGS-MS-3035 Portable pGC-MS consists of an injection system, a gas chromatography module, a gas-mass interface and a mass spectrometry module. The principle of operation is shown in Figure 1: the sample enters the chromatographic separation module through the injection system, where the sample is separated; the separated sample then enters the mass spectrometry module in turn for analysis, and finally the qualitative and quantitative results are obtained through data processing.

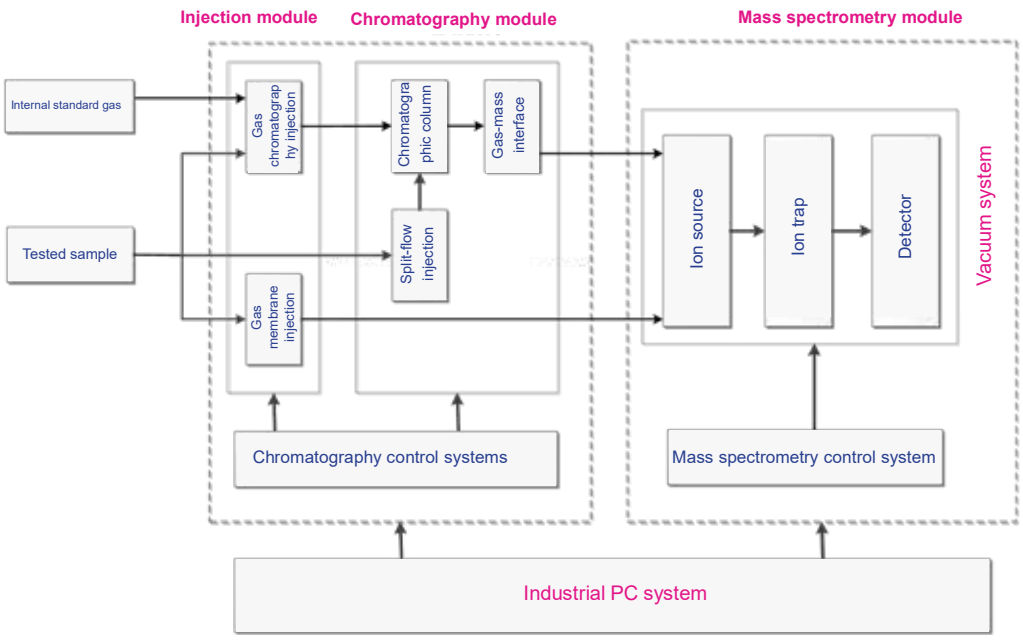


Figure 1Block Diagram o f pGS-MS-3035 Operating Principle

As a new portable pGC-MS, the pGC-MS 3035 not only features a stable and reliable instrument with high environmental adaptability, but also has the advantages of fast analysis speed, high sensitivity, high contamination resistance and a wide range of injection methods.

(1)Fast analysis speed: in addition to the separation efficiency of fast

chromatography being 5 times higher than that of conventional chromatography, the membrane injection technique allows the sample to enter the mass spectrometry directly without passing through the chromatography, reducing the response time to seconds, making it very suitable for rapid screening.

(2)A wide range of testing options: with injection modes such as direct mass

spectrometry injection, sorptive thermal desorption injection, quantitative ring injection, headspace injection, needle injection and solid phase microextraction injection, covering all the current sample introduction modes on portable pGC-MS applications, it enables fast mass spectrometry with second response, ambient air detection at low concentrations, pollution source detection at high concentrations, VOCs and SVOCs detection in water and soil.

(3Environmental adaptability: the instrument can operate at -5°C to 45°C and a low air pressure of 54kPa; it is also waterproof to IP55

(4)Easy software operation: intelligent wizard-based operation for sample testing and data analysis, greatly reducing training costs and complexity of field use.

(5)The ion trap's unique multi-stage mass spectrometry scan mode: SIS scans and

MS/MS scans can be performed on substances of interest, which can greatly increase detection sensitivity and reduce false positives.

Table 1 pGS-MS-3035 Specification and Technical Data Sheet:

Performance indexes	Mass range	(15~550) amu	
	Resolution	Better than 1amu	
	Injection mode	Software switchable single mass spectrometry injection, pGC-MS internal standard sorbent tube injection, pGC-MS internal standard quantitative ring injection	
	Scanning mode	Full Scan, Selective Ion Monitoring (SIM) and Secondary Mass Spectrometry (MS/MS) scanning modes are available	
	Sensitivity	Single mass spectrometric injection	Toluene (5mg/m3) S/N: ≥10
		pGC-MS sorbent tube injection	Toluene (10ppb) S/N: ≥50
		pGC-MS split inlet injection	Octafluoronaphthalene (100 pg/μL): S/N≥15 (272amu)
	Single mass spectrometry response time	Toluene 1 ppm: ≤30s; second response time	
	Single mass spectrometry recovery time	Toluene 1 ppm: ≤30s; second recovery to reduce the impact on the next sample	
	Dynamic range	10^7	
	Ion source	EI source, ionisation energy 70eV	
	Detector	Electron multiplier tube	
	Quality analyzer	Ion trap mass analyzer	
	Main unit weight	≤20kg (including gas cylinder and battery)	

	System volume	44cm×43cm×22cm
	Anti-vibration grade	Meets the requirements of GJB150.16A-2009
	Waterproof grade	Meets IP55
	Vacuum	≤3000 μTorr
	Automatic tuning	The instrument can be automatically calibrated on the mass axis of the main unit
	Calibration function	The internal standard can be added automatically and in real time during the analysis of the sample to achieve the calibration function of the internal standard.
	Pre-sampling function	Ensure that each analysis is not affected by the dead volume of the sampling line
	Blowback function	Ensure that the residue of the sorbent tube after each analysis does not affect subsequent analyses
	Carrier gas	Helium gas in a carrier gas bottle built into the main unit
	Sampling flow	Sampling flow is controlled electronically and adjustable
Operating parameters	Power supply	220VAC±10% / 50HZ, or rechargeable battery
	Environmental temperature	-5 to 45°C
	Storage temperature	-20~70°C
	Relative humidity	(0%~95%) RH
	Ambient pressure	May be used in highland areas.54 kPa~101.3 kPa
External communication	Positioning system	GPS, BeiDou dual-mode system, switchable; real-time positioning of the sample testing site
	Communication mode	LAN
		WIFI
Software	Database	NIST Standard Spectrum Library
		Automated mass spectral deconrolution and identification system (AMDIS)
		National Institute for Occupational Safety and Health (NIOSH) Database

		Instrument Specific Spectrum Library for Environmental Samples
		Safety Instructions of Chemicals (SIC)
		Environmental Standards Reference Database
	Data acquisition	Built-in IPC with touch screen human-machine interaction;
	Data processing	Built-in IPC; human-machine interaction: touch screen External PC; human-machine interaction: keyboard and mouse

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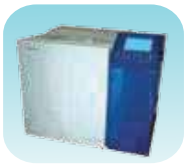

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