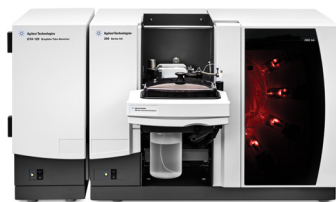
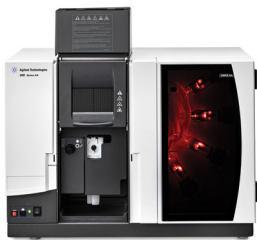


Atomic Absorption Spectrometers Productive, Precise, Reliable.

Agilent 200 series AA systems

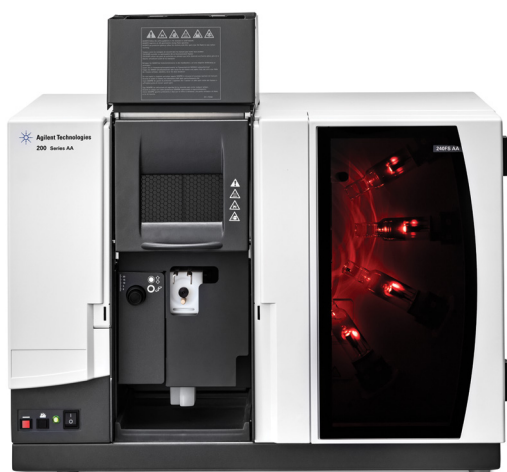


Productive, Precise, Reliable.

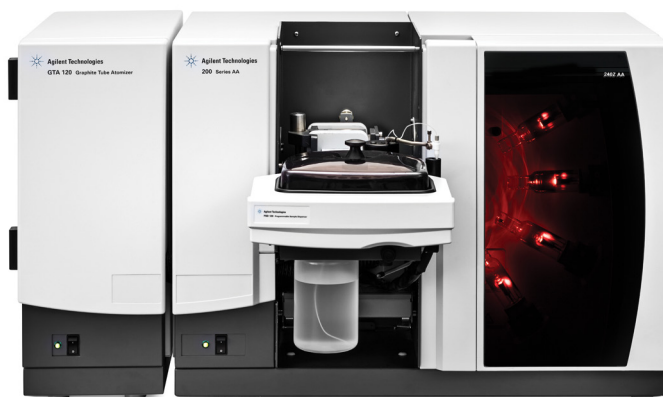
Agilent's AA range is productive, user-friendly, and exceptionally reliable. The instruments deliver the high performance that analysts require, while being equally at home in routine laboratories where reliability and simple operation are vital.

A family of atomic absorption solutions

- The Agilent 240 AA combines flexibility with reliable hardware, providing budget-sensitive users with a high-performance AA for routine flame/furnace/vapor analyses.
- The Agilent 240FS/280FS AA are fast and productive flame AA systems, with Fast Sequential operation doubling sample throughput and dramatically reducing running costs. Able to handle multi-element analysis with ease, they are ideal for food and agriculture, or any high throughput labs.
- The Agilent 240Z/280Z AA Zeeman Graphite Furnace AA (GFAA) systems are productive and precise, providing superior furnace performance and accurate background correction.
- The Agilent Duo system will double your productivity, providing true simultaneous operation of flame and graphite furnace without changeover delays.



The Agilent 240FS AA

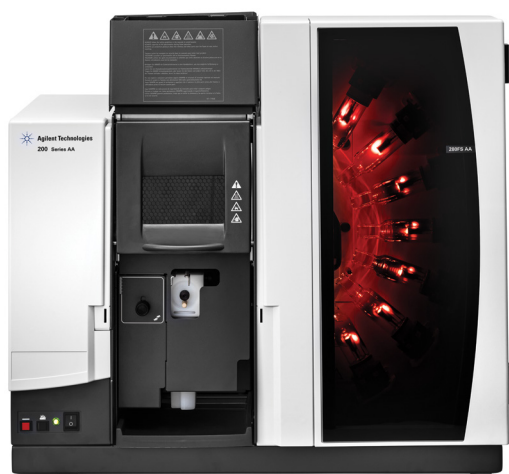


The Agilent 240Z AA

For Your Application

Agilent is committed to providing solutions for your application. We have the technology, platforms, and expert guidance you need to be successful.

	Industrial	Chemical and petrochemical	Environmental	Food and agriculture	Metals/mining
FS Flame AA 240FS/280FS AA + SIPS 20	Ca, Cr, Cu, Fe, K, Mg, and Na in plating solutions	Na and K in FAME (fatty acid methyl esters) Pb and Mn in unleaded gasoline	Determination of Mg, Ca, and K in brines (SIPS accessory provides automated calibration and online sample dilution)	Major elements in food, beverage, and agricultural samples Cations and nutrients in soils	Au, Ag, and Pt group elements in ore grade material
Flame AA 240 AA	Chemical analysis of cement Zn and Sb in paper Ca, Cr, Cu, Fe, K, Mg, and Na in plating solutions	Wear metals in used oils Additives (e.g. Ba, Ca, Mn, and Zn) in fresh lubricating oils Major elements in polymers	Pb in airborne particulates		Major components in steel and alloys Analysis of high purity gold
Vapor Generation AA 240FS/280FS AA + VGA 77	As, Hg, and Sb in coal fly ash		As, Sb, and Se in sediments Hg in waters, effluent, etc. (US EPA Method 245.1) Hg in electronics and plastics (WEEE/RoHs)	Hg and As in fish and sea foods Trace As and Sb levels in plant materials	As and Sb in zinc plate solutions
GFAA 240FS/280FS AA + GTA 120	Al and Fe in paper Pb and Cd in consumer goods, toys, jewelry	Ni, V, Fe, and Na in crude oils Trace metals in engine oil	Heavy metals in soils	Pb and Cd in fish, sea foods, and plant materials	Trace metals in high purity copper
Zeeman GFAA 240Z/280Z AA	Trace elements in high purity sulfuric acid Na, Ca, and Si in pure process water	Trace elements in heavy, industrial fuel oils	Cd, Cu, Pb, Co, and Ni in marine invertebrates Toxic elements in waters and soils (US EPA Method 200.9) Pb, Cd, and Cr in electronics and plastics (WEEE/RoHs)	Cu, Fe, and Ni in edible oils	Minor components in steel and alloys



The Agilent 280FS AA



The Agilent 280Z AA

Fast Sequential Flame AA

Achieve the productivity and speed of sequential ICP with Agilent's Fast Sequential (FS) AA systems.

Fast Sequential mode will:

Boost productivity and slash running costs

- Determine the concentration of all elements from a single aspiration of each sample
- Halve your analysis time by reducing sample analysis delays
- Reduce sample consumption—with less delay throughout analysis and less sample waste
- Save labor and reduce running costs—the more elements you determine, the more you save on gas, reagent, and lamp usage

Get accurate results

- Determine 10 elements per sample in less than 2 minutes without compromising data quality
- Provide full elemental coverage, no matter how many elements you require
- Improve precision and accuracy with online internal standard corrections for physical differences, sample preparation errors, or drift

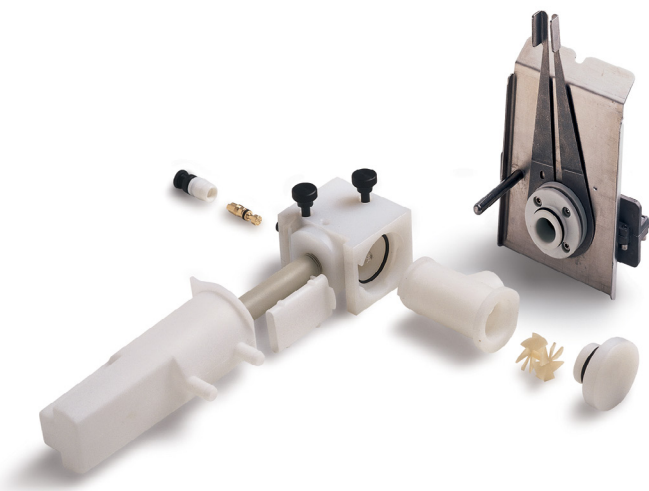
Simplify your analysis

- Take the guess work out of method development with SpectrAA's comprehensive cookbook
- Easily set up FS methods with the FS wizard
- Accelerate method development with increased sample throughput

Tune your flame AA performance

Agilent's Mark 7 atomization system can:

- Achieve high sensitivity—typically > 0.9 Abs. from 5 mg/L Cu
- Optimize precision—typically < 0.5% RSD from ten 5 second integrations
- Reduce interferences for complex samples with removable twin headed mixing paddles
- Minimize burner blockage with a contoured burner design
- Corrosion resistant components provide increased durability making it ideal for high acid matrices

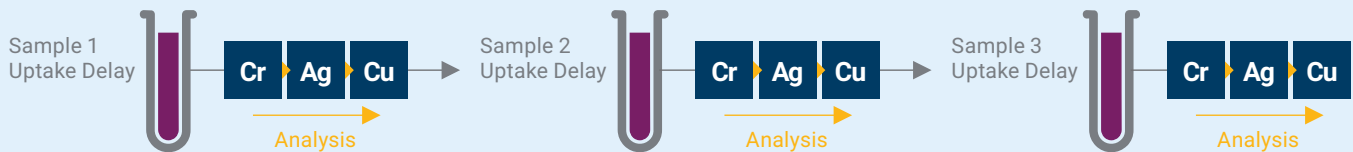


Agilent's Mark 7 atomization system

Fast Sequential vs Conventional AA

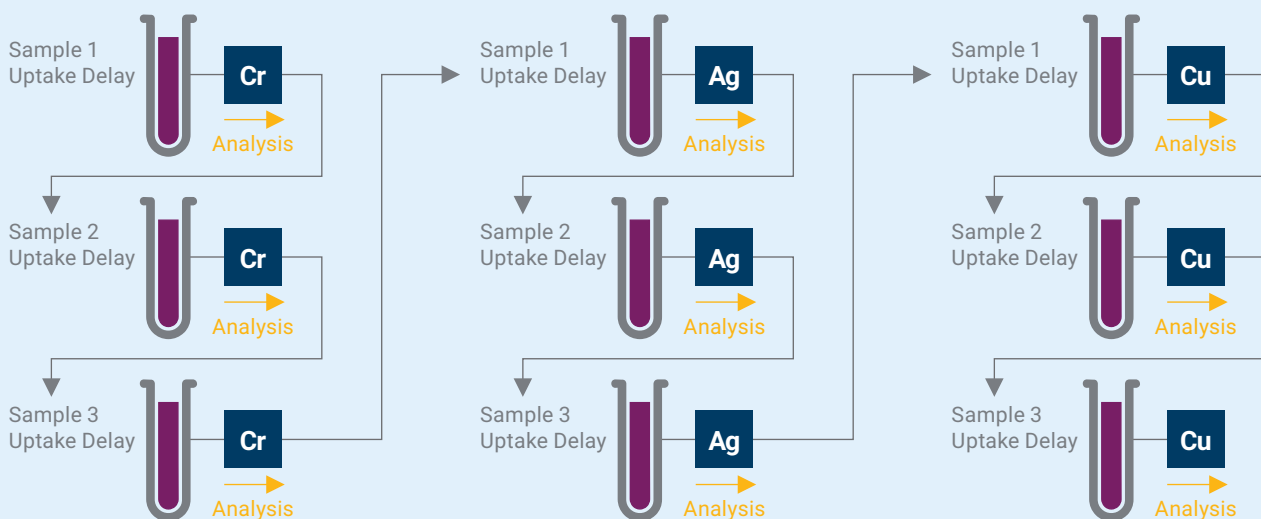
Fast Sequential mode

Using Fast Sequential mode, samples are only aspirated once, with all elements being measured before the next sample is aspirated.



Conventional mode

Conventional AA determines only one element from each sample aspiration, so samples are analyzed time and time again during a multi-element sequence.

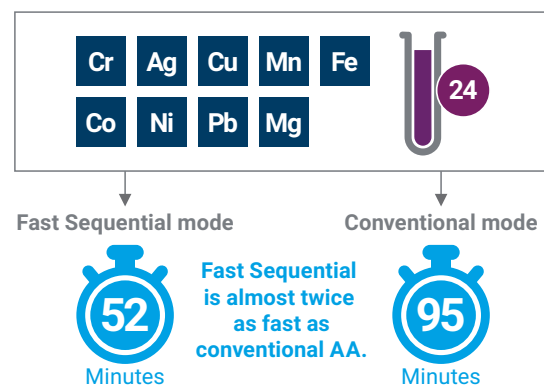


How does Fast Sequential AA work?

1. The software sorts the elements by wavelength and flame type
2. All lamps operate simultaneously, to eliminate warm-up delays
3. A motor-driven mirror provides fast lamp selection
4. Reproducible wavelength positioning is achieved with minimal delays by the high-speed wavelength drive (2,000 nm/min) operating under intelligent software control
5. The automatic gas control starts instantaneous changes to programmed flows and provides superb reproducibility with optimum flame conditions for each element

How much faster is Fast Sequential?

Fast Sequential can greatly improve productivity for a typical high throughput analysis of 9 elements in 24 solutions.



Sensitive and Accurate Furnace AA

Agilent's 240Z/280Z AA with Zeeman background correction provides the furnace performance and background correction accuracy required to measure ppb levels of toxic, heavy metals such as Pb and Cd.

240Z/280Z AA Zeeman dedicated GFAA

Agilent's 240Z/280Z AA features Zeeman background correction for correction over the full wavelength range, structured backgrounds, spectral interferences, and high background absorbances.

Outstanding performance for challenging samples

- Outstanding performance at ppb levels from the Constant Temperature Zone (CTZ) furnace design
- High sensitivity and freedom from interferences. Competing systems may limit performance by restricting elements, the wavelengths available for analysis, or compromising furnace conditions
- Accurate correction with Agilent's unique magnetic waveform providing double the background correction speed of longitudinal Zeeman instruments and three point polynomial interpolation

Simple setup and operation

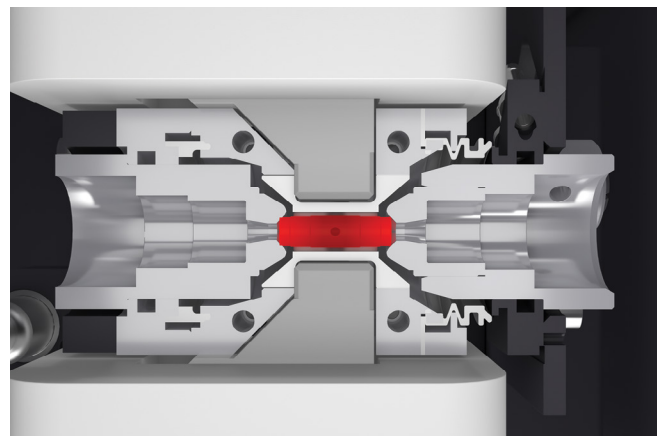
- Use Tube-CAM to accurately set the probe dispensing height and confirm the optimum drying temperature
- The Surface Response Methodology (SRM) furnace optimization software wizard simplifies method development, enabling you to easily select optimum conditions for your analysis
- Easy alignment—only a single light source is required

High sensitivity and accurate background correction for your toughest samples

Zeeman background correction is accepted by regulatory agencies (such as the US EPA) as the most effective background correction technique for regulated environmental analyses.

Agilent Zeeman systems feature the transverse AC modulated Zeeman configuration with the field applied across the atomizer for the most effective background correction.

This design avoids the sensitivity losses observed with a DC (permanent) magnet. Light is maximized throughout, compared with longitudinal designs where endcaps restrict the light passing through the pole pieces of the magnet. Maximizing the light ensures outstanding sensitivity and maximum performance with challenging sample matrices.



The Agilent Zeeman systems feature the transverse Zeeman configuration and Constant Temperature Zone furnace design.



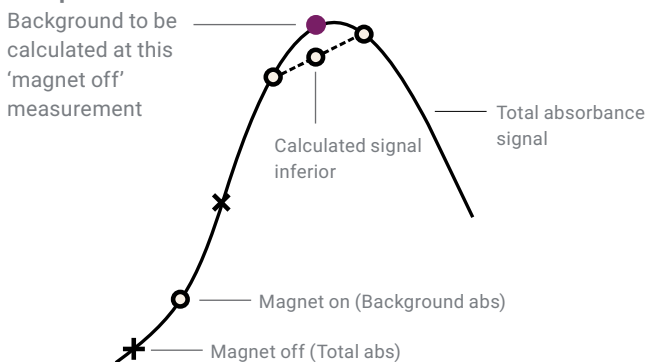
An Agilent Duo system – simultaneous flame and furnace operation from one PC

The Duo—simultaneous flame and furnace

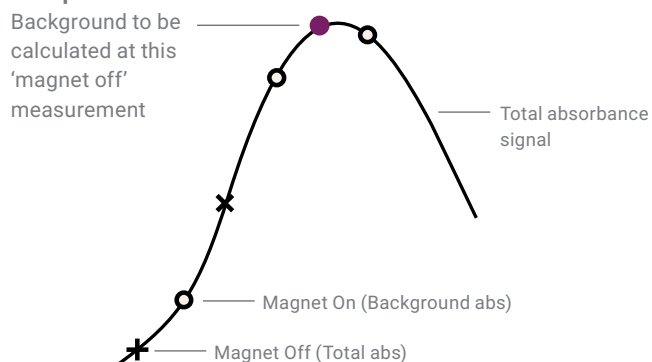
The Agilent range of Duo systems offer simultaneous flame and furnace operation that delivers the lowest cost per analysis, making it ideal for busy laboratories.

- Double the productivity of your laboratory—an Agilent AA Duo provides true simultaneous operation of flame and graphite furnace from a central computer
- Save time with dedicated atomizers that eliminate complex setup and time consuming changeovers. Each atomizer is permanently aligned for immediate use and never needs re-alignment
- Analyze any sample, with the widest linear dynamic range from sub ppb (using furnace and hydride techniques) to percent levels (flame)
- User-friendly software delivers rapid instrument setup, easy operation, and simple method development

Linear Interpolation Procedure



Polynomial Interpolation Procedure



Agilent Zeeman systems use three point polynomial interpolations to accurately track the background signal, resulting in an 11-fold improvement in correction accuracy.

Accessories to Meet Your Analysis Challenges

With an extensive range of accessories to extend the capabilities of Agilent AA instruments, you can meet all your analysis challenges.

Automatic dilutions, calibrations, and inline additions and spikes

Agilent's Sample Introduction Pump Systems (SIPS) improve productivity with a range of unique benefits for flame AA.

- Inline addition of ionization suppressants during analysis, eliminating manual preparation before analysis
- Eliminates tedious, manual preparation of multiple calibration standards. SIPS requires only one calibration standard
- Fast, inline dilution—even if your sample is out of the calibration range, you'll get an immediate result
- Enhances accuracy and precision—with less than 2% error, SIPS reduces manual dilution errors
- Performs inline spiking of samples for spike recovery studies
- Automates the tedious task of flame standard addition calibrations when tackling samples with complex matrices



Agilent SIPS 20

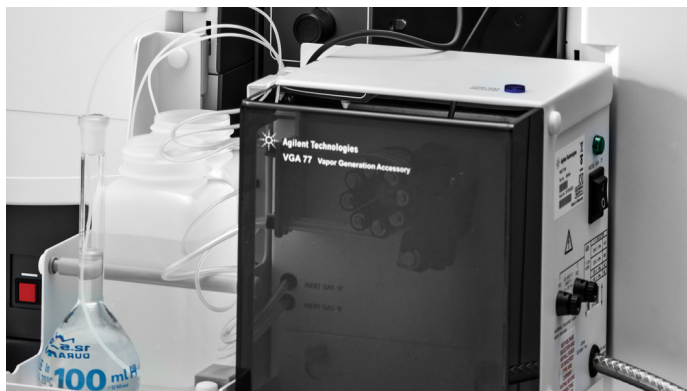
Fast and flexible autosampler

Automate your analyses with the Agilent SPS 4 Sample Preparation System and speed up flame AA even further. Using the SPS 4, you can create a convenient sample preparation platform for your laboratory.

- Fastest ever sample to sample changes
- High sample capacity to enhance laboratory productivity with support for rack exchange during analysis
- Flexible configuration with standard laboratory racks for different tube types and probes
- Optional environmental enclosure for purging/fume extraction



Agilent SPS 4 Autosampler

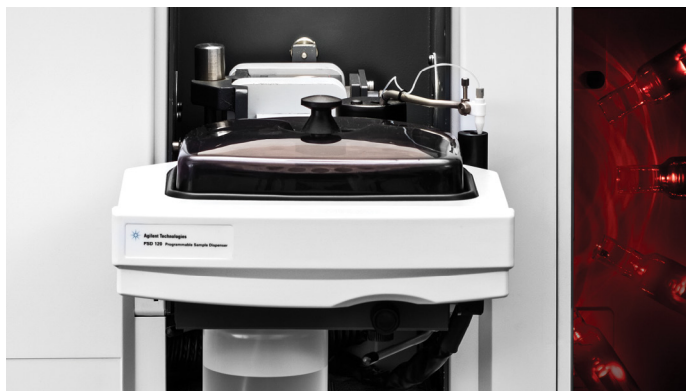


Agilent VGA 77

Hydride analysis

The 240 AA flame with Vapor Generation Accessory (VGA 77) is well suited to cost-conscious environmental, food, and agriculture laboratories. It offers a dedicated solution for trace level determination of Hg using the regulatory approved cold vapor technique, or hydride forming elements such as As and Se using the vapor generation technique.

- Determine mercury and hydride forming elements (As, Se, etc.) at ppb levels
- Convenience of flame AA operation with better sensitivity than flow injection
- Greater productivity—results are obtained in less than a minute, even with three replicates per sample
- Reduce sample consumption to as little as 8 mL per element during analysis
- Simple and automatic operation, as samples are automatically combined with a continuous flow of acid and reagent, for rapid reaction and best sensitivity
- Simple changeover. Reduce setup time and eliminate cross contamination by changing modules when switching between elements with conflicting chemistries
- Run your hydride determinations unattended and increase the sensitivity by 30% with the electrically heated quartz cell (ETC-60)



Agilent AA 280FS, fitted with the GTA 120

Graphite furnace

Agilent's integrated GTA 120 Graphite Tube Atomizer provides superior furnace performance, no matter how difficult the sample, making it ideal for applications as diverse as chemical, petrochemical, food, and agriculture.

- Fast atomization even with difficult sample matrices
- Best signal-to-noise, due to the long atomization cell. This ensures the highest sensitivity and lowest detection limits
- Reduces running costs with extended tube lifetimes and a 40% decrease in gas consumption
- Simplifies method development. Use Tube-CAM to accurately set the probe dispensing height and confirm the optimum drying temperature. The SRM wizard also optimizes the ashing and atomization temperatures
- Run unattended longer—with capacity for 130 solutions, carousel changes are reduced for high throughput labs

Software to Simplify Your Analysis

User-friendly software with all instrument controls, sample results, and signal graphics accessible from one window.

Simple method development

- Be guided through every aspect of analysis. This includes setting up a Fast Sequential sequence or creating custom racks and layouts for use with the SPS 4 autosampler
- Automate furnace optimization with the Surface Response Methodology (SRM) wizard. This wizard recommends the optimum parameters and automatically creates a method using these conditions

Run an urgent sample

- Got an urgent sample to run? Simply click the Random Sample option to run it immediately. When complete, the system will resume the programmed sequence

Powerful reporting options

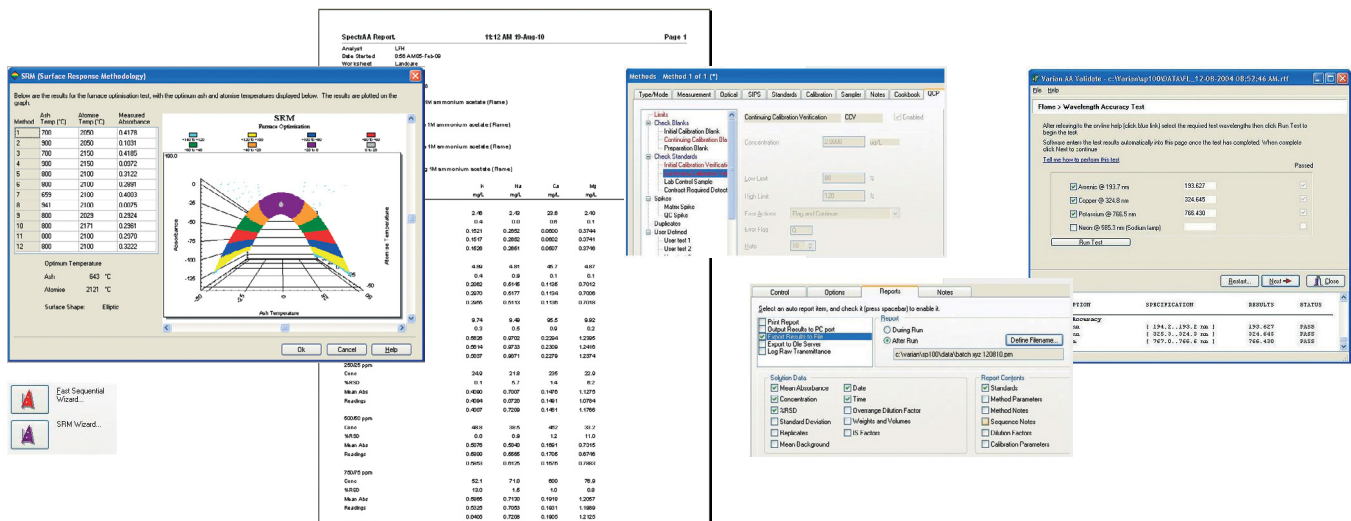
- Select which data to include and the report type, including sequential or multi-element formats
- Directly import and export to the LIMS online, eliminating tiresome and error-prone manual transfers

Track consumables usage

- Save on downtime and running costs by tracking the operating lifetime of key consumables such as lamps, electrodes, and pump tubing. You can also track how many replicates or samples have been run to help anticipate consumable replacement

Compliance support for regulated industries

- Ensure full compliance with US EPA requirements by confirming your results during analysis with a comprehensive range of QC tests
- Instrument qualification services (IQ/OQ) provide initial and ongoing verification that your system meets regulatory requirements
- Optional Spectroscopy Configuration Manager (SCM) and Spectroscopy Database Administrator (SDA) software helps you achieve compliance with the US FDA 21 CFR Part 11 electronic records regulations



Guide >

Report >

Validate >

Integrate >

Certify >

Services and Supplies

Maximize your productivity and data quality with genuine Agilent atomic spectroscopy supplies.

Your essential resource for supplies

Agilent AA supplies are manufactured to stringent specifications and rigorously tested to ensure you can optimize performance. Agilent offers an extensive range of single-element and solid cathode multi-element lamps, and high intensity UltraAA lamps for superior, cost effective performance. Why risk compromising your analytical result with anything else?

For more information, see www.agilent.com/chem/specsuppliesinfo

Our services let you focus on what you do best

Whether you need support for a single instrument or multiple labs, Agilent can help you solve problems quickly, increase uptime, and maximize the productivity of your team with:

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- Application training and consulting from our dedicated, worldwide network of specialists

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If your Agilent instrument requires service while covered by an Agilent service agreement, we guarantee repair or we will replace your instrument for free. No other manufacturer or service provider offers this level of commitment to keeping your lab running at maximum productivity.



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agilent_inquiries@agilent.com

Europe

info_agilent@agilent.com

Asia Pacific

inquiry_lsca@agilent.com

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