

MS-3901

Liquid Mass Spectrometry System



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

MS-3901 with Elclassical HPLC-MS/MS is a real Triple Quadrupole Mass Spectrometer, combines in the fields of optics, military industry, materials and so on, and after three years of research and development, it has realized the three major phases of Triple Quadrupole Mass Spectrometer from technological innovation, break throughs in the core components and industrialization of the whole machine, and it has completed the manufacture of the key core components of the highefficiency ion source, the Triple Quadrupole, and the high-voltage RF power supply, and so on Vertical MS- 3901 is characterized by high sensitivity, high stability and high cost-effectiveness, with the advantages of strong quantitative ability, high sensitivity and multiple reaction modes, which can be widely used in the fields of medical research, biopharmaceuticals, food safety and environmental testing.

Product Characteristics:

- Superior Quantitative Capability
- High quality detection upper limit (including 19~2800Da)
- Rare metal quadrupole for optimum quality shaft stabilization
- High sensitivity, multiple scanning modes, high throughput analysis capability
- Equipped with independently heated ESI/APCI dual ion source for a variety of measurement methods
- The software is easy to operate, with a friendly interface that can be customized to meet your needs
- Flexible customization services for complete machine solutions

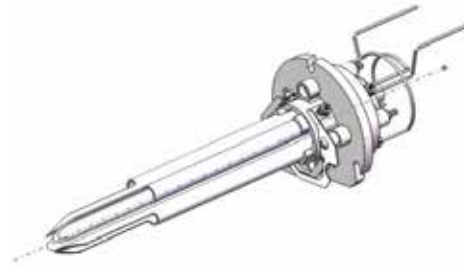
Ion Source System:

- Designed with heated auxiliary gas, it can be heated up to 650°C or above in 30 seconds.
- Flow rate range of 1 μ L/min ~ 3mL/min, no shunt and no loss of sensitivity.
- Plug-and-play design, no additional tools required for replacement, no vacuum removal required.
- With exhaust gas venting device to prevent gas backflow in the closed ion source chamber.



Ion Transport Systems

- Conical hole design structure effectively prevents sample decomposition and clogging caused by thermal cracking and condensation.
- Pre-quadrupole is used as ion focusing guide, which is highly resistant to contamination.
- Ion Source Interfaces with Blowback Technology and Removable Purge Stop Cone



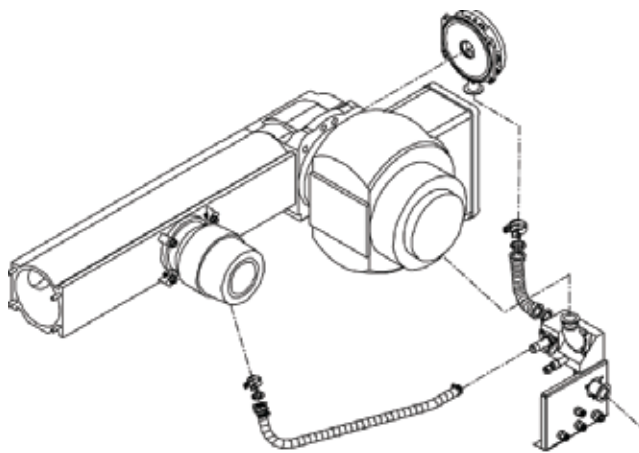
Quality Analysis System:

- The use of high-precision pure molybdenum material combined with the surface of the gold-plating process cylindrical quadrupole, to ensure optimal stability of the quality axis.
- Q1 Quadrupole and Q3 Quadrupole with pre-pole to better eliminate fringe field effects and realize ion focusing and antipollution function.
- Self-developed adhesive process collision pool, eliminating the “memory effect” and “cross-contamination”, long service life.



Vacuum System:

- Breakthroughs in vacuum cavity materials, precision machining and other technologies
- Highly stable multi-stage gradient vacuum due to turbomolecular pumps and reliable vacuum interface seal design
- Removable ion source under vacuum to ensure the long-term stability of the instrument and the experimental efficiency.
- No need for additional water cooling, with automatic power-off protection function.



Application:

- Research institutes, medical institutions, universities, clinical testing centers.
- For the analysis of substances in complex biological samples such as serum, plasma, urine, tissue fluids, cells, etc. for the identification and validation of small molecule metabolites, the qualitative and quantitative analysis of proteins, and the precise measurement of peptides, hormones, amino acids, vitamins and other substances.
- Pharmaceutical companies, CROs and other organizations that conduct drug discovery and drug evaluation.
- Drug evaluation: formulation prescription process, quality study, stability investigation, drug efficacy evaluation, bioequivalence evaluation, etc
- Research and development of traditional medicine: detection of pesticide residues, qualitative and quantitative analysis of traditional medicine, quality control of traditional medicine preparations, analysis of metabolites in traditional medicine, and determination of the content of harmful substances in traditional medicine.
- Food processing enterprises, food and agricultural quality supervision and inspection organizations at all levels, import and export inspection and quarantine bureaus, etc.
- Food quality ingredients, pesticide and veterinary drug residues, food additives, microorganisms and other testing items involved in mass spectrometry, and a number of national standards provide for liquid-liquid mass spectrometry as a standard testing method.
- Determination of phenoxy-carboxylic acid herbicides in water, determination of carbamate pesticides in water, determination of carbamate pesticides in solid wastes, determination of oxolinic acid, methamidophos, acephate, phoxim and determination of antibiotics in water and soil.

- Determination of 17 aniline compounds in water quality.
- Determination of 4 nitrophenolic compounds in water.
- Determination of anilines and benzidine compounds in soil and sediment.
- Determination of 18 Per- and Polyfluoroalkyl Compounds (PFASs) in Soil.



Life Science Applications



Pharmaceutical Applications



Food Safety Applications



Pesticide and Veterinary
Drug Contaminant Testing

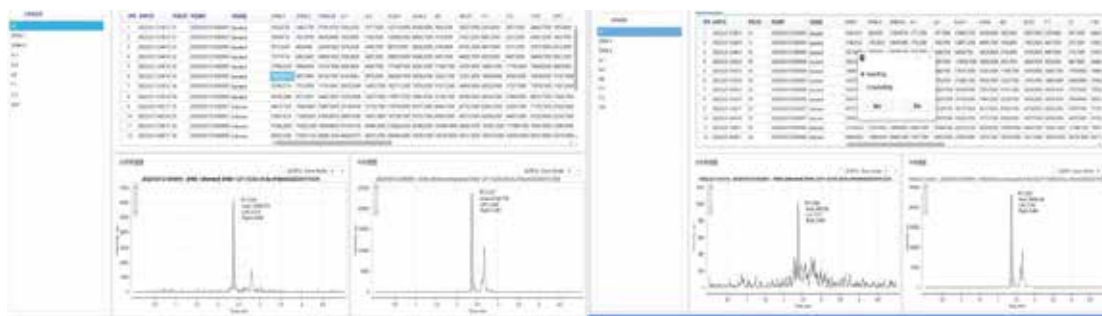


Detection of Other Industrial
Organic Pollutants

Software Platform: Modular Design, Simplicity and Clarity

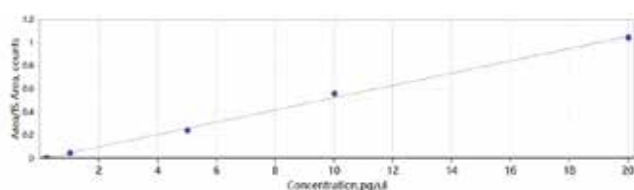
- The Data Acquisition Module is automated, making method creation and batch data acquisition easier.
- Allows multi-window viewing, spectral overlay and signal-to-noise calculations.
- Data Processing Software quickly loads data from collected data files, making it easy to handle high-throughput sample analysis.
- Troubleshooting software allows you to view set and actual values of instrument parameters to quickly diagnose and troubleshoot hardware problems.
- Total Ion Charts (TICs) and Extracted Ion Charts (XICs) are available for data analysis and evaluation.



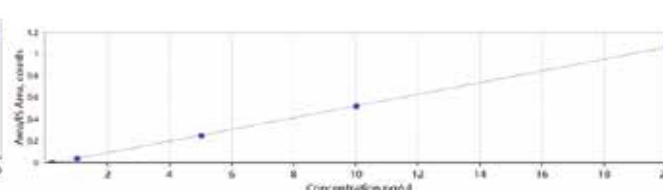


Application Case: Determination of Hexabromocyclododecane

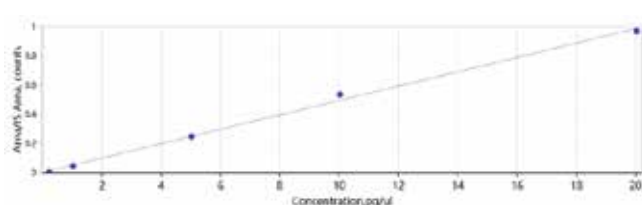
Detect the content of α -HBCD, β -HBCD and γ -HBCD in water samples.



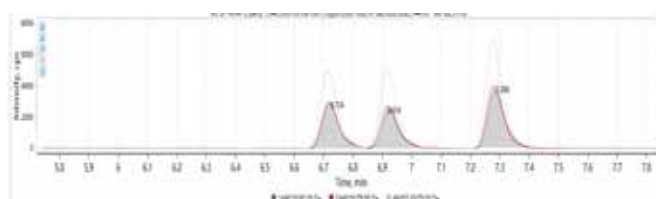
α -HBCD Working Curve



β -HBCD Working Curve



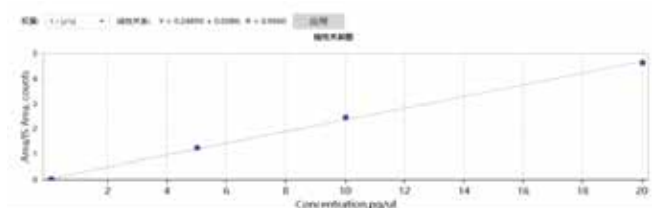
γ -HBCD Working Curve



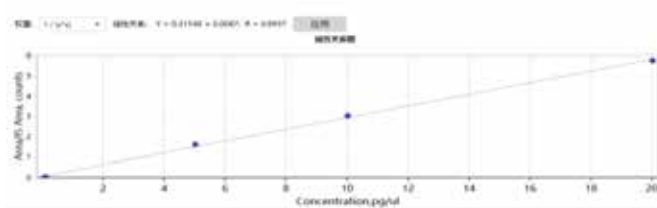
Characteristic Ion Mass Chromatogram
of Standard Solutions

Concentration ($\mu\text{g/L}$)	α -HBCD		β -HBCD		γ -HBCD	
	Concentration ($\mu\text{g/L}$)	Retention Time (min)	Concentration ($\mu\text{g/L}$)	Retention Time (min)	Concentration ($\mu\text{g/L}$)	Retention Time (min)
0.200	0.330	6.806	0.281	7.001	0.268	7.380
	0.344	6.806	0.317	7.032	0.267	7.339
	0.349	6.796	0.315	7.011	0.272	7.360
	0.337	6.816	0.299	7.032	0.260	7.360
	0.357	6.837	0.292	7.011	0.273	7.360
	0.357	6.806	0.295	7.021	0.273	7.370
RSD	3.15%	0.21%	4.63%	0.18%	1.87%	0.19%

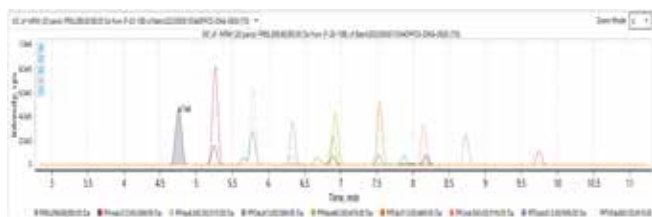
Application Case: Determination of PFCs



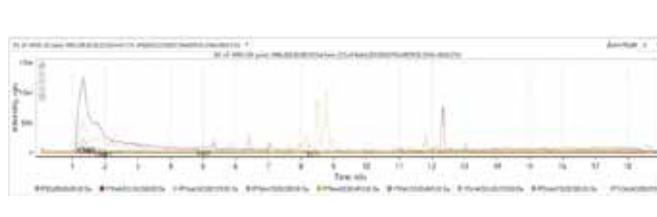
PFOA Working Curve



PFNA Working Curve

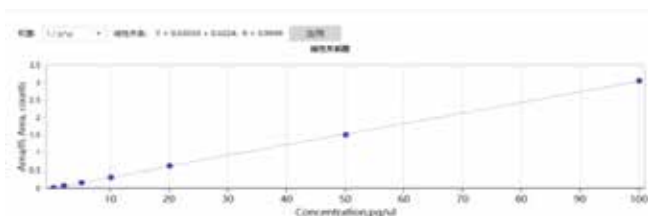


Characteristic Ion Chromatogram of PFCs
In Surface Water

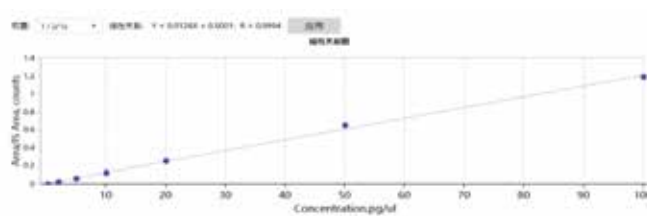


Characteristic Ion Chromatogram of PFCs
In Sediment

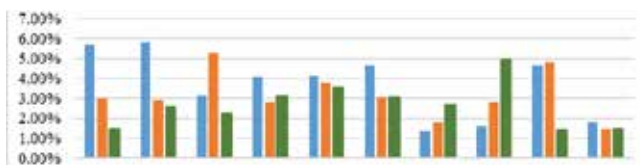
Determination of Bisphenol A and Alkylphenols:



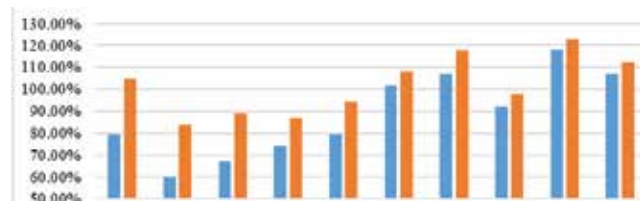
Bisphenol A Working Curve



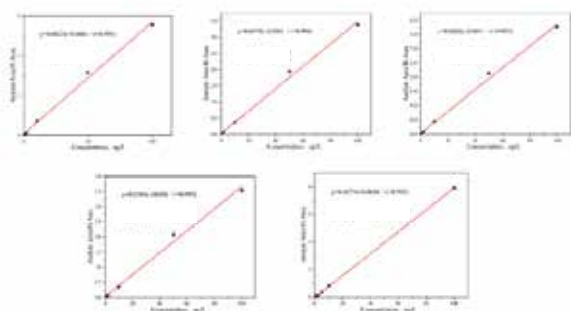
4-N-Octylphenol Working Curve



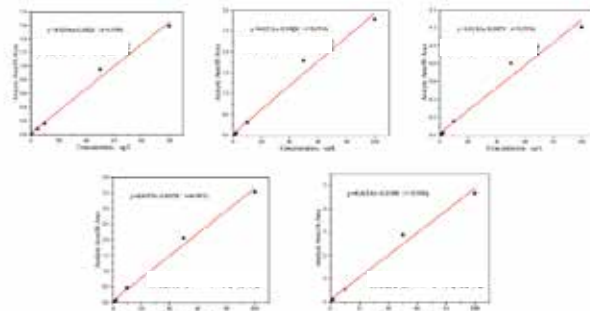
Precision Test



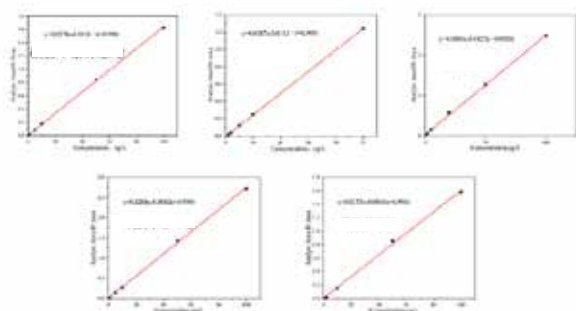
Accuracy Test (Recovery Rate)



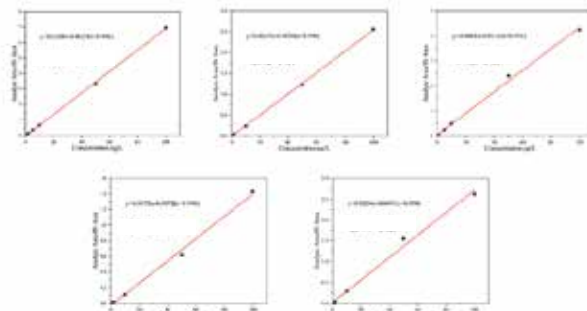
Standard Curve
(Sulfacetamide, Sulfapyridine, Sulfadiazine,
Sulfamerazine, Sulfamethazine)



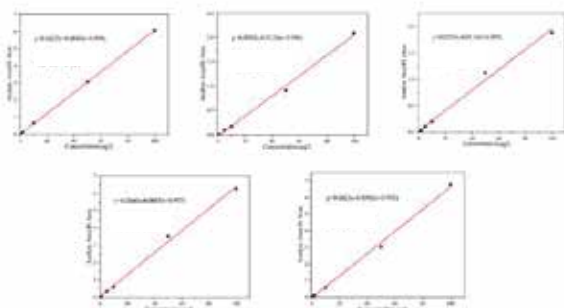
Standard Curve
(Sulfamonomethoxine, Sulfameter,
Sulfamethoxazole, Sulfamethazine, Sulfadoxine)



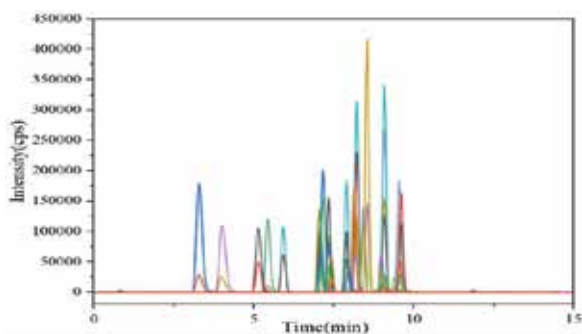
Standard Curve
(Sulfamethoxazole, Sulfisoxazole, Sulfathiazole,
Sulfamethizole, Sulfaphenazole)



Standard Curve
(Sulfachloropyridazine, Spiramycin, Roxithromycin,
Azithromycin, Tilmicosin)



Standard Curve
(Oleandomycin Phosphate, Tylosin, Sineptina
Clarithromycin, Josamycin)



MRM Chromatogram of Antibiotic

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.

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Flash
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Spectrophotometer



Liquid Particle
Counter



Optical Emission
Spectrophotometer



STA



Semi Auto Bio
Chemistry Analyzer



LCMS



GCMS



XRD



Total Organic
Carbon 3800



Fully Automated
CLIA



NOVA-2100
Chemistry Analyzer



PCR/Gradient PCR/
RTPCR



TOC
Analyzer



Laser Particle
Size Analyzer



Ion Chromatograph



Water purification
system

Regulatory compliances



Corporate Social Responsibility

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



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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