

Intelligence That Drives Performance

Agilent GC/MS poster compendium for ASMS

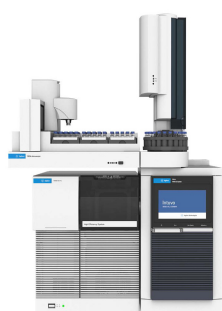


Overview

At ASMS, Agilent continued to advance the state of the art in GC/MS, delivering intelligence-driven performance. Our mission is more than simplifying lab operations. We provide solutions that enhance performance, streamline workflows, and provide powerful data insights—opening doors to new research frontiers.



Agilent 5977C GC/MSD



Agilent 7000E GC/TQ



Agilent 7010D GC/TQ



Agilent 7250 GC/Q-TOF

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Energy and chemicals

In the energy and chemical sectors, precise testing is essential to address environmental and safety challenges, as well as ensure product quality. Agilent GC/MS systems provide the robust performance and high sensitivity required for complex analyses, such as identifying contaminants like extractables and leachables, even in challenging matrices—ensuring compliance and safety. With a comprehensive portfolio that includes advanced solutions like ultra-low bleed columns, seamless method translation, and complementary analytical techniques, Agilent GC/MS solutions empower laboratories to meet stringent regulatory requirements and drive innovation.

Optimizing the Efficiency and Productivity of GC/MS Workflows to Improve Laboratory Sustainability

Labs with GC and GC/MS systems have unique sustainability challenges due to the resource-intensive nature of these instruments consuming large amounts of gas and energy while also generating hazardous waste products.

Analysis of Phthalates Using GC/MS with Hydrogen Carrier Gas: The Importance of Reducing Interferences and Contamination

A single quadrupole GC/MS method for the analysis of 19 phthalates using hydrogen carrier gas and an EI source providing excellent peak shape, resolution, sensitivity, and a 13 minuet run time.

Environmental



Environmental testing is vital for safeguarding our planet, but it is analytically difficult due to the need to detect trace contaminants and maintain regulatory compliance in an ever-evolving landscape. Agilent GC/MS systems offer robust, sensitive, and reliable analyses to meet these needs both now and in the future. From automated workflows that enhance productivity and reduce chemical use, to high-resolution methodologies for complex samples, and the use of more sustainable resources like hydrogen carrier gas, innovative solutions from Agilent meet the stringent demands of environmental testing labs. Ensure accurate and efficient testing while also reducing the environmental footprint of analytical processes.

Automated Sample Preparation using PAL3 RTC System for EPA 8270E Semivolatile Organic Analysis by GC/TQ

This novel automated workflow analyzes semivolatile organic compounds using an Agilent 7000 series GC/TQ and PAL3 RTC system, enhancing lab productivity, reducing chemical use, and meeting EPA 8270E standards.

Automated Sample Preparation and Analysis of OCPs in Drinking Water

Automation embedded within Agilent MassHunter simplifies sample preparation, requiring minimal analyst interaction and no additional software, while achieving excellent sensitivity for organochloride pesticides ($< 0.01 \mu\text{g/L}$).

Fast Analysis of 140 Environmental Compounds by GC/MS/MS

Individual GC-ECD methods for pesticides, PAHs, and PCBs are converted to a single GC/MS/MS method, saving time (6 hours down to 21 minutes) and increasing confidence in hits without impacting quantification.

Analysis of PFAS and Other Environmental Contaminants in Soil and Oat Plants Using High Resolution GC/MS

Targeted and nontargeted GC/Q-TOF methodologies are used to screen soil and plant extracts for PFAS, PCB, PBDE, PAH, pesticides, and flame retardants to better understand the source and transport of these contaminants.

Optimized GC/MS/MS Analysis of Semi-volatile Organic Compounds (sVOCs) Concurrent with Organochlorine Pesticides Using Hydrogen Carrier Gas

Using MRM in GC/TQ, increases sensitivity allowing for smaller sample extraction volumes and reducing costs for solvents, sample preparation, and waste disposal.

Comparative Analysis of Air Sampling Strategies for VOC Monitoring Using TD-GCMS Along with Chemometrics Study to Enhance Understanding of Complex Samples

The benefits of each sampling technique and their effectiveness in different locations, highlighting the importance of comprehensive air quality assessments.

Environmental

(continued)

New Pollutant Screening of Environmental Samples Using High-Resolution GC/Q-TOF and Accurate Mass Spectral Library of Emerging Environmental Pollutants

Qualitative and semi-quantitative analysis of complex GC/Q-TOF sample data by using high-resolution, accurate-mass GC/Q-TOF, an accurate mass spectral library of environmental pollutants specifically created for emerging pollutant screening, and analytical software with a screening process platform.

Beyond the Ion Source: Optimizing GC/MS Sensitivity with Capillary Chromatography

Evolutions of ionization sources have allowed to push the limits of detection in GC/MS down to attogram levels with the Agilent 7010D triple quadrupole GC/MS system.

Improved Determination of Polychlorinated Biphenyl Compounds by US EPA Method 1628

By using a column better suited for PCB congener separation and hydrogen as the carrier gas, superior separation can be achieved in under 20 minutes, resolving previously co-eluting analytes.

Optimizing Hydrogen Carrier Gas on GC/MS Using the HydroInert EI Source and 5Q Columns

Investigate how the 5Q series of columns impact the performance and durability of the HydroInert source tune, involving cycling through 10,000 oven temperature ramps without any injections to assess the effects of column bleed from the 5Q phase.

Detection of VOCs by Agilent 8697 Headspace with 7010D GC/MS/MS Using Hydrogen Carrier Gas

With a GC/TQ as a detector, we can acquire in dMRM mode which enables lower detection levels by minimizing interference from co-eluting compounds.

Two Methods to Perform the New US EPA Method 1628 with GC/MSD: Traditional Helium Carrier Gas and Hydrogen Carrier Gas

Agilent MassHunter Method Translator easily converts EPA method 1628 from helium to hydrogen carrier gas, meeting EPA method guidelines and achieving single digit ppb level detection for polychlorinated biphenyls.

Forensic toxicology

Identifying drugs, chemicals, and unknown substances in legal investigations requires the utmost accuracy with trace-level detection. Agilent GC/MS systems provide superior sensitivity, precision, and reliability. With a comprehensive GC/MS portfolio, including custom and curated MRM databases, Agilent streamlines workflow setup and ensures accurate quantitation of toxicants, empowering forensic labs to meet their analytical needs with confidence.

A Triple Quadrupole GC/MS MRM Database for Forensic and Toxicological Workflows

An MRM database of 175 toxicologically relevant compounds is created to simplify method development to screen for and quantify toxicants at trace levels as demonstrated with real-world samples.



Food and beverage

Ensuring food safety and quality is increasingly complicated due to complex matrices and stringent regulations. Agilent GC/MS solutions deliver robust, sensitive, and selective detection of low-level contaminants like pesticides in complex food samples, even over extended periods. With advanced offerings such as the high efficiency source (HES) and QuEChERS sample preparation, Agilent GC/MS solutions deliver reliable, high-performance analyses, ensuring consumer safety and product integrity.

Brewing Excellence: Quantitating Over 200 Pesticides in Black Tea

A sensitive, robust GC/MS/MS method for 246 pesticides provides excellent LOQs, dynamic range, and RSDs, while proper sample preparation and instrument intelligence features ensure steady operation for 17 days (> 800 injections).

Enhanced Longevity and Revolutionized Robustness for Sensitive Detection of 190 Pesticides over 800 Injections with Novel HES 2.0 Source

The high efficiency source (HES) combined with QuEChERS sample cleanup contribute to a robust, reliable workflow for the analysis of pesticides in food that is capable of > 800 injections while maintaining high sensitivity.

Analysis of Allergens in Fragrance Samples Using a Comprehensive GCxGC in Combination with a High-Resolution Mass Spectrometry

A power of a comprehensive GCxGC approach combined with high resolution MS for identification and quantitative analysis of 64 allergens in fragrances with added confidence in compound identification provided by accurate mass.

Fully Automated Workflow for Volatile PFAS Analysis in Food Contact Materials Using GC-Triple Quadrupole

Presenting a robust and fully automated method using the PAL3 platform with GC/TQ for quantifying more than 30 volatile PFAS in FCMs, and minimizing human error, improving reliability and reproducibility for routine analysis and safety assessments.

Analysis of Essential Oils Using Comprehensive GCxGC with a Reverse Flow Modulator Combined with High Resolution GC/MS

A powerful, comprehensive workflow using GCxGC coupled to GC/Q-TOF identifies essential oil components and compares complex essential oil data.

Faster Qualitative Analysis of Essential Oils Using GC/MS with Hydrogen Carrier Gas and a Hydrogen Optimized EI Source

Method conversion from helium to hydrogen carrier gas is easy with the Agilent method translation calculator, while the Agilent HydroInert source preserves GC/MSD performance and spectral fidelity with hydrogen.

Multiple Tools for Demanding Needs: Trace Detection of Organochlorine Pesticides by Agilent 7000E and 7010 GC/MS/MS

GC/TQ methods achieve groundbreaking ppt-level sensitivity for OCPs and offer additional workflow optimization when larger dynamic ranges or ultratrace level detection are needed.

Pharmaceutical



Ensuring drug safety and efficacy in the pharmaceutical industry is challenging due to complex molecules and stringent regulations. Agilent GC/MS systems offer high sensitivity and robust performance, even with hydrogen carrier gas. Keep your pharmaceutical testing lab running and profitable despite recent helium supply chain shortages, without compromising quality. Agilent GC/MS solutions maintain spectral quality and repeatability, making them indispensable for accurate impurity analysis and overcoming common analytical hurdles.

Analyzing Nitrosamines with Hydrogen Carrier Gas: GC/MS/MS Analysis of Nitrosamines in Sartan Drugs

Hydrogen carrier gas with the Agilent HydroInert source maintains spectral quality, recovery, and repeatability at 30 ppb for drug impurities, while the Agilent 7010 series GC/TQ enables seamless switching between helium and hydrogen without performance loss.

GC/MS Approach for Analysis of Extractables and Leachables (E&L) in Complex Matrices Using Spectral Deconvolution and Retention Indices

An optimized GC/MSD and GC/Q-TOF approach identifies over 150 extractables and leachables in drug delivery systems with high confidence, reducing background noise using a novel ultralow bleed GC column.

Combined LC/MS and GC/MS Approach for Analysis of Extractables and Leachables in Complex Matrices Using High Resolution Mass Spectrometry

A workflow using complimentary techniques, LC/MS and GC/MS, is necessary for the comprehensive analysis of E&L compounds in rubber gaskets and catheters.

Analysis of Extractables and Leachables in Catheters Using Accurate Mass Libraries and High-Resolution GC/MS and LC/MS

Analyzed catheters extracts using high-resolution MS and performed data analysis using accurate mass libraries.

Beyond Aligners: Unmasking Hidden Extractables and Leachables in Orthodontic Devices

With the use of samples closest to user conditions and the use of GC-HRMS and the power of curated and annotated libraries to find candidate compounds that could be at the origin of the reported adverse effects.

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