

GCMS-3068

Gas Chromatography - Quadrupole Mass Spectrometer



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Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Gas Chromatography-Quadrupole Mass Spectrometer

Stable and efficient high-end analysis tool

Gas Chromatography-quadrupole mass spectrometer (GC-MS) Analytical Technology is a laboratory bench type device independently developed by the team based on their more than 20 years of experience in mass spectrometry research and development .GS-MS is featured by the ultra-insert sample flow path,the high-precision gas path control and analysis quadrupole and the durable and highly sensitive detector,which ensures its stable and efficient quality.

By inheriting the classic software and hardware operating habits,the GC-MS is easy to use, preventing the user from re-learning,saving time, and focusing more on obtaining accurate analysis result efficiently.Replying on the reliable materials,reasonable structural design and complete system testing ,the GS-MS has excellent mobile properties. With the ultra-efficient capacity to create a vacuum environment, the GS-MS can easily adapt to the diversified application scenarios in addition to the laboratory ,such as the online , vehicle-mounted and navigation scenarios, achieving multiple purposes by one machine.

Inheritance to the classic workstation without changing the usage habits

- ▶▶ The workstation software inherits the classic operation interfaces, allowing users not to change their usage habits.
- ▶▶ With the batch processing function ,the statistical analysis is automatically performed on sample data,to draw sample trend charts



Self-developed high-precision analytical quadrupole

- ▶▶ The all-metal main quadrupole with pre-quadrupole perfectly blocks the contamination from entering the mass analyzer, making the main quadrupole maintenance-free
- ▶▶ The ion source outlet lens is seamlessly connected to the pre-quadrupole, effectively shielding the fringing field effects and ensuring quality detection accuracy .



Durable and highly-sensitive detector

- ▶▶ The target ion flow passes through the triple off-axis trajectories before reaching the electron multipliers, effectively shielding the neutral interference and reducing the baseline noise
- ▶▶ Highly durable electron multiplier effectively reduces the usage cost of mass spectrometer



Ultra-stable liquid injection port

- ▶▶ The full electronic flow control is adopted and the self-diagnosis function is supported, eliminating the need for manual soap leakage detection and reducing the risk of system contamination.
- ▶▶ Optional injection port subjected to the permanent super-inert surface treatment is applicable to the detection of highly adsorbent and corrosive samples.



Ultra-high precision electronic flow controller(EPC)

- ▶▶ The EPC kernel is made of ruby material, with the consistent and excellent performance in flow control
- ▶▶ EPC's pressure control precision is up to 0.001psi



Outstanding human-machine interaction experience

- ▶▶ With the human-machine interaction based on Android smart operating system, in combination with the skeuomorphic graphic UI design, the monitoring content is displayed intuitively and clearly.
- ▶▶ 8-inches large color screen display, with a resolution of 1280*720(RGB), supports the capacitive screen full-touch operation



Applications in laboratory and vehicle-mounted scenarios

- ▶▶ With the excellent anti-seismic design, GS-MS is easy to be deployed on the vehicle, free from the impact of bumps on the analysis result
- ▶▶ A vacuum environment can be created in an ultra-efficient manner for immediate measurement after the parking, saving the valuable time



Enrich the sampling system with high-adaptability connection Automatic liquid sampler

- ▶▶ 16 position, 110 positions and 150 positions can be selected for the sample according to its throughput
- ▶▶ It supports the dual-tower simultaneous injection function



Automatic headspace sampler

- ▶▶ 75 positions are available for waiting of high-throughput sample, and 12 positions for simultaneous sample heating.
- ▶▶ It supports the priority injection of urgent samples



Multifunctional sampler

- ▶▶ It supports the liquid, headspace/solid-phase microextraction multi-mode sample injection
- ▶▶ It supports SPME automatic fiber aging



Atmospheric preconcentration sampler

- ▶▶ Samples can be cooled to -160°C without consuming liquid nitrogen
- ▶▶ Complete set of sampling, multi-position sampling, tank cleaning, standards and other accessories are provided



Automatic air bag sampler

- ▶▶ It supports 30-positions high-throughput air bag sample or syringe injection
- ▶▶ The direct injection of gas samples or the injection after enrichment and thickening is optional



Heart-cutting accessories

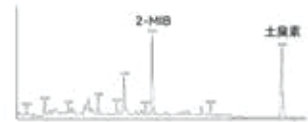
- ▶▶ Locally co-distilled chromatographic peaks in complex samples can be further separated in the second column of different polarity
- ▶▶ It supports the full flow path constant flow method analysis in column 1 and column 2



Enrich the industry applications and facilitate the scientific research and exploration in laboratory

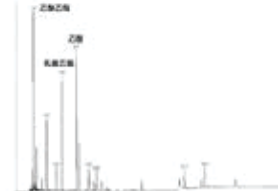
Find the source of odors in drinking water

Objectionable odors appear due to the presence of trace olfactory substances in drinking water. GC-MS and the related solutions can achieve the highly-sensitive analysis of odorants in water at ppt or even sub-ppt levels, easily meeting the requirements of GB 5749.



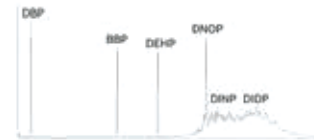
Reveal the secrets of fragrance

In daily life, it is always interesting to explain the chemical composition of the characteristic flavor, so as to realize the origin traceability and authenticity identification. However, the aromatic substances are difficult to be captured, isolated and identified. GC-MS integrates an efficient flavor excitation and introduction system, which can truly reproduce the complex aroma composition in nature through the chromatography and mass spectrometry, thereby helping the laboratory to successfully reveal the secret of aroma.



Protect the health and detect the plasticizers in plastics

However, system contamination caused by high boiling points makes it difficult to achieve the blank, linear and reproducible plasticizer analysis. With the selected system materials, optimized ionization efficiency, and anti-pollution design, GC-MS can solve the problems such as the background blank, working curve linearity, and system reproducibility.



Support the drug and poison analysis, to protect people's safety

Drugs and poisons abused, as well as the related metabolite compound molecules, usually have highly reactive groups and have strong mental stimulation to the human body. They greatly disturb the peak shape and sensitivity in the analysis process. GC-MS shields

inertization, to obtain stable and excellent peak shapes.



►► Description

The GCMS 3068 Series Gas Chromatography - Quadrupole Mass Spectrometer is based on advanced gas chromatography and mass spectrometry technology, it has best-in-class performance.

►► Features

● GCMS 3068 the most sensitive and reliable mass-selective detector including:

- EI source with extractor lens set for best-in-class sensitivity
- The mass spectrometry signal is enhanced several times, broadening the detection limit of the instrument.
- Higher mass spectrometric sensitivity allows the use of smaller sample volumes, thereby reducing operating costs for transportation, storage, preparation, and waste disposal.
- All-metal quadrupole with pre-quadrupole effectively reduces main rod contamination and keeps the mass analyzer clean.
- A new generation of multiple off-axis detectors for neutral noise elimination
- The MSD interface is controlled by a mass spectrometer and can reach up to 400 °c

● The best choice for laboratory chromatography including:

- High-precision carrier gas and temperature control to achieve highly repeatable chromatographic performance
- Rapid equilibrium technology of oven temperature achieves the minimum waiting time between two injections.
- Equipped with intelligent functions such as self-diagnosis, leak detection, gas saving, etc., it is easy to know the status of the instrument.

● The workstation software inherit classic operation mode

- Mass Pandit acquisition and analysis software is based on the classic operating interface, so users do not need to change their usage habits.
- The batch processing function can automatically perform statistical analysis on sample data and support drawing sample trend charts.

● Fully inert flow path

- Ultra-inert flow path from inlet to detector prevents analytes decomposition, resulting in higher reproducibility and increased confidence in results
- Ultra-Inert components include inlets, liners, columns, fittings, and mass spectrometry ion sources

● Complete system solution

- Covers diverse sample preparation and sampling equipment for gas, liquid, solid samples, etc. to meet the needs of a wide range of laboratory applications.

►► **Installation acceptance indicators**

Signal-to-noise ratio installation reference index			
Instrument configuration	Ion source	EI scan signal-to-noise ratio	Sample concentration
GCMS 3068	With extractor lens set	1,500 : 1 (m/z 272)	1p g/ μ L OFN

GCMS Mass Selective Detector (MSD) System specifications	
Ionization mode (standard)	EI
Ionization energy	0-124eV
Emission current	0-300 μ A
Filament	EI source is equipped with double filament
Interface temperature	The maximum temperature is no less than 400 °c
Ion source temperature	The maximum temperature is no less than 350 °c
Mass filter	All metal quadrupole
Mass range	1.5-1100u
Mass resolution	Unit
Mass axis stability	Better than 0.10u / 48 hours
Detector	Multiple off-axis detector with high-energy dynodes and long-life electron multipliers
Dynamic Range	1 0 ⁶
Scan rate	10000u / s
SIM channels	64 ions \times 128 groups
Vacuum system	Turbo molecular pump 250L /s, plus mechanical oil pump 4m ³ / h, or mechanical dry pump 10.8 m ³ / h
Vacuum lock	Equipped with shutdown vacuum quick locking function to reduce the stabilization time of secondary startup
Maintenance convenience	Ion source (including filament and lens), mass filter, and detector are located on removable plates for easy access

Maintenance convenience

The ion source visual window displays the ion source type, filament operation, and ion source connection status

The ion source (including filament and lens) and electron multiplier can be removed from the instrument within one minute after vacuum evacuation.

Data system

Acquisition software	Mass Pandit
Scanning mode	Supports SCAN , SIM and SCAN/SIM modes
Autotune	One-touch autotune
Data analysis software	Mass Analchrom Analyse
Analysis report	Built-in smart report templates
Spectral library	NIST
Target deconvolution	Integrated deconvolution and spectrum matching for analysis of lowconcentration targets in complex matrices

Safety and operating conditions

Acoustic emission	Noise < 70db
Power	220V AC , 600 W
Operating environment	1 5-35 °c, relative humidity 2 0%-80% - no condensation (during operation)
	-40-70 °c, relative humidity 0%-95% - no condensation (during storage)

HPLC Servicing, Validation, Trainings and Preventive Maintenance :

HPLC Servicing :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

Trainings :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

AMC's/CMC :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

Validations :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

Instruments :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

Our Products & Technologies



Regulatory compliances



Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



Analytical Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at Info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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