

**Gas Chromatography/
Mass Spectroscopy****KEY FEATURES**

- Consistent, ultra-trace detection limits
- Full scan mass spectra, SIFI, and SIM modes
- SMARTsource Technology for easy maintenance
- Sensitive and reliable Clarifi Detector
- Marathon Filament for ultimate robustness
- SimplicityChrom CDS Software

Productivity and confidence of results for MS applications - PerkinElmer GCMS 2400 System

Introduction

With the PerkinElmer GCMS 2400™ Gas Chromatography Mass Spectrometry System laboratories have a robust solution that offers

both stability and ultra-low detection limits. Engineered around an advanced and fast quadrupole mass spectrometer, the MS 2400™ SQ Detector is integrated into the GC 2400 Platform, driving laboratories' journey from sample to results.

Designed to address modern analytical lab productivity, the GC 2400 Platform features a detachable touchscreen combined with smart sampling capabilities for faster decision making, in and outside the lab. The user interface collates and provides live status information on the different configured GC detectors and sampling accessories, using a single display. Managed by PerkinElmer SimplicityChrom™ Chromatography Data System (CDS) Software, the MS 2400 SQ System is an integral part of a comprehensive GC workflow.



Figure 1: The PerkinElmer GCMS 2400 System.

Thanks to simplified maintenance and long-lasting components, the MS 2400 SQ System optimizes lab efficiency with increased up-time, maximizing the number of samples users are able to analyze.

No matter the application, from industrial, environmental, pharmaceutical or food and beverage, the GCMS 2400 System delivers accurate data, giving full confidence of results.

Increased uptime with ease-of-use features

The GCMS 2400 System supports laboratories with ease-of-use features minimizing downtime and poor asset utilization.

Marathon Filament

The PerkinElmer Marathon™ Filament has been engineered to provide exceptional long life and withstand difficult chromatography conditions. It has high resistance to demanding injections such as headspace or purge and trap and challenging samples such as flame-retardant.

- Long life even under the most difficult chromatography conditions
- Unique coating engineered for maximum durability and optimum performance
- Works with both electron and chemical ionization sources

SMARTsource Technology

Available in EI and CI ionization mode, the PerkinElmer SMARTsource™ (Simplified Maintenance and Removal Technology) has been designed for ultimate simplicity and flexibility. Switching sources can be done in a matter of seconds by simply twisting and pulling, with no tools required and no wires to disconnect. Cleaning the source or switching it out for a spare can be quickly accomplished by the user to minimize downtime in a high throughput environment. Since the source is removed from the front of the MS 2400 SQ System, the analyzing quadrupole is never exposed or at risk for contamination – essential to ensuring reliable data.



Figure 2: A simple twist and pull is all that is required to access the tool-free SMARTsource on the MS 2400 SQ Detector.

SQ MS Analyzer & Clarifi Detector

The unparalleled stability of the MS 2400 SQ System means you can spend less time calibrating the instrument – maximizing your laboratories sample throughput. Beginning with the pre-quads, non-target ions are removed before reaching the analyzing quadrupole. These pre-quads can be cleaned by the user to return the instrument to as-new performance levels, even when analyzing samples in complex matrices. The PerkinElmer Clarifi™ Detector optimizes ion/electron exchange efficiency to produce strong signals to achieve unsurpassed sensitivity.

Productivity even for the most demanding labs

Offering accurate detections in full-scan mass spectra, selected ion full ion (SIFI), and selected ion monitoring (SIM) modes, the single quadrupole mass spectrometer provides users with more analytical data at higher sensitivity without additional analysis.

The following MS 2400 SQ models are available (compatible with the GC 2400 System and have a 300 L/sec turbomolecular pump):

- MS 2400 SQ T- with Electron Ionization (EI)
- MS 2400 SQ C – with Electron Ionization (EI) and Chemical Ionization (CI).

The MS 2400 SQ System acquires a large number of spectra (12,500 amu/sec) across every GC peak with the widest mass range available in gas chromatography (1-1200 u). This enables the clear definition and quantification of extremely narrow chromatographic peaks to deliver accurate and precise data with ultra-trace detection limits.

Mass Spec AutoTune can be accomplished in two ways: Environmental Tune is optimized for EPA methods and Sensitivity Tune can be optimized by the user to suit the needs of a particular analysis. Reporting software has specialized reports for environmental, forensic, qualitative, and quantitative applications.

Smart connectivity solutions for optimized lab processes

PerkinElmer Simplicity Vision™ is a web based application that runs on the tablet interface of the GC 2400 System that provides status information on a single screen for all GC 2400 Systems connected to the same network.

This smart application running on any PC, laptop or tablet can be used as a multi-instrument interface where users can accelerate on-the-go decisions even while outside of the laboratory. This revolutionizes how the analysis of information enter the decision making process from anywhere.

- The home screen provides an overview on the different systems configured in the lab from where users can select the instrument to get information from at a glance.
- The plot screen allows visual confirmation that analyses run are being performed according to the method and allows faster decision-making if intervention is needed.

The tablet can be used in wired or wireless mode according to lab's needs and IT requirements. The GC 2400 System features a dedicated holder, allowing the use of the tablet as a conventional instrument touchscreen.

- Assess instrument readiness status
- Check GC methods and sequences status
- Sequence stop function
- Consult logs and help menu items
- Browse consumables and accessories information

Chromatography Data System

SimplicityChrom CDS Software truly connects and integrates all steps of the GC workflow in a way that simplifies the processes.

Thanks to a user-friendly, intuitive graphical interface, SimplicityChrom CDS Software minimizes training needs and adapts to the different user-proficiencies of the lab.

SimplicityChrom features and benefits include:

- Modern design, balancing the power you need with user-friendly iconography and easy-to-learn workflows
- Efficient creation and printing of reports directly from the Data Review and Acquisition modules
- Smart user interface offering notifications
- Management of user accounts and profiles, simplifying the administration process and mitigating many common IT challenges associated with domain management

Typical Applications

By combining the versatility of gas chromatography to the sensitivity of mass spectrometry, the GC 2400 Platform allows you to manage analysis from sample to result. Smart separation technologies and a full array of service support meet the needs for busy labs focused on simplified chromatographic operations.

Enabling consumer safety and fair markets while protecting producers' reputation

From the detection of contaminants in food to quality control of food contact materials according to regulations, laboratories need trusted solutions to implement efficient analytical workflow. The GC 2400 Platform, featuring the MS 2400 SQ Detector, provides sensitivity for the most challenging food matrices while ensuring efficient lab operations.

Enabling more data for cleaner air, water and soils

Whether analyzing samples for pesticides or volatile organic compounds the GCMS 2400 System supports labs looking for robust yet sensitive GC solutions for environmental matrices. Sampling capabilities like Purge & Trap, Thermal Desorber are fully supported in the GC 2400 Platform delivering a robust analytical workflow for the most challenging matrices.

Enabling product quality for consumer safety and productivity

When analyzing solvents or polymers solvents or polymers, the GCMS 2400 System delivers accurate results, allowing laboratories to have efficient workflows for QA/QC analyses. With the GC 2400 Platform and SimplicityChrom CDS Software, high-throughput labs can optimize their decision-making process thanks to the truly wireless user-experience. Hyphenation with PerkinElmer TGA and IR Systems allow a comprehensive characterization of polymers and other industrial materials.