

Agilent Technologies, Inc. - Agilent 4100 MP-AES Microwave Plasma Atomic Emission Spectrometer



GENERAL DESCRIPTION:

The Agilent 4100 MP-AES Microwave Plasma Atomic Emission Spectrometer is a compact, bench mounted elemental analyzer for use in the laboratory. It is used for the determination of trace to % levels of elements in a wide range of matrix types. The Agilent 4100 MP-AES delivers:



- Lowest cost of ownership – the Agilent 4100 MP-AES runs unattended without flammable or expensive gas supply, dramatically reducing your operating costs
- High-performance – magnetically excited microwave plasma source provides superior detection limits to flame AA
- Ease of use – application-specific software applets plus plug-and-play hardware ensure any user can set up quickly without method development or alignment, and with minimal training
- Improved laboratory safety – in addition to eliminating flammable and oxidizing gases, the 4100 MP-AES eliminates the need to plumb multiple gases into the laboratory, or manually transport and handle gas cylinders
- Robustness and reliability – ideal for industries such as mining, food and agriculture, chemicals, petrochemicals, and manufacturing, and for remote locations

TECHNICAL DESCRIPTION:

A robust, nitrogen based plasma is used to excite the elements of interest. The resultant emissions are directed through a fast scanning, high resolution optical system to a Peltier cooled solid state CCD detector, allowing for fast detection of elemental concentrations. These instruments include a microwave excitation assembly which features a solid state HV power supply and an industrial-grade, air cooled magnetron operating at 2450 MHz. Plasma power is fixed at 1 kW for ease of operation. Vertically-oriented plasma provides improved matrix handling while end-on or axial viewing provides optimum sensitivity and best detection limits. Fully web-integrated MP Expert software uses Agilent's worksheet concept for ease of use, rapid operator training, and commonality with other Agilent spectroscopy products.

Tier Selection

Final tier assignment is based on overall product score.

- Top Tier
- Second Tier
- Third Tier
- Fourth Tier
- Bottom Tier

RANKINGS

	Biological	Chemical	Radiological
FIELD USE System	N/A	Bottom Tier	N/A
MOBILE Laboratory	N/A	Bottom Tier	N/A
DIAGNOSTIC Laboratory	N/A	Bottom Tier	N/A
ANALYTICAL Laboratory	N/A	Bottom Tier	N/A

Survey Source

Vendor Supplied Information

CONTACT INFORMATION

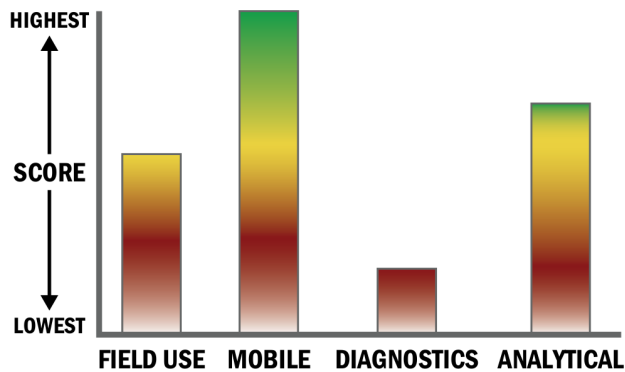
Agilent Technologies, Inc.
 8825 Stanford Blvd. Suite 300
 Columbia, MD 21045
 POC: Beverly Lesko
 443-285-7854
 beverly_lesko@agilent.com

COST

N/A

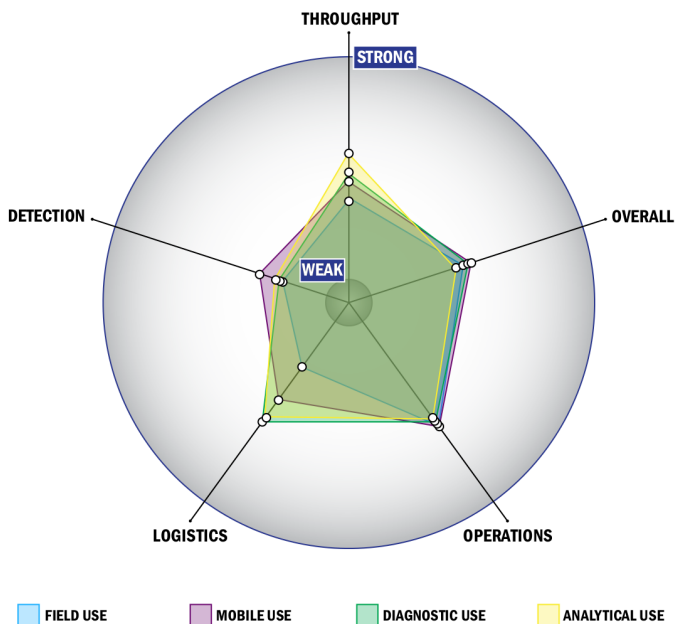
Scoring Analysis

System scores are compared across the four scenarios and ranked from highest to lowest.



Impact Chart

The Impact Chart is a spider graph representing specific categories and designed to give the reader a visual depiction of how a particular system is expected to operate across the four different scenarios. The score for each of the seven categories is presented as the percentage of the total possible score. Higher category scores extend the spokes of a graphic toward the outer edge of the chart. The area graphed for each of the four scenarios relates to how well the system performed in that scenario. Graphics for each of the four scenarios are super-imposed for ease of comparison.



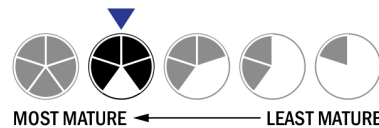
Evaluation Criteria

Throughput:

- Between 2 and 15 minutes for detection
- Multiple samples, multiple tests/sample per run
- 95-32 samples every 2 hours
- The system or device is currently fully automated
- Device or system is intended for multiple detection assays
- 2 solutions, buffer, eluents, and/or reagents
- 5 or more components
- 10-20 minutes is required for setup

Logistics:

- A day of training and technical skills are required
- Approximately the size of a home dishwasher
- More than 50 kg
- Wired connections are available
- System or device has a greater than 220V electrical requirement



Operations:

- Can be used from 25 °C to 37 °C
- Components must be stored at room temperature (27 °C)
- Performance is not influenced by relative humidity
- Between 1 to 3 years shelf life
- Greater than 10 years expected life
- Results can be viewed in real-time
- The system could be adapted to a fully autonomous system with some effort
- The system software is closed and not available for modification
- The system hardware is closed and not available for modification

Detection:

- Not possible for the system to achieve 510K clearance
- Not possible for the system to achieve FDA approval
- Less than 250 µL
- Excellent specificity. System has occasional false alarms under certain conditions (<2%)