

LC-MS APPLICATIONS

FOOD & BEVERAGE | ENVIRONMENTAL | R&D | PHARMA & BIOPHARMA

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FOOD & BEVERAGE

Food safety • Quality control • Contaminant analysis



LC–MS solutions support food laboratories in identifying and quantifying a broad range of chemical compounds, helping protect consumers and support product quality.

Food testing laboratories face growing demands from emerging contaminants, stricter regulations, trade requirements and the need to protect brand reputation. Integrated workflows combining sample preparation, chromatography, mass spectrometry and data-management software can help laboratories improve productivity, manage analytical costs and support compliance.

KEY APPLICATIONS & ASSOCIATED INSTRUMENTS



Food Contaminants & Residues

Support sensitive, accurate and reproducible testing of contaminants and residues to help assess food safety.



Food & Beverage Quality Control

Support product-quality testing, laboratory productivity and regulatory compliance.



Extractables & Leachables

Identify and quantify extractables, leachables and non-intentionally added substances in relevant materials and packaging.



Cannabis & Hemp Testing

Support quality and safety testing where applicable, including testing aligned with relevant regulatory requirements.

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ENVIRONMENTAL

Emerging contaminants • Water quality • Residue monitoring



Chromatography and mass spectrometry help environmental laboratories detect and measure trace-level compounds in complex samples.

Industrial activity, agricultural practices and municipal waste can affect environmental and human health. Environmental testing workflows may combine sample preparation, LC and GC chromatography, mass spectrometry, standards and software to address trace detection, sample throughput, complex matrices, data management and compliance needs.

KEY APPLICATIONS & ASSOCIATED INSTRUMENTS



Dioxins & Furans

Sensitive measurement of dioxins and furans in relevant food, feed and environmental matrices.



PFAS Analysis

Analytical workflows can bring together standards, reagents, columns and LC–MS systems for PFAS analysis.



Pesticides & Herbicides

Screen and quantify pesticide residues in agricultural products, drinking water and surface water.

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RESEARCH & DEVELOPMENT

Advanced workflows • Selectivity • Analytical innovation



LC-MS systems, software and informatics can help research laboratories strengthen analytical workflows and investigate complex samples.

Research laboratories need reliable accuracy and selectivity, while cross-reactivity, data bias, reagent availability and manual sample preparation can slow progress. Integrated analytical technologies and scientific expertise can help streamline workflows and support advanced research.

KEY APPLICATIONS & ASSOCIATED INSTRUMENTS



Clinical Toxicology

Detect and measure potential toxins, intoxicating or prohibited substances, and medicines in biological samples.



In Vitro Diagnostics

Support clinical diagnostic workflows, improve result specificity and help develop new IVD tests.



2D & Parallel Column Regeneration

Support high-throughput, flexible and efficient clinical research workflows.

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PHARMA & BIOPHARMA

Molecule characterization • Drug development • Bioprocessing



LC-MS systems, software and informatics support analytical workflows across pharmaceutical and biopharmaceutical development.

As demand for new therapies grows, pharmaceutical laboratories must characterize increasingly complex molecules and adapt to evolving regulatory expectations. Solutions spanning sample preparation, separation science, standards and reagents, liquid chromatography, mass spectrometry and laboratory information management can help address analytical challenges, improve efficiency and support compliance.

KEY APPLICATIONS & ASSOCIATED INSTRUMENTS



Cell & Gene Therapies

Support biomolecular separation, mass analysis and biophysical characterization during product development and commercialization.



Protein Therapies

Characterize proteins and peptides, support routine LC analysis and monitor bioprocesses.



Small Molecule Therapies

Support medicinal chemistry, bioanalysis, DMPK, method development, impurity analysis and quality control.



Bioprocessing

Process Analytical Technology (PAT) can support monitoring of upstream and downstream bioprocessing.

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