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GC/MS Application Solutions

GC/MS/MS Pesticides Analyzer

Based on the 7010B Triple Quadrupole GC/MS, the Agilent Pesticides and Environmental Pollutants GC/MS/MS Analyzer 4.0 with the MassHunter Pesticide and Pollutant MRM Database provides the lowest possible detection and quantitation limits for pesticides residues in complex matrices. Dynamic MRM provides enhanced analytical efficiency by focusing on MRMs within its own RT window. Capillary flow technology (CFT) backflush optimizes cycle time, enhances robustness, and provides superior selectivity and sensitivity for routine operation.

Part Number	Description
M7412AA	(BZ) GC/MS/MS Pesticides Analyzer
M7414AA	(BZ) GC/MS/MS Pesticides Analyzer
G9250AA	(BZ) Pesticide and environmental pollutant MRM database

Features

- Factory configured and tested for optimized and verified chromatographic performance
- Database with over 1,100 compounds with multiple transitions per compound and over 7,500 matrix-optimized MRM transitions helps your team build acquisition methods that reduce matrix interferences
- Dynamic multiple reaction monitoring (dMRM) with retention-time scheduled MRM transitions enables larger target lists in a single run due to more efficient use of instrument data acquisition time and also provides a more intuitive way to build and modify acquisition methods using the P&EP MRM database
- Includes pesticide MRM acquisition methods and data files, application note, operator manuals and quick start guide for faster system start-up
- Incorporates innovative GC technologies, including capillary flow technology and retention time locking
- Constant pressure, post-column backflush method provides the greatest flexibility, can easily be scaled for shorter run times, and allows your lab to add GC detectors
- Constant flow, mid-column backflush methods provide the best sensitivity for trace pesticide analysis
- Reverse sandwich injection easily set up and controlled by software
- On-site installation and check out by a factory-certified technician confirm that your instrument and the application meet Agilent analytical performance criteria
- System familiarization ensures that your team is ready to go and can start calibration and validation work immediately following system installation

Get on the Fast Track to Success

Agilent Pesticides & Environmental Pollutants MRM Database for Intuvo-GC/TQ

Benefits

- Reliably analyze a wide array of pesticides and environmental pollutants with a Retention Time Locked MRM database with over 1,100 compounds developed specifically for the Intuvo flowpath.
- Save time, improve productivity, and halve required bench footprint using the novel Intuvo 9000 GC.
- Eliminate complex column trimming using Intuvo click and run, ferrule-free connections.
- Extend column life with the Intuvo Guard Chip and simple-to-configure backflush.

Analyzing pesticide residues in food can quickly become complex with increasing target compound and commodity lists and decreasing detection limit requirements. Having a robust method on an easy-to-use platform that integrates seamlessly to a large database is desired to facilitate this analysis. Sometimes, however, you do not have the time or capability to develop such tools—fortunately Agilent has done the work for you!

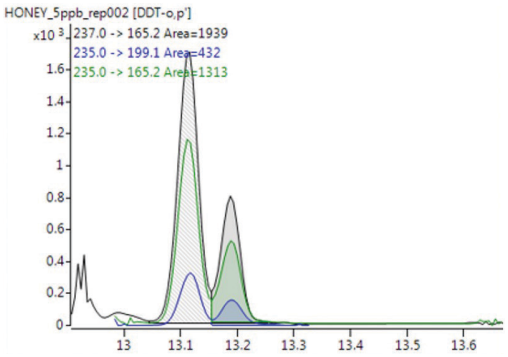
The Agilent Pesticides & Environmental Pollutants Intuvo MRM database and optimized analytical methods for the Intuvo-GC/TQ help laboratories get on the fast track to success. Start analyzing samples immediately using provided industry-standard methods and optimized MRM transitions.

Intuvo-specific MRM database and RTL methods

Optimized analytical approach, accessible to everyone

Quickly start your analysis with the P&EP Intuvo MRM Database and one of the two provided GC acquisition methods. Analysts can optimize their acquisition methods for their target compounds in a wide variety of matrices using the database, which includes up to 10 MRMs per compound.

The retention time locked GC acquisition methods precisely match retention times from column to column, instrument to instrument, and lab to lab for methods that have the same nominal parameters. The result: peaks are where you expect them. Retention time locking provides the basis for effective dynamic MRM methods.



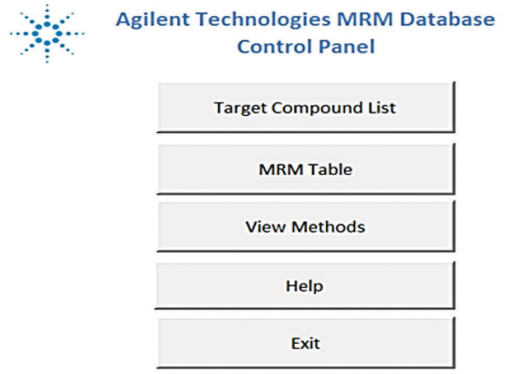
Have confidence in your results with RTL and matrix optimized MRMs.

Intuvo—innovation with purpose

Designed for ease-of-use, ideal for mass spectrometry

The Intuvo GC saves you time and money with technologies that make it easy to learn, simple to run, and easy to maintain.

- Simplify initial configuration, maintenance, and column changes using click and run connections.
- Protect downstream components from contamination and eliminate the need to trim the column, prolonging the lifetime of your Intuvo GC columns, with Guard Chip technology.
- Easily perform maintenance following at-instrument, graphic tutorials that walk you step-by-step through procedures.
- Increase column lifetime, reduce system cycle time, minimize MS ion source cleaning, and achieve stable baselines and retention times for target analytes using simple-to-configure backflush-based chromatography.



Build MRM acquisition methods with the most comprehensive MRM database.

Ordering information

The Pesticides & Environmental Pollutants Intuvo MRM database is included in the Pesticides Workflow kit for Intuvo/7000D:

Name	Part number
Pesticides Workflow Kit for Intuvo/7000D	G9223AA

COMPREHENSIVE PESTICIDE SURVEILLANCE USING A SINGLE SYSTEM

MassHunter Pesticides PCDL and Workflow for GC/Q-TOF

Monitoring pesticide residues is crucial to ensuring a safe food supply. There are currently over 1000 registered pesticides; the latest Agilent GC/TQ and LC/TQ instruments can each now deliver analysis of hundreds of these compounds per run. However, comprehensive calibration of hundreds of pesticides can be time consuming and cost prohibitive, especially considering it is often necessary to create different calibrations for different matrices or sample preparation procedures.

There is therefore a strong demand for the capability to qualitatively screen for a broad array of pesticides and quickly determine whether identified pesticides are in compliance with the regulated maximum residue limits (MRLs).

Confidently use accurate mass to perform target and suspect screening

The Agilent MassHunter Pesticides Personal Compound Database and Library (PCDL) and Workflow for GC/Q-TOF provide a comprehensive pesticide surveillance solution for both quantitative and qualitative screening. This solution combines a comprehensive PCDL and detailed qualitative and quantitative screening workflows for use with the Agilent 7200 Series High Resolution Accurate Mass GC/Q-TOF to ensure laboratories meet expanding demand and productivity goals.

The Agilent MassHunter Pesticides PCDL and Workflow for GC/Q-TOF includes:

- Easy adoption and start-up of dual qualitative and quantitative workflow using the included comprehensive workflow guide, PCDL, and methods
- Expertly curated accurate mass PCDL for GC/Q-TOF with more than 850 pesticides and environmental contaminants
- Customize the PCDL exactly for your analysis—easily add or update compounds, spectra, and retention times (RTs) through the latest PCDL Manager Software
- Optimized data collection using two sets of industry standard acquisition GC methods
- Confident Retention Time Locking (RTL)-based compound identification for use with the accompanying acquisition methods
- Keep your experiments current with 3-years of free PCDL upgrades

Flexibility to perform quantification only when needed

Combining the Agilent MassHunter Pesticides PCDL and Workflow for GC/Q-TOF with the accurate mass capabilities of the 7200 Series GC/Q-TOF enables:

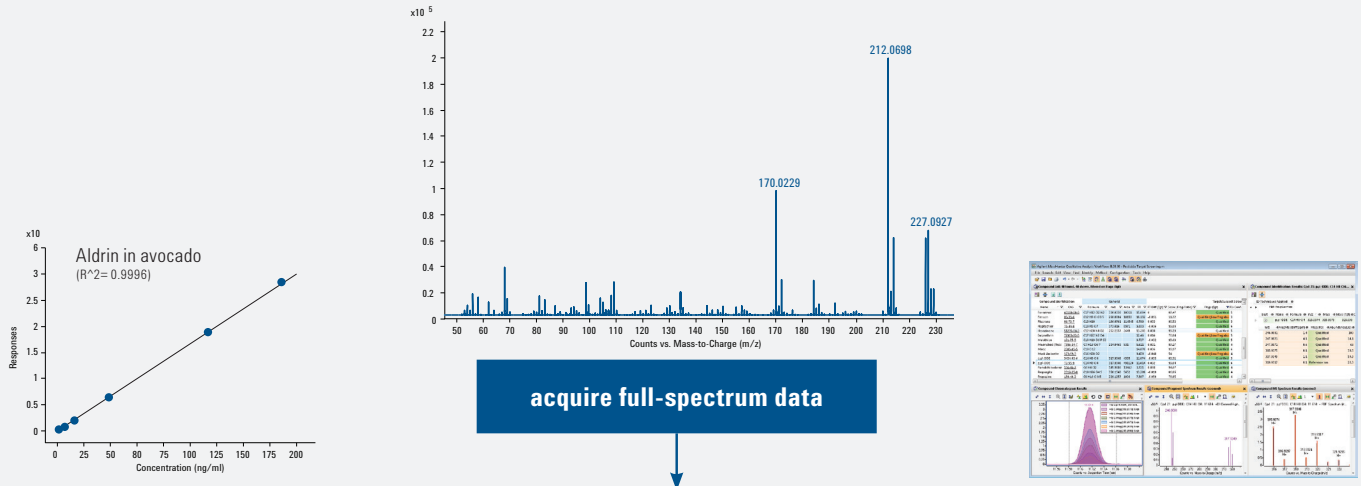
- Quantitative screening for pesticides employing either comprehensive multi-level or fast quantitation
- Qualitative (suspect) screening against the PCDL

Unrivaled confidence in identification

Find by Fragments—a MassHunter Qualitative Analysis All Ions data processing workflow—provides an automated process for identifying compounds against PCDL input. MassHunter Data Analysis software also offers a comprehensive review of screening results, assisted by delta RT, EIC alignment, fragment ratio score, and mass accuracy, to verify the compound's identification with even greater confidence.

When target compounds are available, a comprehensive multiple-level calibration curve can be generated with increased linear range, thanks to the SureMass feature in MassHunter Quantitative Analysis software. Fast quantitative screening, using a one- or two-level calibration, can be employed for rapid estimation of whether a broad range of pesticides are in compliance with certain MRLs.

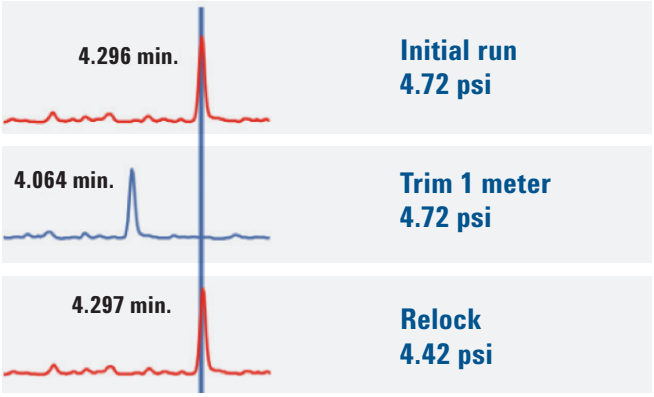
Workflow for quantitative and qualitative screening



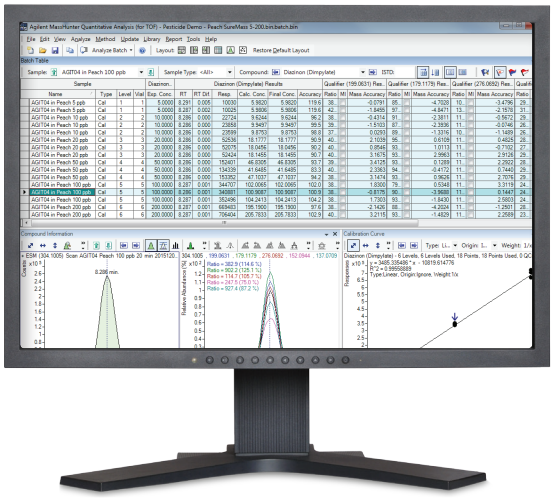
Developed in collaboration with leading pesticides laboratories

Transform your results from acceptable to exceptional using expert-developed acquisition methods and the MassHunter Pesticides PCDL and Workflow for GC/Q-TOF:

- Identify compounds through accurate mass, retention time, isotope pattern, and fragment confirmation
- Readjustment of RT in the library is never required—RTL ensures that the method always delivers the same RT regardless of column age, maintenance, or replacement
- 20-minute acquisition method with shorter cycle times for higher-throughput requirements
- 40-minute acquisition method when enhanced chromatographic separation is required
- Unique capillary flow technology enables backflushing, which extends column life and reduces run time through removal of late-eluting matrix components
- Add your own compounds and library spectra using the MassHunter Qualitative Data Acquisition auto-curate workflow to create PCDLs specific to your analyses
- Perform retrospective data analysis using newly added PCDL compounds—without the need to re-run samples



Auto RTL tuning following inlet or column maintenance enables your laboratory to start analyzing samples faster.



MassHunter Quantitative Analysis result and data review

Ordering information

The MassHunter Pesticides PCDL and Workflow for GC/Q-TOF can be purchased with a new instrument order or as an add-on to an existing 7200 Series GC/Q-TOF.

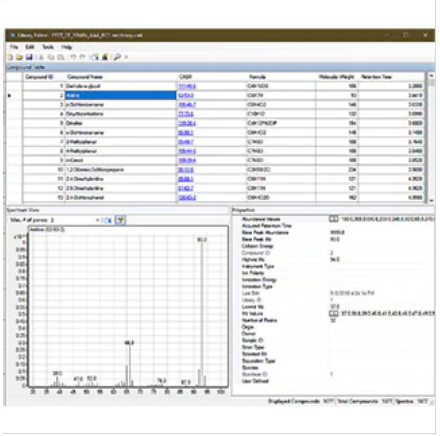
Description	Part Number
MassHunter Pesticides PCDL and Workflow for GC/Q-TOF	G3892AA

GC/MS Application Solutions

GC/MS Libraries

Agilent RTL libraries for GC/MS have been acquired using retention time locking (RTL), a critical component of chromatographic sample identification. The use of RTL allows for results to be easily compared with those obtained on other instruments and MS types. The use of multiple platforms provides a powerful toolset for addressing the needs of any analysis.

NIST and Wiley libraries provide users with the confidence and assurance that their untargeted spectral search is the broadest available. These libraries comprise a collection of electron ionization (EI) and MS/MS mass spectra, with chemical and GC data, plus search software to identify your own unknown spectra.



Part Number	Description
G1033C	NIST MS Library Software
G1035G	Wiley with NIST MS Library Software
G1039E	Maurer/ Pfleger/ Weber MS Library 2016
G1041C	NIST MS Library - Upgrade
G1671AA	Hazardous Chemical Retention Time Locking Library
G1672AA	Pesticides Retention Time Locking Library
G1673AA	Indoor Air Toxics Retention Time Locking Library
G1674AA	Forensic Toxicology Retention Time Locking Library
G1675AA	Japanese Positive List Retention Time Locking Library
G1676AA	Fiehn GC/MS Metabolomics Retention Time Locking Library
G1677AA	Environmental Semi-Volatiles Retention Time Locking Library
G1730D	Wiley with NIST MS Library Software - Upgrade
G1731C	Maurer/ Pfleger/ Weber MS Library 2016 - Upgrade

Features

- Retention time databases allow easy peak location and increase confidence in identification of the target compounds based on mass spectra and retention times.
- RTL enables compounds of interest found with the GC/MSD to be compared to results obtained with GC/MS/MS using an MRM database
- Compounds found can also be compared to results obtained with GC/Q-TOF and Agilent MassHunter quantitative analysis and an accurate mass personal compound database and library (PCDL)
- Library searching using the trusted NIST and Wiley mass spectral reference libraries allows identification of unknown compounds from EI (GC/MS) and MS/MS spectra
- NIST and NIST + Wiley libraries provide hundreds of thousands of EI MS spectra, MS/MS spectra, GC data and retention indices, and/or chemical names/structures
- The latest NIST MS Library bundle includes over 350,000 EI spectra for over 300,000 compounds (around 40,000 increase) and GC Methods/Retention indices library (nist_ri) with over 139,000 compounds
- The Wiley 12th release has over 668,452 unique compounds with 817,290 spectra, and expansion of the new edition brings an additional 41,450 spectra into the library

Robust Solution for Routine Monitoring of Arsine and Phosphine in Olefin Production

Agilent Arsine Phosphine GC/MS Analyzer

Metallocene catalysts used in the polymerization of ethylene (or propylene) to polyethylene (or polypropylene) are preferred for their very high activity but are very sensitive to impurities, even at low levels. Degradation of the catalyst can cause the production process to be shut down earlier than planned in order to replace the deactivated catalyst.

To monitor and maximize the lifetime of the catalyst, both ethylene/propylene producers and consumers need to monitor impurities at the lowest possible levels, such as low part-per-billion (ppb) concentrations for arsine and phosphine. Detection of these impurities at low-ppb levels is typically only achievable with a GC/ICP-MS (or GC/ICP-MS/MS), and labs often send samples to contract labs for analysis.

Measure impurities with confidence, in-house

Agilent's Arsine Phosphine GC/MS analyzer provides a robust solution for routine monitoring of arsine and phosphine impurities in olefin production at single-digit ppb concentrations. Based on 8890 GC and 5977B mass spectrometry platforms, each system is factory pre-tested and pre-configured to perform sensitive analysis in monomer-grade ethylene and propylene. No specialized training is required for operation, allowing labs to quickly implement the system for low-level detection of impurities in olefins, in-house and with short turn-around times.

Use of innovative technology leads to excellent analytical performance:

- Single-digit ppb detection limits for arsine and phosphine in monomer-grade ethylene and propylene
- Innovative High Efficiency Source maximizes the number of ions that are transferred into the quadrupole analyzer, for highest sensitivity
- Patented JetClean Self-Cleaning Ion Source ensures long-term stability and high precision, along with reducing manual source cleaning frequency
- Agilent Inert Flow Path solutions ensure better results, and allow you to process more samples without unplanned maintenance and recalibration
- Fully automated calibration system ensures simplified operation using G-Cal style permeation tubes

Agilent Arsine Phosphine GC/MS Analyzer

Analyzers are pre-configured and factory tested

The GC/MS Analyzer is configured and tested for the analysis of arsine and phosphine in olefins, and can also be used to test for hydrogen sulfide and carbonyl sulfide. Verified chromatographic performance with installed consumables and methods provides easy out-of-the-box operation and reduces the time you spend configuring individual components. A calibration system using G-Cal style permeation tubes, provides automated calibration in the range of 5–50 ppb by running a simple 5 run sequence.

Each analyzer arrives ready to perform your application

On-site installation and check out of the Analyzer by a factory-certified technician confirms that your instrument and the application meet Agilent's analytical performance criteria. System familiarization ensures that your team is "ready to go" on day one and you can start calibration and validation work immediately following system installation

Ordering information for the Agilent 5977B Single Quadrupole GC/MS with an Agilent 8890 GC analyzer system:

Part Number	Description
M7484AA	Arsine Phosphine Analyzer complete with built-in calibration system

Optional:

MassHunter Software is a single powerful software solution for all Agilent MS platforms, saving training costs in multi-instrument labs.

Agilent CrossLab
From Insight to Outcome

Optional:

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