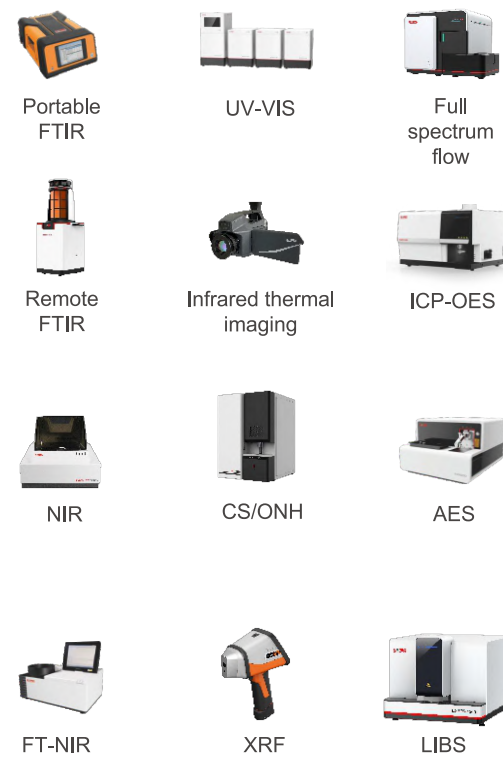


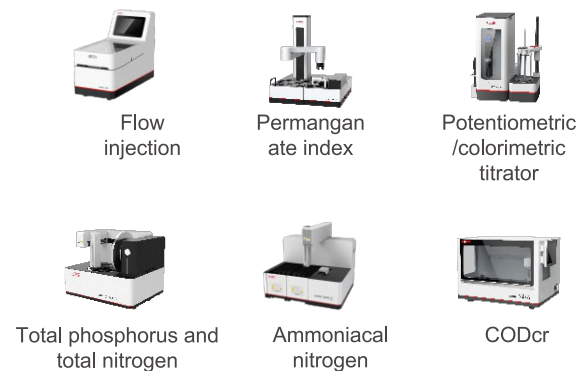
Chromatograph-mass spectrometer



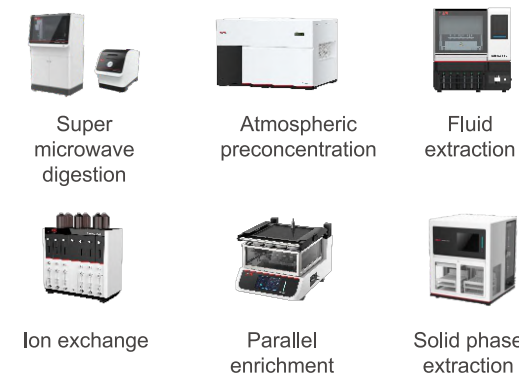
Spectrometer



Physical and chemical



Preprocessing



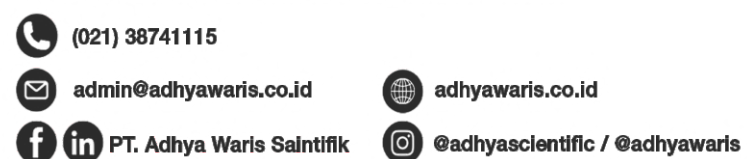
EXPEC 3750 GC-MS

Gas Chromatograph-Quadrupole Mass Spectrometer

Multi-dimensional application, Stable and Efficient Operation



Ruko Arya Kemuning Blok A No.4
Sukamaju, Kec. Cilodong, Kota Depok, Jawa Barat 16415





About EXPEC

Founded in 2015, and headquartered in Hangzhou, Zhejiang Province, Hangzhou EXPEC Technology Co., Ltd. (EXPEC Technology) is a national high-tech enterprise focusing on the R&D, industrialization, and innovative application of major scientific instruments. Through innovation, we aim to achieve automated and intelligent analysis, detection and monitoring in the field, grow into a world-leading scientific instrument manufacturer and support China's aspiration to become a major player in the field of scientific instruments.

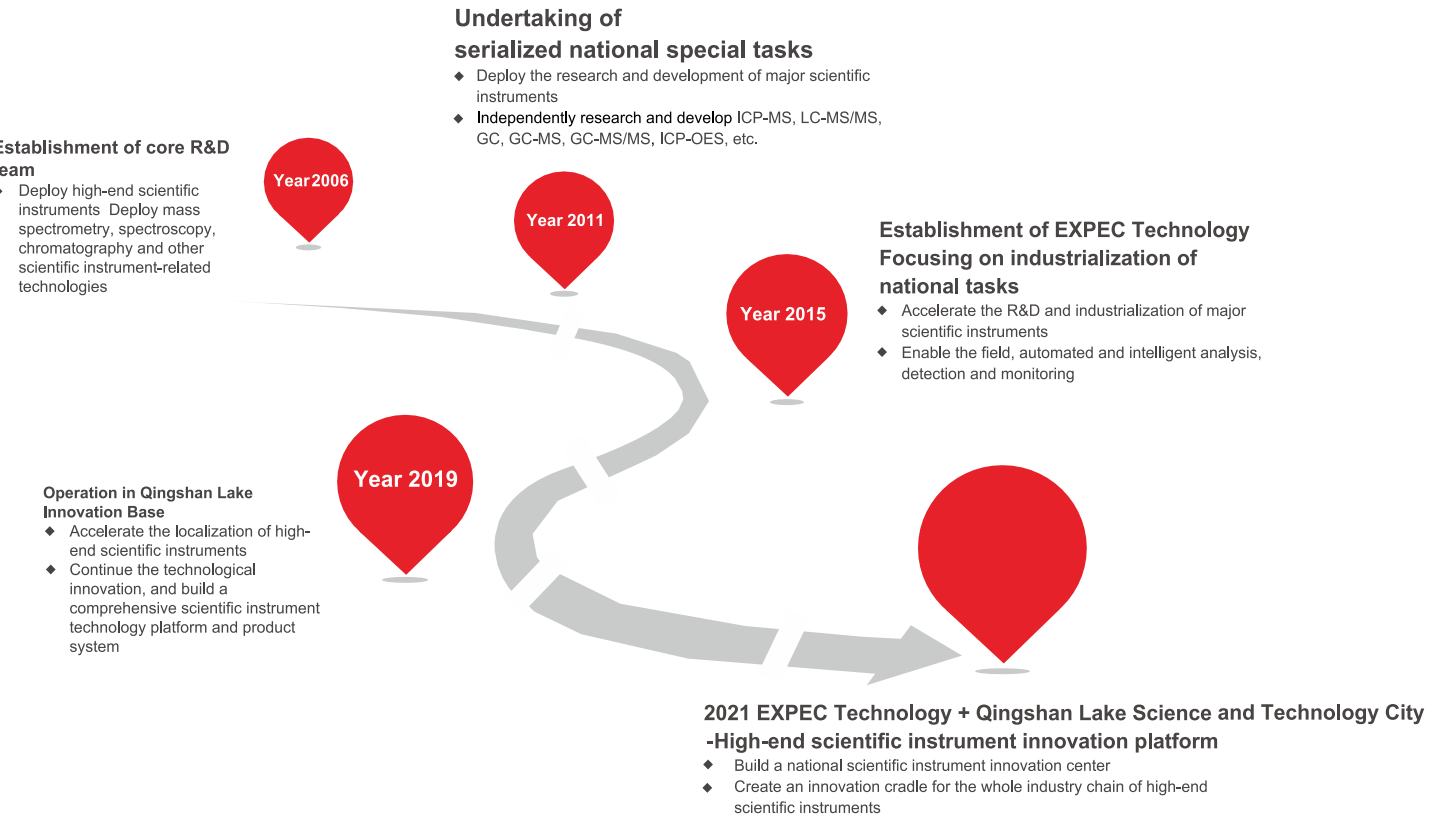
After investing heavily in the R&D of major scientific instruments for several years, our R&D team have completed a large number of projects under the National Key R&D Program and the formulation of national/industry standards, mastered the technologies for mass spectrum, chromatographic, spectrum, and physico-chemical analysis and detection, as well as technologies of pre-injection gas, liquid and solid processing, developed a series of industry-leading products for laboratory analysis, field analysis (portable, online, mobile) and automated analysis, and provided global customers with all-round, specialized and customized solutions in fields such as advanced industry, ecological environment, medical diagnosis, life science, food, drugs and emergency safety.

1200+ 60%+ 2.5 Billion+ 20%+

persons for research and development have master's and doctoral degrees in research and development cumulative expenses in research and development percent of revenue for investment on research and development

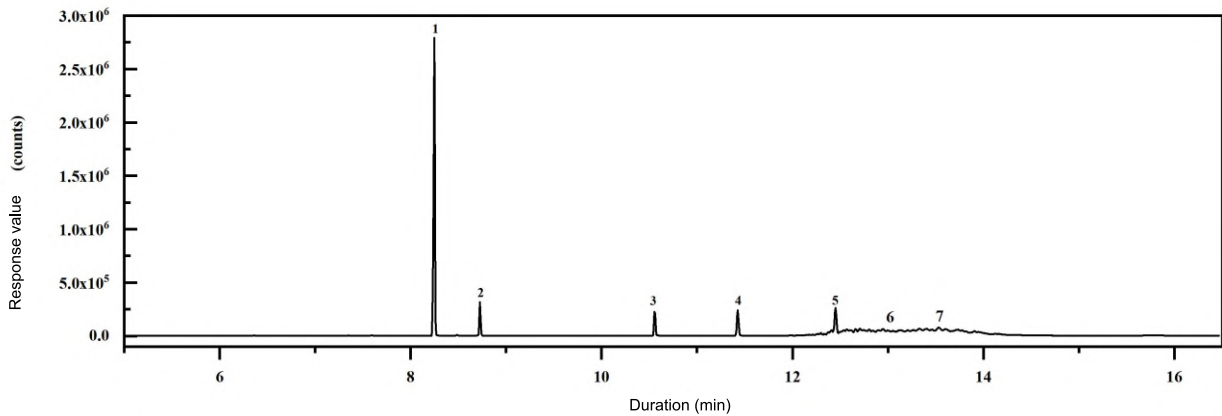
Development history of high-end scientific instrument business

Development history of high-end scientific instrument business



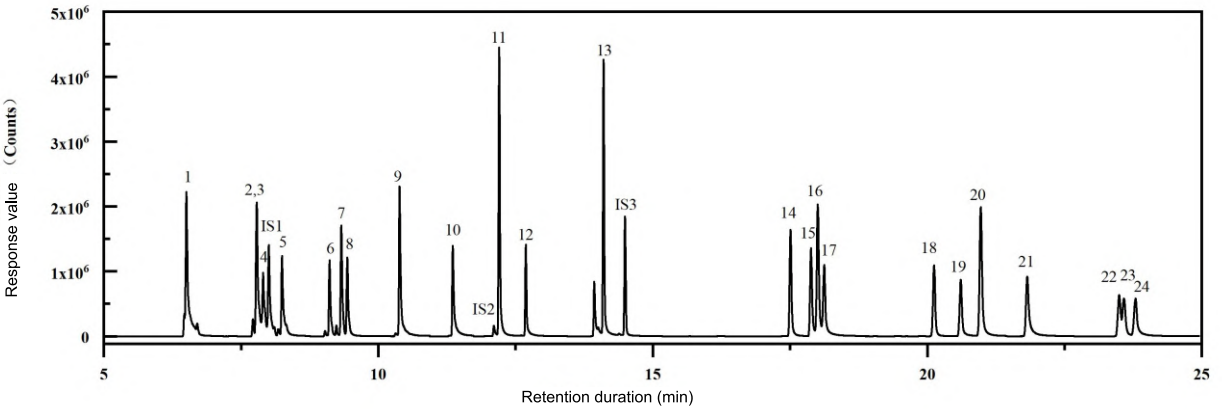
Determination of phthalates in electrical and electronic polymers

Reference standard: GB/T 39560 *Determination of Certain Substances in Electrical and Electronic Products*



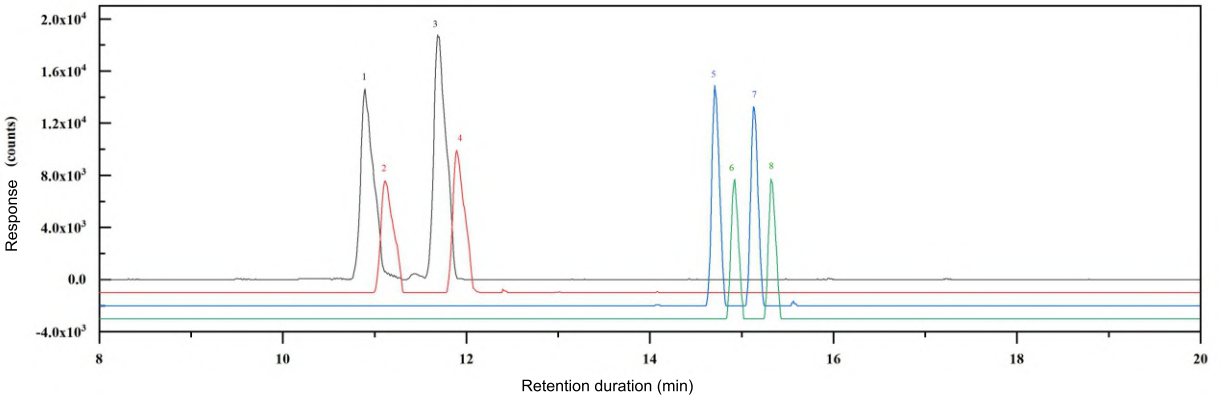
Determination of banned azo colourants in textiles

Reference standard: GB/T 17592-2011 *Textiles-Determination of the banned azo colourants*



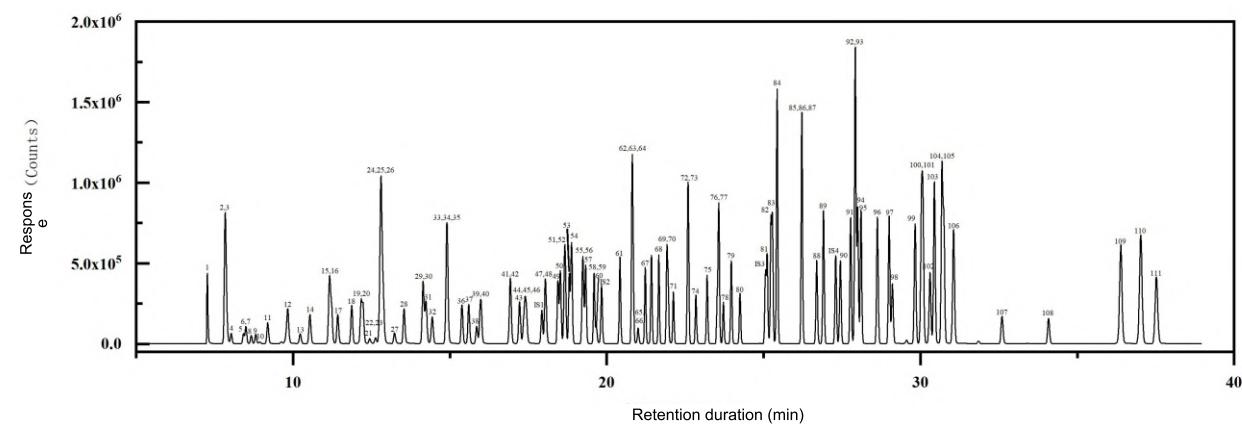
Determination of chloropropanol in food

Reference standard: GB 5009.191 *Determination of Chloropropanol and Its Fatty Acid Ester Content in Food*



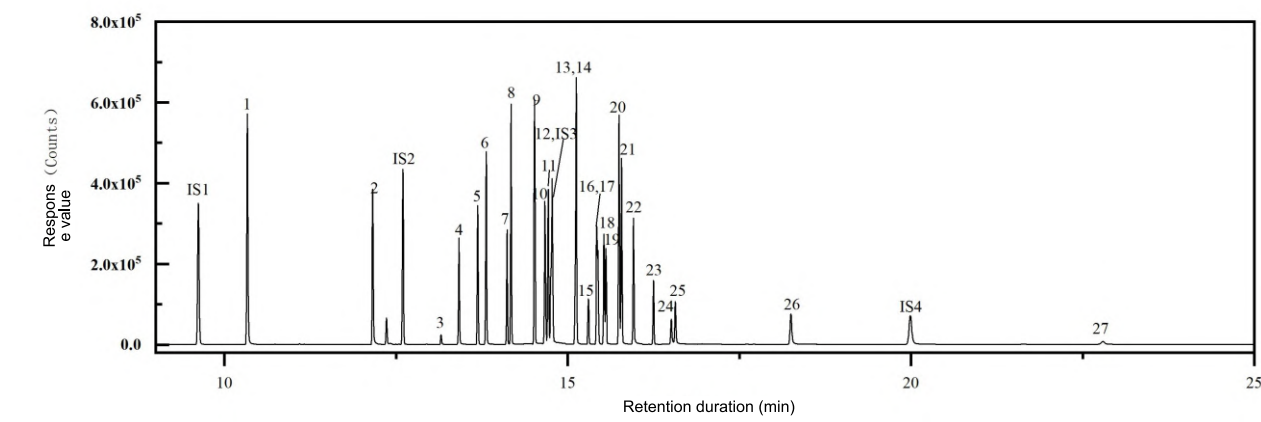
Determination of volatile organic compounds in ambient air

Reference standard: *Monitoring Plan for Volatile Organic Compounds in Ambient Air in Cities at Prefecture Level and Above in 2019*



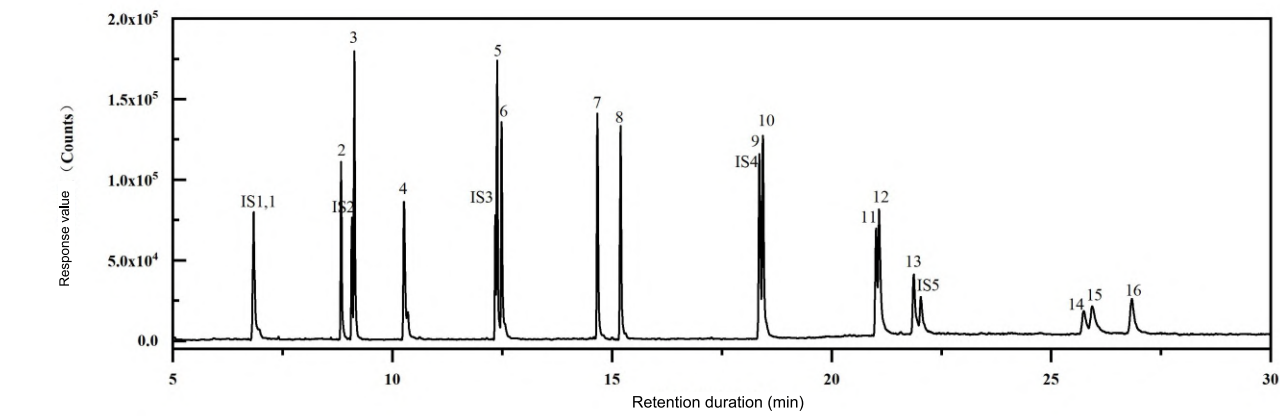
Determination of 28 organophosphorus pesticides in water

Reference standard: *HJ1189-2021 Water quality-Determination of 28 organophosphorus pesticides*



Determination of 16 polycyclic aromatic hydrocarbons in soil and sediment

Reference standard: *HJ 805-2016 Soil and sediment-Determination of polycyclic aromatic hydrocarbon by gas chromatography-mass spectrometry method*



Stable and efficient high-end analysis tool

EXPEC 3750 gas chromatograph-quadrupole mass spectrometer (GC-MS) is a new generation of comprehensive gas chromatograph-quadrupole mass spectrometer. This series of instruments is economical, durable and powerful, and will provide you with ultra-high sensitivity, simple and intelligent operation and durable reliability.

The core of the single quadrupole mass spectrometer is the ultra-highly inert material ion source and enhanced electron ionization technology, which are designed to give your GC-MS ultra-high sensitivity and long-time cleanliness. The plasma source cleaning technology pioneered in China enables the instrument to analyze a large number of dirty samples every day and maintain high performance after thousands of injections.

Multiple ion sources

- Universal ion sources EI and CI can be flexibly configured for applications
- High-sensitivity ion source SIP optimizes the transmission lens design, prompt the ion transmission efficiency, and greatly improves the sensitivity
- Inert metal materials reduce the adsorption of complex matrix and effectively prolong the instrument life



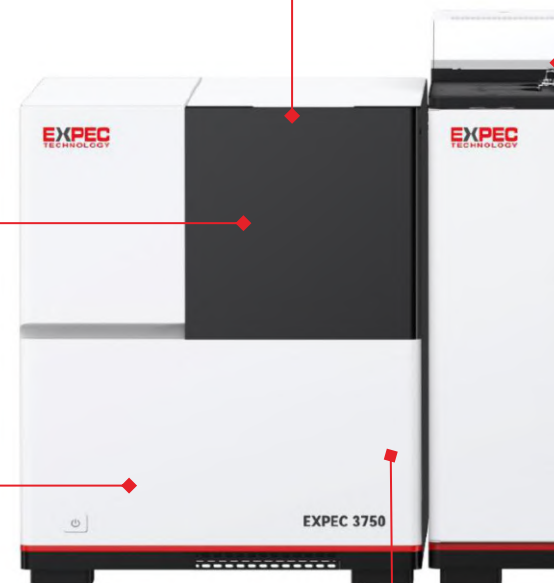
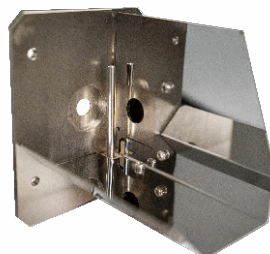
Self-developed high-precision analytical quadrupole

- All-metal main quadrupole with pre-quadrupole perfectly prevents pollutants from entering the quality analyzer, and keep the main quadrupole maintenance-free
- The outlet lens of the ion source is seamlessly connected with the pre-quadrupole to effectively shield the fringing field effect and ensure the quality inspection accuracy



Durable high-sensitivity detector

- The target ion flow passes through a triple off-axis trajectory before entering the electron multiplier, effectively shielding the neutral interference and reducing the baseline noise
- Highly durable electron multiplier effectively reduces the use cost of mass spectrometer



Various injection system configurations



EXPEC 225 Thermal Desorption Sampler

- Syringe-free design structure of injection system to reduce secondary sample pollution
- Precise electronic pressure control system for automatic pressure monitoring (EPC)
- Automatic monitoring and alarm of gas deficiency, gas leakage, blockage and other phenomena in gas circuit
- Low temperature cold trap structure design, with cooling temperature of -30°C , and full sample collection in adsorption tube



EXPEC 228 Pyrolysis Sampler

- Ceramic tube heating for pyrolysis, rapid temperature rise, good stability and reliability
- Staged temperature rise and high temperature control accuracy;
- Transmission line-free design to effectively avoid cold spots;
- Analysis duration for single sample $< 20\text{min}$, with high efficiency;



Pre 3900 Liquid Nitrogen Atmospheric Pre-concentrator

- Direct access of liquid nitrogen to cold trap for rapid cooling to -196°C , with liquid nitrogen consumption reduced by intelligent temperature control algorithm
- 11 standard injection positions with 3 additional 16-bit autosamplers to support up to 59 Summa canisters
- Quantitative loop/vacuum tank sampling, with injection volume of 1-1500 mL
- High-precision proportional valve combined with vacuum tank injection method to eliminate impact of sample matrix on injection volume



Pre 4000 Stirling Atmospheric Pre-concentrator

- First-stage cold trap for low-temperature water removal, second-stage cold trap with special packing for effectively removing CO_2 , O_2 and N_2 while capturing VOCs
- Combination of high-precision mass flowmeter and diaphragm vacuum pump for large sampling volume, without being affected by ambient temperature
- -180°C capillary tube used as third-stage cold trap. High-efficiency focusing at low temperature, and micro-flow desorption with empty tube
- System leakage detection with atmospheric pre-concentrator by means of pressure or vacuum

Various injection system configurations



EXPEC 215 Liquid Autosampler

- Simultaneous injection of two towers to double sample throughput
- Freely adjustable injection speed and injection volume, with syringe discrimination minimized by rapid sampler technology
- Standard injection, continuous injection, large volume injection and multi-layer injection mode
- Sample priority function, without stopping current sequence



EXPEC 218 3-in-1 Autosampler

- Three standard injection modes: headspace, liquid and SPME, with syringe holders automatically changed according to program settings
- New control concept of high-intelligence motor, with sample bottle automatically sensed by syringe to prevent syringe damage
- Collision sensing function in XYZ directions to prevent personnel misoperation
- Cycloidal mixing mode for rapid sample mixing without stirring rod (compared with magnetic stirring)



EXPEC 236 Full Automatic Headspace Sampler

- High sample throughput, with dual moving sample trays combined with overlapping heating for continuous processing of up to 111 samples
- Full-deactivated flow path treatment, low risk of cross-contamination, and high reproducibility
- 300°C high temperature design of full flow path, with strong detection capability and extremely high analytical sensitivity
- Built-in five-level vibration function to accelerate sample gas-liquid equilibrium and shorten analysis cycle



EXPEC 249PT Purge & Trap Sampler

- Deactivated flow path switching design, with low cross-contamination risk
- Physical water removal function to reduce impact of water vapor in sample and realize higher sensitivity
- Purge tube heating function to improve purging efficiency
- Physical defoaming function to reduce impact of foam on purging efficiency

➤ Ultra-stable liquid injection port

- Full electronic flow control is adopted with a self-diagnostic function and no need for manual soap leak detection, reducing the risk of system contamination
- Optional injection ports with permanent ultra-deactivated surface treatment are available, which makes it easy for users to deal with the detection of strong adsorption and corrosive samples



➤ Ultra-high-precision electronic pressure controller (EPC)

- The EPC core is made of ruby, and its excellent pressure control performance is consistent all day long
- The pressure control accuracy of the EPC can reach 0.001 psi



➤ Ultra-safe vacuum lock

- Abnormal power-off protector effectively avoids abnormal damage to core devices after vacuum backflow during power failure
- Vehicle-mounted mobile installation is supported, realizing rapid vacuum establishment after movement, and effectively shortening instrument preparation time



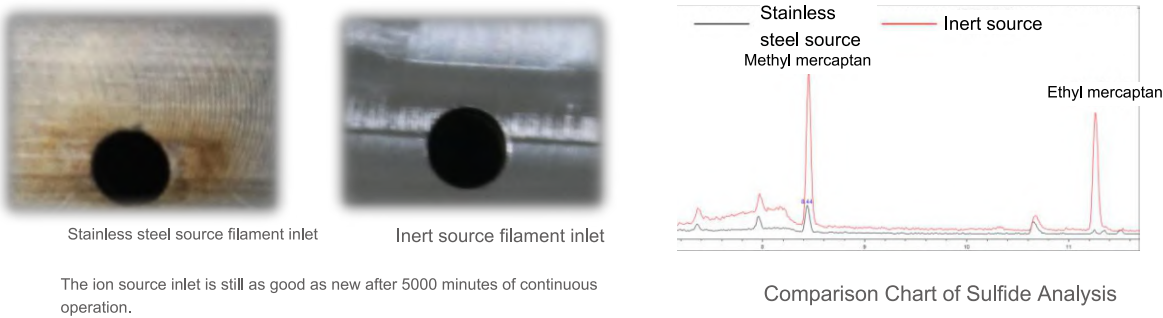
Technological innovation enables higher operating efficiency

EXPEC 3750 single quadrupole mass spectrometer is equipped with a new generation ion source system, covering all aspects of mass spectrometry detection needs of EI and CI laboratories. The whole series supports plasma cleaning technology and vacuum cutoff technology to help you increase sample throughput, improve analytical performance and expand business results. The system is designed for laboratories specializing in environmental, chemical, petrochemical, food, forensic, pharmaceutical, material testing and other applications.



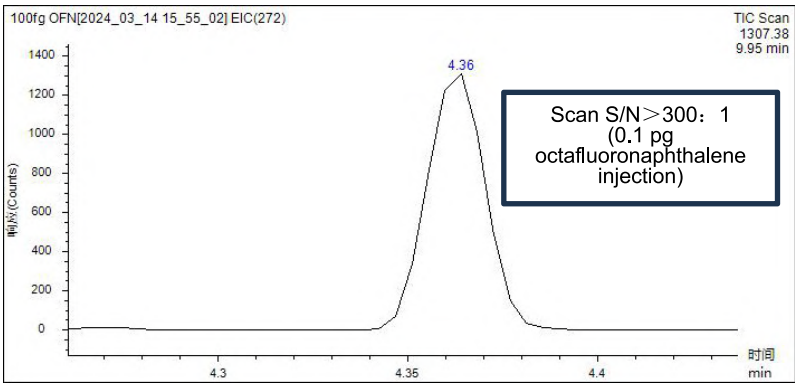
High-temperature inert alloy material withstands sample matrix interference

The EXPEC 3750 series ion source is made of inert alloy. The inert alloy material has strong corrosion resistance, high temperature resistance and oxidation resistance. Therefore, the anti-matrix pollution capacity of the ion source is greatly improved to ensure that the active substances are not adsorbed.



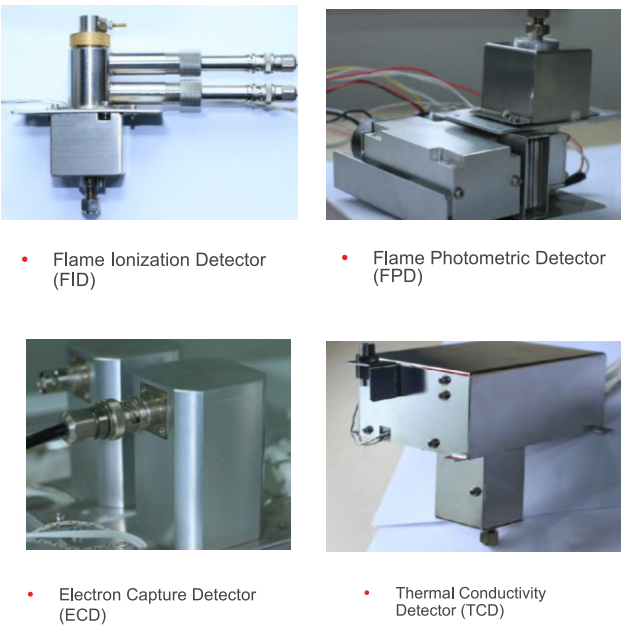
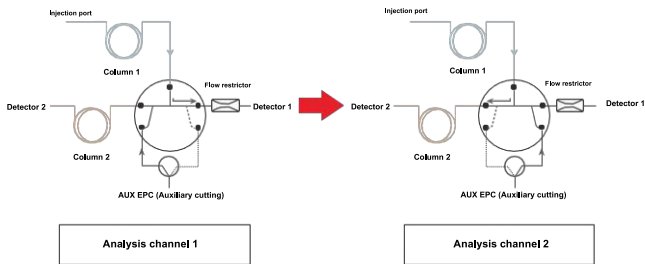
Enhanced ion source

EXPEC 3750 enhanced electron impact ion source has completely optimized the electron emission trajectory, which, coupled with an efficient ion transport lens, achieves the fg-level ultra-low sample concentration detection, helping to expand the lower detection capability for EI ion sources.



Various gas phase detectors expand multi-dimensional applications

The GC 2000 gas chromatography system is equipped with a mass spectrometry detector and supports various gas phase detectors. At the same time, it supports heart cutting and split flow path control systems, with flexible and changeable detector configuration to meet various needs of daily laboratory analysis.



Smart interactive experience is combined with classic style

Smart touch screen - infinite possibilities with a click

8-inch true color touch screen, with built-in Chinese and English bilingual interactive applications based on Android operating system. The smart screen can be operated as easily as a mobile phone, unlocking limitless possibilities for human-computer interaction.



Classic style without changing software usage habits

The software interface of the EXPEC 3750 gas chromatograph-mass spectrometer workstation inherits the user's consistent usage habits for decades. Users do not need to re-learn the system software to obtain the desired results.



Data statistics - powerful data analysis software

The data analysis software of EXPEC 3750 can not only process the analysis results of multiple samples in batches, but also perform the statistical operations among different samples and graphically display the operation results. There is no need for Excel secondary processing, and the differences and change trends between samples are instantly accessible and clearly visible with a single click.



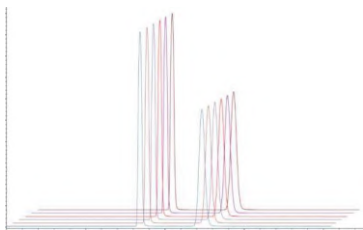
Stability, efficiency and flexibility empower future gas chromatography laboratories

In addition to achieving excellent analytical capabilities, future chemical analysis laboratories will pursue stable data quality, efficient human-machine collaboration, and flexible expansion space, whether for scientific research or daily testing.

The GC 2000 gas chromatography system is designed for this purpose. With solid hardware materials, intelligent software interaction and rich supporting combinations, GC 2000 can easily meet the detection needs in the fields of food safety, environmental monitoring, life and health, chemical energy, emerging materials, criminal investigation and forensic medicine, and provide comprehensive solutions for future gas chromatography laboratories.



High-precision electronic gas circuit control ensures accurate and consistent analysis results



Repeatability Performance with RSD Less than 1% at Ultra-high Control Accuracy of 0.001 psi



The EPC core component of GC 2000 is made of ruby. The hard texture of ruby makes the gas path less susceptible to environmental factors.

Therefore, GC 2000 has ultra-high precision electronic gas path control capability of up to 0.001 psi, high stability and good repeatability, ensuring that laboratory testing obtains stable data day after day.

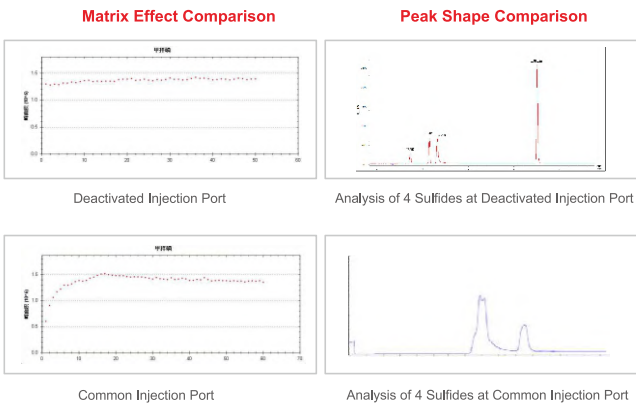
Ultra-deactivated surface treatment technology eliminates matrix effect and invalid peak shape

When analyzing complex matrix samples, especially compounds with strong activity in complex matrices, the varying degree of matrix effect has a great impact on the reliability of quantitative results.

GC 2000 applies the cutting-edge ultra-deactivated surface treatment technology, which greatly shields the active sites on the flow path surface and avoids the residues in the matrix or target component flow path. This makes the response of the target component consistent in the matrix sample and pure solvent, eliminating the problems caused by the matrix effect.

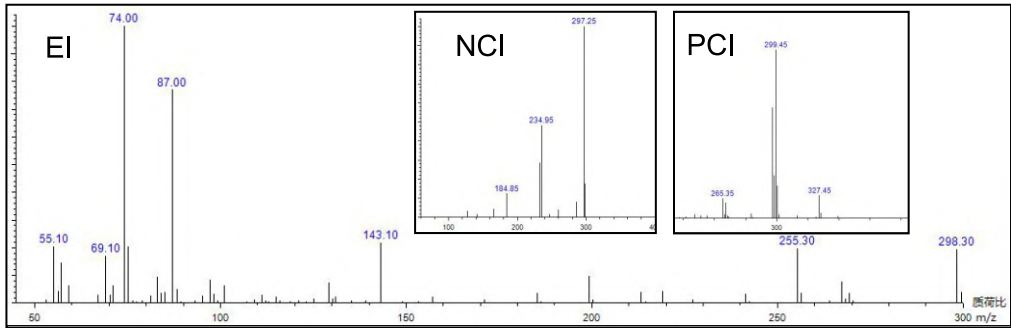
In chemical analysis laboratories, it is desirable to obtain perfectly separated, symmetrical and sharp peak shapes. However, the peak tailing or peak tailing interfere with the separation effect. Especially for components with heteroatoms in the structure, the active groups composed of nitrogen, oxygen, phosphorus, sulfur, etc. on the molecule will interact with the active sites in the flow path to create an adsorption effect and change the peak shape.

GC 2000 ultra-deactivated treatment technology effectively treats the active sites on the sample flow path surface, making it impossible for the active groups to interact with the flow path surface, and effectively improving the peak shape and separation. GC 2000 can achieve symmetrical and sharp chromatographic peaks and excellent chromatographic separation effects when used for the analysis of active sulfides.



Chemical ion source

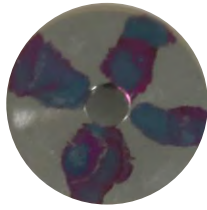
EXPEC 3750 is equipped with a chemical ionization source, which can realize the positive chemical ionization (PCI) method for effectively confirming molecular weight by soft ionization and the negative chemical ionization (NCI) method for compounds with strong electron affinity functional groups. Regardless of the chemical ionization method, MS tuning is fully automated. Reactant gases such as methane, isobutane, and ammonia can be used.



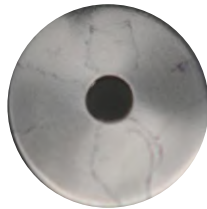
Ionization Diagram of Methyl Stearate from Different Ion Sources

Intelligent plasma source cleaning

Matrix accumulation inevitably occurs in routine analysis. In the past, you had to remove the ion source and clean the lens before reassembly and recalibration. Smart plasma cleaning technology avoids these problems. It uses tightly controlled gas flow to effortlessly remove even the most stubborn deposits. Therefore, the manual cleaning frequency can be reduced from once every 2 weeks to once every 3–6 months.



Removed lens (before cleaning)



Removed lens (after cleaning)

Full open maintenance of mass analyzer

EXPEC 3750 mass analyzer supports quick opening of the mass analyzer cover without tools, so that routine maintenance of the ion source and detector can be completed quickly and efficiently without disassembling the chromatographic column.

