



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**Request for
 Quotation**

RFQ NUMBER
 DEP15345

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF
 CHUCK BOWMAN
 304-558-2157

RFQ COPY

TYPE NAME/ADDRESS HERE

AGILENT TECHNOLOGIES INC
 2850 CENTERVILLE ROAD
 WILMINGTON, DE 19808

ENVIRONMENTAL PROTECTION
 DEPARTMENT OF
 OFFICE OF AIR QUALITY
 601 57TH STREET
 CHARLESTON, WV
 25304 304-926-3647

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
02/17/2011				

BID OPENING DATE: 03/17/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		493-04		
<p>INDUCED COUPLED PLASMA-MASS SPECTROMETER</p> <p>THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FOR A PERKIN ELMER NEXION 300X (OR EQUAL) INDUCTIVELY COUPLED PLASMA MASS SPECTROMETER PER THE FOLLOWING SPECIFICATIONS, BID REQUIREMENTS, TERMS & CONDITIONS AND THE ATTACHED BID SCHEDULE.</p> <p>VENDORS BIDDING AN 'OR EQUAL' TO THE MANUFACTURER AND MODEL NUMBER NOTED ABOVE SHOULD IDENTIFY THE MANUFACTURER AND MODEL NUMBER BEING BID AS WELL AS SUBMITTING PERTINENT SPECIFICATION AND PERFORMANCE INFORMATION TO ALLOW THE AGENCY TO SUFFICIENTLY EVALUATE THE PROPOSED INSTRUMENT FOR EQUALITY TO THE SPECIFICATIONS AS ADVERTISED. THE AGENCY RESERVES THE RIGHT TO REQUEST ADDITIONAL INFORMATION FROM ANY VENDOR AT ANY TIME DURING THE EVALUATION PROCESS. FAILURE OF ANY VENDOR TO PROVIDE THE REQUESTED INFORMATION WITHIN THE TIME FRAME REQUESTED MAY RESULT IN THE DISQUALIFICATION OF THE VENDORS BID AND ANY CONSIDERATION FOR AWARD.</p> <p>WARRANTY, DELIVERY, SETUP, AND TRAINING REQUIREMENTS ARE NOTED IN THE ATTACHED SPECIFICATIONS.</p> <p>THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT</p>						

RECEIVED

201 MAR 16 A 9:57

PURCHASING DIVISION
 STATE OF WV

SIGNATURE				TELEPHONE		DATE
TITLE		FEIN	ADDRESS CHANGES TO BE NOTED ABOVE			

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



Agilent Technologies

To: Chuck Bowman
Dept of Administration,
2019 Washington St.East, P.O. Box 50130 ,
Charleston, WV 25305--0130

Ref: RFQ No. DEP15345, Solicitation for Induced Coupled Plasma-Mass Spectrometer

Dear Chuck,

I am excited to submit on behalf of Agilent Technologies, Inc., the enclosed package in response to your RFQ No. DEP15345 for an ICP/MS system for WV Environmental Protection Department of Air Quality. This submission of Agilent 7700x ICP/MS with all listed accessories/services **meets or exceeds ALL specifications** listed in Sections A-M of listed "Specifications for Inductively Coupled Plasma Mass Spectrometer".

Enclosed are following items:

- 1-Completed/signed "Bid Schedule" showing price of ICP/MS and extended one year warranty
- 2-Agilent Quotation listing all items offered by Agilent Technologies on this ICP/MS package.
- 3-Agilent 7700 Brochure and Specifications.
- 4-Copy of Site Preparation Guide for Agilent ICP/MS
- 5-Copy of Power Point Presentation on **Agilent High Matrix Introduction Accessory**
- 6-Copy of this cover letter
- 7- All other necessary bid documents.

Please allow me to point out how this submitted Agilent ICP/MS package exceeds required specifications:

- Inclusion of High Matrix Introduction (HMI) accessory. Please refer to included power point presentation on HMI that explains how this accessory works. Bottom



Agilent Technologies

line, our submitted ICP/MS has ability to analyze up to 3.0 % total dissolved solids WITHOUT any dilution, unlike any other ICP/MS in the market place. This will give WV Dept of Air Quality the ability to analyze samples that it could not do, on any other ICP/MS.

- Warranty and extended warranty that includes yearly PM visit as well as unlimited travel/labor and repair parts needed to keep unit operating, but also other normally not included consumable items such as liners, seals, tubing, assemblies, lamps, and multipliers.
- Unique Agilent ability to easily upgrade/interface ICP/MS to utilize HPLC and GC type instrumentation coupled to Agilent ICP/MS for doing speciation work.
- Superior Application Agilent Support personnel that give total confidence to Agilent ICP/MS end users.
- Two Days On-site training will be provided instead of specified one day on-site training.

Please note that prices include delivery, setup, warranty, and training requirements as listed in RFQ Specifications.

We hope that WV Department of Air Quality will seriously consider this offer and accept it.

If you have any questions, please contact me per my contact information listed below.

Sincerely,

Vic Gill

Agilent Product Specialist

513 520 5861(Cell)/513 677 1010(Fax)/vic.gill@agilent.com(email)



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<p>LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4 (F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.</p> <p>NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: CB-23</p> <p>RFQ. NO.: DEP15345</p> <p>BID OPENING DATE: 03/17/2011</p> <p>BID OPENING TIME: 1:30 PM</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p> <p>302-993-5941</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vro/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as EQUAL to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50106, Charleston, WV 25305-0106
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-7-6.5).



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LINE	QUANTITY	UOF	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
CONTACT PERSON (PLEASE PRINT CLEARLY):						
Mark Fashion 740-363-5475						
***** THIS IS THE END OF RFQ DEP15345 ***** TOTAL:						\$140,532.22

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE: *Sasha Beal* TELEPHONE: 800-227-9770 DATE: 03/14/2011

TITLE: Business Sales Specialist FEIN: 77-0518772 ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

DEP15345
Revised Specifications
Inductively Coupled Plasma Mass Spectrometer

A. General System Specifications:

1. System shall include or be equivalent to, the following: liquid sample introduction system, RF plasma ion source, quadrupole based cell to eliminate spectroscopic interferences using either non-reactive collision gases or pure reaction gases such as ammonia and oxygen, quadrupole ion deflector, simultaneous dual stage discrete dynode detector and a cone interface, all under computer control.
2. Fully automated system startup, shutdown and optimization and computer controlled instrument tuning for optimum performance.
3. Quadrupole shall be able to scan a minimum of 5000 amu/sec to achieve maximum productivity from transient signals when jumping between light masses and high masses.
4. Quadrupole resolution settings are dynamically scanned as each element is analyzed.
5. High mass range shall be at least 238 amu or greater.
6. All analytical system operations from component optimization to methods development to calibration to analysis to reports shall be able to be performed using a single software program.
7. Full system shall use single-phase power and remains in specification as laboratory temperature varies 10 to 35°C at up to 2°C per hour.
8. System shall be able to be sufficiently cooled in laboratory temperatures below 30°C.
9. System shall be fully compliant with US EPA Compendium Method IO-3.5 and Federal Equivalent Method (EQL-0710-192) titled: *Heated Nitric Acid Hot Block Digestion and ICP/MS Analysis For Lead (Pb) On TSP High-Volume Filters*.
10. ICP-MS system shall have a full color plasma view window for useful visuals on the sampler cone, plasma color and injector tip.
11. Unit shall be a bench top design.
12. System should only require minimum periodic maintenance, cleaning or replacement of collision, collision/reaction or universal cell and main filtering quadrupole for the system's lifetime by the user or the manufacturer's service engineers.

B. Sample Introduction System Shall Include:

13. For general sample workload, low flow (0.25 ml/minute) sample introduction system with no o-rings: concentric nebulizer, cyclonic spray chamber, and quartz injector.
14. Waste saving low flow uptake nebulizer, designed to handle user defined applications.
15. Close coupled, three-channel integral peristaltic pump, computer controlled, shall be integrated within the ICP-MS system.
16. Design where components are mounted outside the torch enclosure to eliminate the need for extraneous spray chamber cooling hardware and for easy access of alternate components and accessible from the front of the instrument. To this end the sample introduction components shall be accessible from the front of the instrument.
17. Cassette style torch mount or equivalent, where entire torch and injector assembly can be easily removed.
18. Fully automated one touch X, Y, Z torch alignment.

C. Ion Source and RF Plasma System Shall Include:

19. Computer controlled RF generator operating from 500 to 1600 watts for automatic control of torch ignition, shutdown, and system warm up.
20. Design where the RF Generator and load coil do not require water cooling.
21. The RF Generator which does not require an impedance matching network and providing for adaptation to any change in plasma impedance within 50 nanoseconds.
22. The RF generator which electrically decouples the plasma from the ion optics and allows independent adjustment of the ion optic parameters and the plasma conditions.

D. Plasma Interface Shall Include:

23. A cone design, or equivalent, consisting of at least a sampler and skimmer cone with all cones at ground potential.
24. An extraction lens system, or equivalent, that does not create higher background values for elements such as Li, B, K, Na Ni and Pt.
25. Standard large orifice sampling and skimmer cones .
26. Design with rapid mounting and removal cone design, easily accessible from the front of the instrument.

27. A quadrupole ion deflector for complete separation of ions from photons and neutrals into the cell. The cell and mass analyzing quadrupole shall be completely maintenance free.

E. Quadrupole Mass Analyzer Assembly Shall Meet the Following:

28. The quadrupole mass filter shall utilize gold metalized ceramic rod technology or equivalent, for best stability and operate at 2.5 MHz for exceptional resolution and abundance sensitivity.
29. The quadrupole shall:
- Be able to scan up to 5000 amu per second
 - Operate with dwell times as short as 0.1 ms
 - Operate with Peak hop settling time < 0.2 ms regardless of mass change
 - Operate with peak hop slew speeds up to 1.6M amu/sec
30. Stability of the quadrupole mass calibration and resolution shall be maintained by having critical parts of the quadrupole power supply temperature controlled. In this configuration, the quadrupole power supply will be unaffected by fluctuations in laboratory temperature.
31. The analyzer quadrupole shall have the ability to discretely control the resolution of selected mass regions dynamically, without affecting the overall nominal resolution of the system.

F. Ion Detector Assembly Shall Meet the Following:

32. The ion detector shall be a simultaneous dual-stage discrete dynode electron multiplier, and offer protection against overload in both pulse counting and analog modes. The detector shall:
- Provide a dead time < 35 ns
 - Provide switching between pulse or analog in < 0.2 ms
 - Provide transient data acquisition up to 5000 data points / sec
 - Provide dynamic range to 1.5 GHz ($1.5 \text{ e}^9 \text{ cps}$)
33. The dual-stage detector assembly shall come standard with the system.

G. Vacuum System Shall Meet the Following:

34. The vacuum system shall utilize a turbo molecular pump to maintain vacuum at 1e^{-6} Torr (or lower), includes vacuum chamber isolation valve which automatically closes as plasma is extinguished or with system faults. The pumping system shall have enough capacity to reach operating vacuum from atmosphere in less than 20 minutes.
35. In the event of vacuum failure, the entire vacuum system shall be automatically back-filled by inert gas to preserve the cleanliness of the system.
36. Turbo molecular vacuum pump shall be purged by an inert gas during operation to prevent damage by reactive gases and/or corrosive vapors such as those generated by the analysis of phosphoric acid.

37. Computer controlled roughing pump shall utilize ultra-long life PFPE (Fomblin) fluid and automatically shift into energy saving mode when the plasma is off.

H. System Personal Computer Controller and Operating System Shall Meet the Following Minimum Requirements:

38. New desktop PC with adequate processor to run system software and desktop applications including virus protection, and networking software;
39. Windows 7 Operating System;
40. 4 Gigabytes Random Access Memory (RAM);
41. 320 gigabyte hard drive;
42. DVD reader and writer;
43. Keyboard & optical USB mouse;
44. Ethernet Port, minimum of 4 USB ports;
45. 19 inch color LCD monitor;
46. Ink jet color printer;
47. All necessary computer/printer cables.

I. System Software Shall Include:

48. Routine Maintenance Alerts; scheduled user defined alerts for continued operations.
49. Method Development wizards or equivalent.
50. Pre-set methods
51. Automated quality control checking features.
52. The system software shall support the following calibration curve fit modes for quantitative analysis:
 - Linear least squares.
 - Weighted linear least squares.
 - Linear forced-through-zero least squares.
 - Method of standard additions (Matrix Matched calibration)
 - Additions calibration.
53. Real time graphics with ability to display transient and continuous signal profiles.

54. Quantitative analysis including external calibration, additions (matrix matched) calibrations, method of standard additions, isotope ratios and isotope dilution's and semi quantitative analysis.
55. All analytical raw data shall be retained and stored on hard disk.
56. The quadrupole shall be able to be tuned or mass calibrated on a minimum of 5 elements (Be, Co, In, Mg, Pb), providing a printed mass calibration report with all elements.
57. QC protocol limits on measured values, allowing the analyst to define when and how an action is taken, and to specify a second QC action for automatic operation in the event that the first action fails.
58. On-line help with quick steps to reference entire instrument user manual.
59. Data reprocessing on stored data without re-running samples for changes of calibration points, internal standard points or curve fit mode.
60. Computer controlled automatic selection of cell gas when multiple gases or mixed mode are specified within a single method.
61. Computer controlled automated optimization of cell gas flow.
62. System shall be capable of supporting a syringe-pump based auto dilution system.
63. The software shall support auto dilutions by both a global dilution factor and serial dilutions for samples out of range.
64. All software shall be pre-installed on the PC and shall also include an installation disk(s).

J. Auto Sampler Options Shall Meet the Following:

65. The system shall include a random access auto sampler capable of holding 150 or more 15 mL sample vessels.
66. The system shall be capable of being controlled with the instrument software.

K. Tools, Consumables and Manuals

67. System shall come with all tools necessary for service by operator.
68. System shall come with a kit containing a typical one year's supply of consumables.
69. System shall include one complete printed manual and one complete manual on optical media.

L. Warranty

70. System shall come with a minimum one (1) year manufacturer's warranty that includes parts and labor. Quote shall include prices for a one year service contract that will take effect after the one year warranty period. The service contract shall include one preventative maintenance visit by the company service technician.

M. Shipping, Setup and Training

71. Price shall include all shipping costs to the Guthrie laboratory, unloading, and set up of the instrument at Guthrie and one day of training on the operation of the instrument and software at the Guthrie Lab. The vendor shall also offer optional hands-on training at the vendors' facility location within 90 days after installation of the unit.

**Guthrie Lab
4900 Brenda Lane, Bldg.14
Charleston, WV 25312-9307**

**Bid Schedule
DEP15345**

Company Name: AGILENT TECHNOLOGIES INC

Address: 2850 CENTERVILLE ROAD

WILMINGTON, DE 19808

The DEP reserves the right to request additional information and supporting documentation regarding unit prices when the unit price appears to be unreasonable.

ITEM NO.	* QUANTITY	DESCRIPTION	EA	TOTAL
1.0	1	Inductively Coupled Plasma Mass Spectrometer		\$ 128,820.22
2.0	1	Extended Warranty, One Year		\$ 11,712.00
TOTAL				\$ 140,532.22

If bidding an "or equal" to the basis of the specification, please indicate the manufacturer and model number in the space provided below:

Signature: *Sandra Beaf*

Date: 03/14/2011



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 2850 Centerville Rd
 Wilmington, DE 19808

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				ADDENDUM NO.1		
				ADDENDUM ISSUED FOR THE INDUCED COUPLED PLASMA-MASS SPECTROMETER TO DISTRIBUTE THE FOLLOWING REVISED SPECIFICATIONS. PLEASE REPLACE THE ORIGINAL SIX (6) PAGES OF SPECIFICATIONS WITH THE ATTACHED SIX (6) PAGES.		
				BID OPENING DATE AND TIME ARE EXTENDED FROM 03/17/2011 TO 03/23/2011 AT 1:30 PM.		
				***** NO OTHER CHANGES *****		
0001	1	EA		493-04		
				INDUCED COUPLED PLASMA-MASS SPECTROMETER		
				***** THIS IS THE END OF RFQ DEP15345 ***** TOTAL:		

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 14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
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- I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

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Agilent Technologies

Quotation

Chuck Bowman
 State of West Virginia
 Department of Environmental Protection
 Office of Air Quality
 601 57th St
 Charleston WV 25304

Quote No.	Create Date	Delivery Time	Page
1052857	03/14/2011	3 Weeks	1 of 8
Contact	Phone no.	Valid to	
Mark Fashian	740-369-5475	05/13/2011	
To place an order: Call 1-800-227-9770 Option 1 For Instruments Fax : 302-633-6953 For Consumables Fax : 302-633-8901 Email : LSCAinstrumentsales@agilent.com For additional instructions, see last page			

State of West Virginia DEP15345 03-17-2011

Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
G3281A Agilent 7700x ICP-MS. ICP-MS mainframe with MicroMist nebulizer, Ni interface and ORS3 with He cell gas line. Includes installation and user familiarization.	1.000 EA	160,549.00 USD	64,219.60-	96,329.40
With the following configuration:				
Ship-to Country : USA				
3m Rotary pump hose	1 EA	439.00 USD	175.60-	263.40
H2 cell gas line	1 EA	10,357.00 USD	4,142.80-	6,214.20
Installation (44K)				
Familiarization at Installation (44L)				
Item Total				102,807.00
Special discount of 40.00 % is applied.				



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Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
G7211A Agilent MassHunter Workstation for 7700. English (or Japanese, Chinese) version for Windows 7. Comprises PC, monitor, printer, Windows 7, Excel 2010, ICP-MS MassHunter software (Full version) and Manuals. With the following configuration: Ship-to Country : USA	1.000 EA	12,695.00 USD	5,078.00-	7,617.00
Installation (44K) 1 Year SW Update/Phone Assist (44W)	1 EA	507.00 USD	202.80-	304.20
Item Total				7,921.20
Special discount of 40.00 % is applied.				
G3286A ASX-500 Series Autosampler - model ASX-520 With the following configuration: Ship-to Country : USA Installation (44K) Familiarization at Installation (44L)	1.000 EA	8,883.00 USD	3,553.20-	5,329.80
Item Total				5,329.80
Special discount of 40.00 % is applied.				



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Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
G3143D MassHunter Intel. Seq. SW for 7700/7500	1.000 EA	1,973.00 USD	789.20-	1,183.80
With the following configuration: Ship-to Country : USA				
Installation (44K)	1 EA	1,469.00 USD	587.60-	881.40
Familiarization at Installation (44L)	1 EA	4,864.00 USD	1,945.60-	2,918.40
Item Total				4,983.60
Special discount of 40.00 % is applied.				
G1879B Heat exchanger PolyScience Model 3370 Air Cooled Recirculator	1.000 EA	1,522.00 USD	608.80-	913.20
With the following configuration: Ship-to Country : USA				
Installation (44K)	1 EA	211.00 USD	84.40-	126.60
Familiarization at Installation (44L)	1 EA	141.00 USD	56.40-	84.60
Item Total				1,124.40
Special discount of 40.00 % is applied.				



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Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
G3269A Gas Purification kit for ORS	1.000 EA	1,176.00 USD	470.40-	705.60
		Item Total		705.60
Special discount of 40.00 % is applied.				
5185-5820 Blue screw caps,PTFE/red sil septa,500pk	1.000 PK	93.36 USD	37.34-	56.02
		Item Total		56.02
Special discount of 40.00 % is applied.				
5188-6564 ICP-MS Stock Tuning Solution Li, Y,Ce,Ti and Co;100 mL, 10mg/L; matrix =2% HNO	1.000 EA	140.00 USD	56.00-	84.00
		Item Total		84.00
Special discount of 40.00 % is applied.				

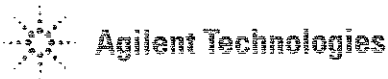


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Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
5188-6524 PA tuning solution set 2 bottles of 100mL	1.000 EA	672.00 USD	268.80-	403.20
		Item Total		403.20
Special discount of 40.00 % is applied.				
G3280-67004 Comprehensive spares for 7700x for 7700 ICP-MS	1.000 EA	6,776.00 USD	2,710.40-	4,065.60
		Item Total		4,065.60
Special discount of 40.00 % is applied.				
5183-4644 2 Stage Regulator, brass, 125psi max, CGA580	1.000 EA	306.00 USD	122.40-	183.60
		Item Total		183.60
Special discount of 40.00 % is applied.				



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Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
0101-1400 Regulator for Argon Gas, stainless steel	1.000 EA	1,621.00 USD	648.40-	972.60
Item Total				972.60
Special discount of 40.00 % is applied.				
5183-4642 2 Stage Reglattr, brass, 125psi max, CGA350	1.000 EA	306.00 USD	122.40-	183.60
Item Total				183.60
Special discount of 40.00 % is applied.				
Gross Amount				: \$ 214,700.36
Total Discount				: \$ 85,880.14
Total				: \$ 128,820.22



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Contact	Phone no.	Valid to	
Mark Fashion	740-369-5475	05/13/2011	
<p>To place an order: Call 1-800-227-9770 Option 1 For Instruments Fax : 302-633-8953 For Consumables Fax : 302-633-8901 Email : LSCAinstrumentsales@agilent.com For additional instructions, see last page</p>			

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- 1) Visit <http://www.agilent.com/chem/supplies> to place online orders using a purchase order or credit card.
- 2) Call 1-800-227-9770 (option 1) any weekday between 8am and 8 pm Eastern time in the U.S., Canada & Puerto Rico.
- 3) To place an order for Consumables, please fax the order to 302-633-8901.
To place an instrument and/or software order, please fax the order to 302-633-8953.
- 4) Or you can mail your order to:
Agilent Technologies
North American Customer Contact Center
2850 Centerville Road BU3-2
Wilmington, DE 19808-1610

To place an order, the following information is required:

- Purchase order number or credit card, delivery date, ship to, invoice to, end user, and quote number.
- GSA customers please provide GSA contract #.

EXCLUSIVE OFFERS FOR NEW INSTRUMENT CUSTOMERS, go to www.agilent.com/chem/exclusiveoffers

TO CHECK THE STATUS OF AN ORDER:

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- 2) Call 1-800-227-9770 (option 1) any weekday between 8 am and 8 pm Eastern time, in the U.S., Canada & Puerto Rico. You will need to know the purchase order or credit card number the order was placed on.

FINANCING AND LEASING - A wide range of options are available from Agilent's preferred financing partner, Leasing Group Inc. (LGI).

For more information or to discuss how monthly payments could suit your operational or budgetary requirements, contact your Agilent Account Manager or contact LGI at 800-944-1370.

TERMS AND CONDITIONS:

- Pricing: Web prices are provided only for the U.S. in U.S.dollars. All phone prices are in local currency and for end use. Applicable local taxes are applied.
- All Sales Tax is subject to change at the time of order.
- Shipping and Handling Charges: Orders with a value less than \$2000 or those requiring special services such as overnight delivery may be subject to additional shipping & handling fees. Some of these charges may be avoided by ordering via the Web
- Payment Terms: Net 30 days from invoice date, subject to credit approval.

* Quotation Validity: This quotation is valid for 60 days unless otherwise indicated.

* Warranty period for instrumentation is 1 year. The Warranty period for columns and consumables is 90 days.

It is Agilent Technologies intent to ship product at the earliest available date unless specified otherwise.

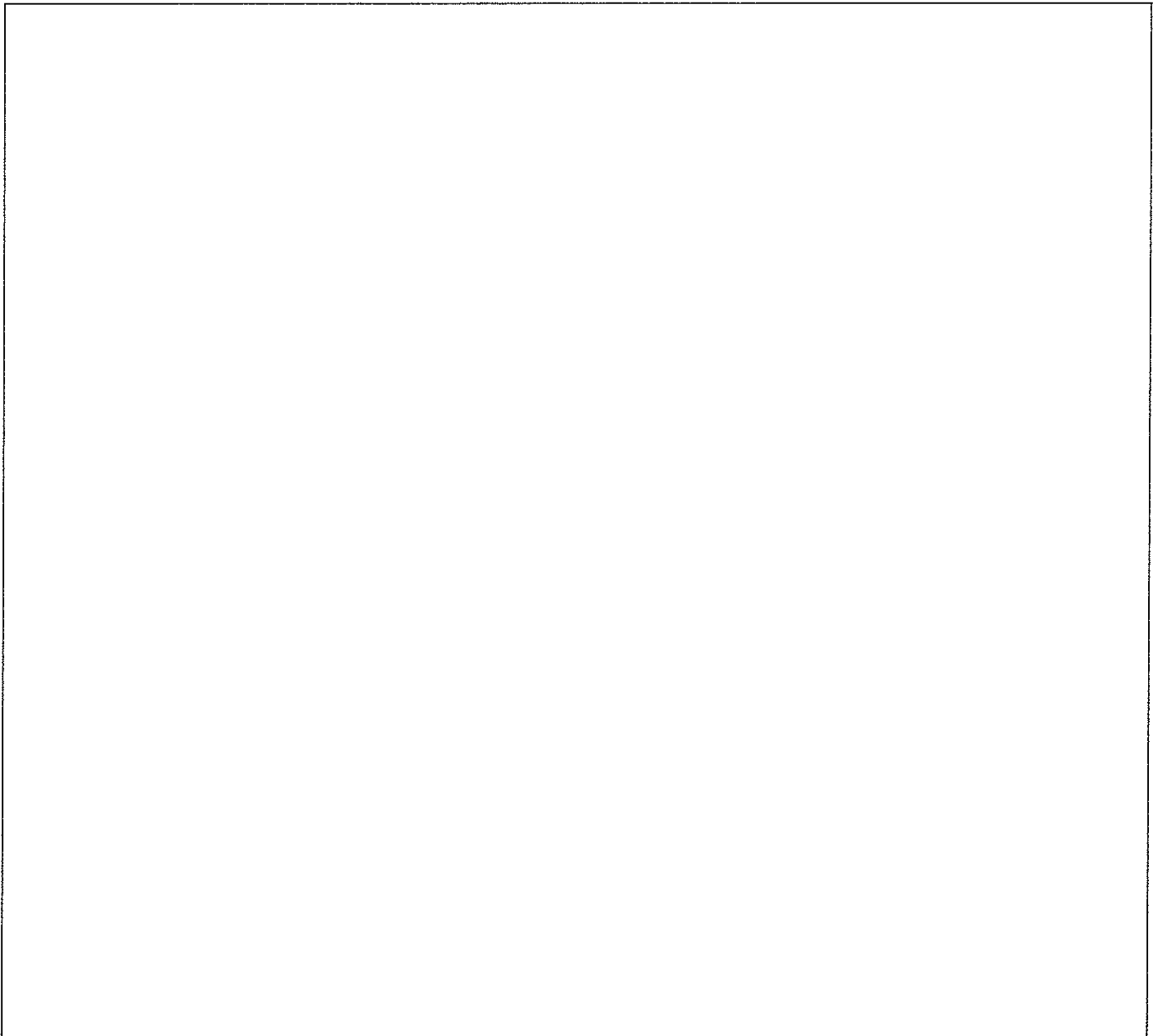
The sale of standard Products and Services referenced in this quotation is subject to the then current version of Agilent's Terms of Sale, and any LSCA Supplemental Terms or other applicable terms referenced herein. If any Products or Services are manufactured, configured or adapted to meet Customer's requirements, the sale of all Products and Services referenced in this quotation is subject to the then current version of Agilent's Terms of Sale for Custom Products and any LSCA Supplemental Terms or other applicable terms referenced herein. A copy of Agilent's Terms of Sale, Agilent's Terms of Sale for Custom Products and the LSCA Supplemental Terms is either attached or has been previously provided to you. Please contact us if you have not received a copy or require an additional copy. If you have a separate agreement in effect with Agilent covering the sale of Products and Services referenced in this quotation, the terms of that agreement will apply to those Products and Services. Agilent expressly objects to any different or additional terms in your purchase/sales order documentation, unless agreed to in writing by Agilent. Product and Service availability dates are estimated at the time of the quotation. Actual delivery dates or delivery windows will be specified at the time Agilent acknowledges and accepts your purchase order. The above conditions shall apply to the fullest extent permitted by the law. You may have other statutory or legal rights available. Commodities, technology or software exported from the United States of America ("U.S.") or from other exporting countries will be subject to the U.S. Export Administration Regulations and all exporting countries' export laws and regulations. Diversion contrary to U.S. law and the applicable export laws and regulations is prohibited.



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Contact	Phone no.	Valid to	
Mark Fashion	740-369-5475	05/13/2011	
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State of West Virginia DEP15345 03-17-2011

Product/Description	Qty/Unit	Unit List Price	Discount Amount	Extended Net Price
SYS-IM-7700 ICPMS 7700 System	1.000 EA			
With the following configuration: Ship-to Country : USA				
Standard PM	1 EA	4,284.00 USD	856.80-	3,427.20
Advantage Bronze Gov't/Academia 2yr	1 EA	10,356.00 USD	2,071.20-	8,284.80
Item Total				11,712.00
Special discount of 20.00 % is applied.				
				Gross Amount : \$ 14,640.00
				Total Discount : \$ 2,928.00
				Total : \$ 11,712.00



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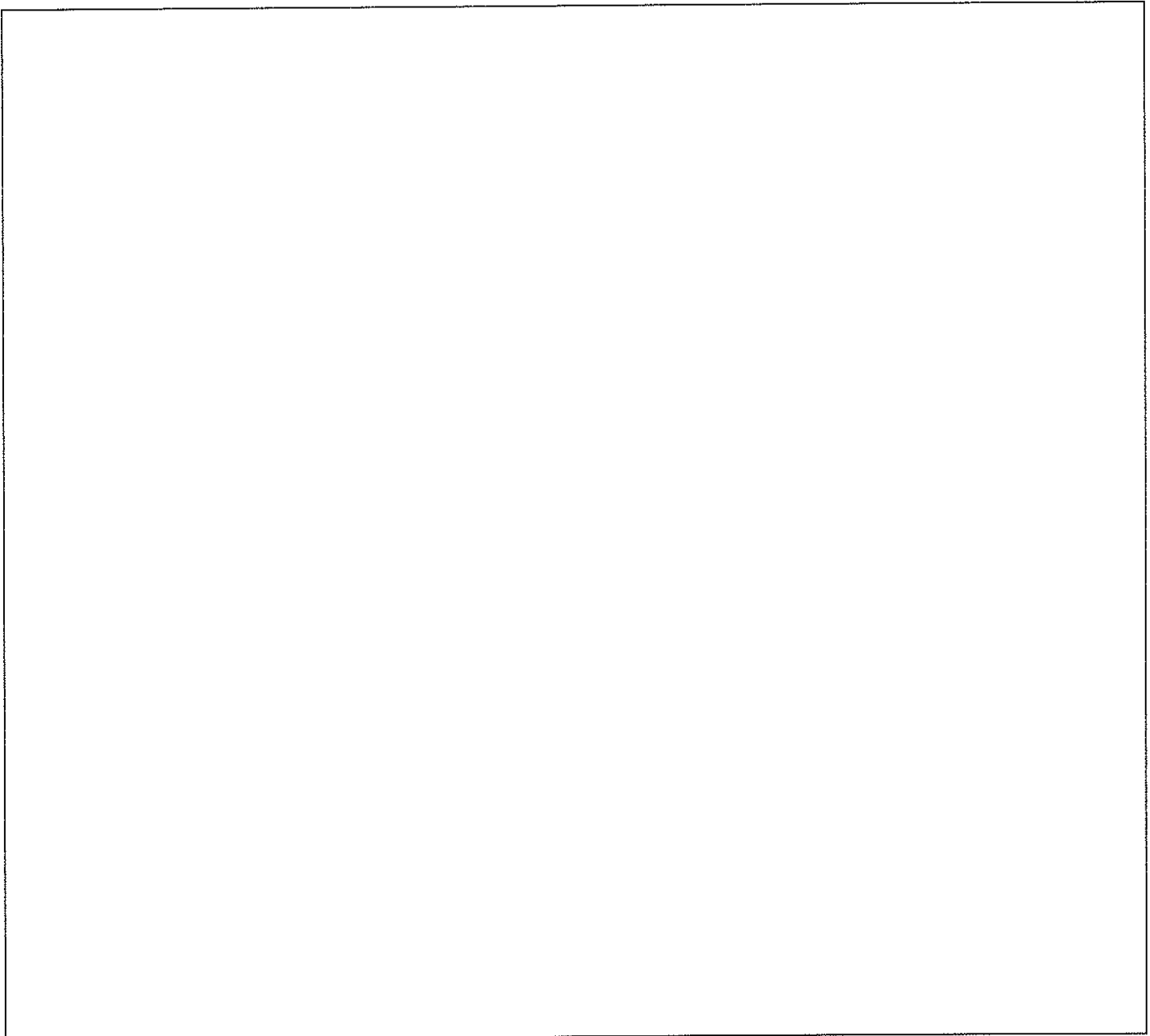


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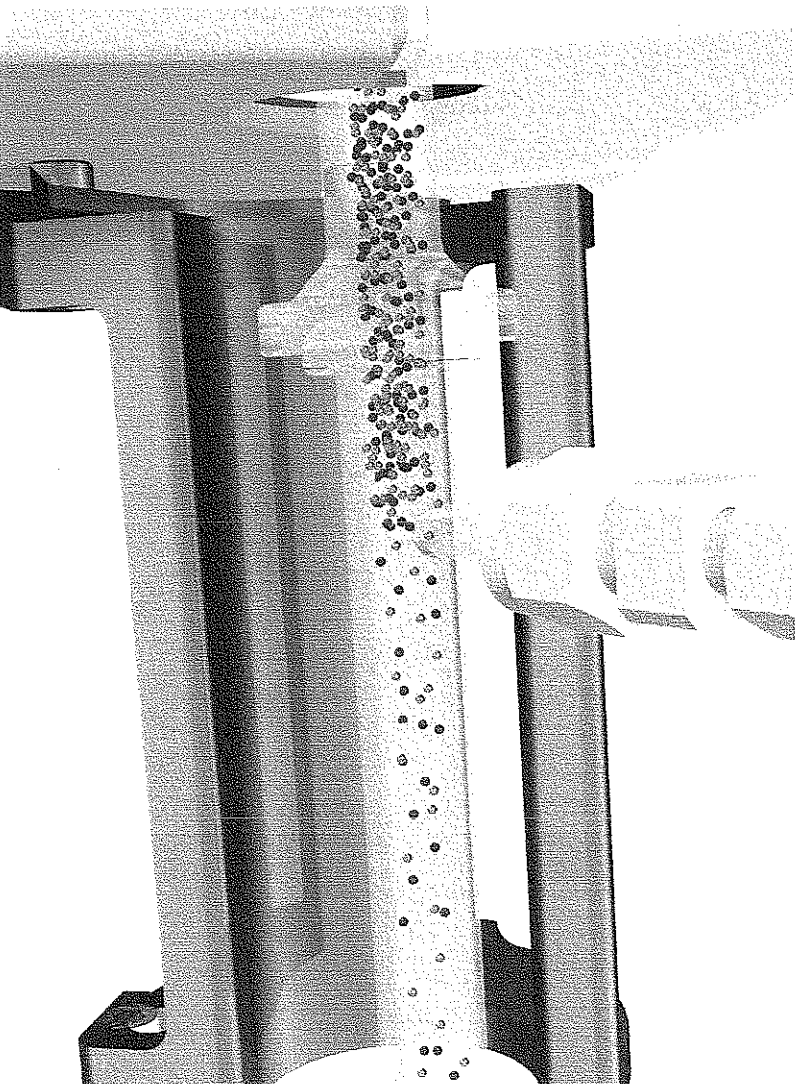
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High Matrix Introduction (HMI) – How it Works

Agilent's patented HMI is a sample dilution technique but, uniquely, it dilutes the sample in the gas state, using aerosol dilution.



This removes the main problems of liquid sample dilution:

- Time
- Reagents
- Errors
- Contamination

HMI – Automatic Setup of Plasma Conditions

The screenshot displays the Agilent HMI software interface. The main window shows a 'Sensitivity-Oxide ratio Profile' graph with the following data points:

Oxide Ratio (T56/140)	Sensitivity (T140)
1.00E+003	8.57E+002
2.59E+004	2.59E+004

Below the graph is a table with the following parameters:

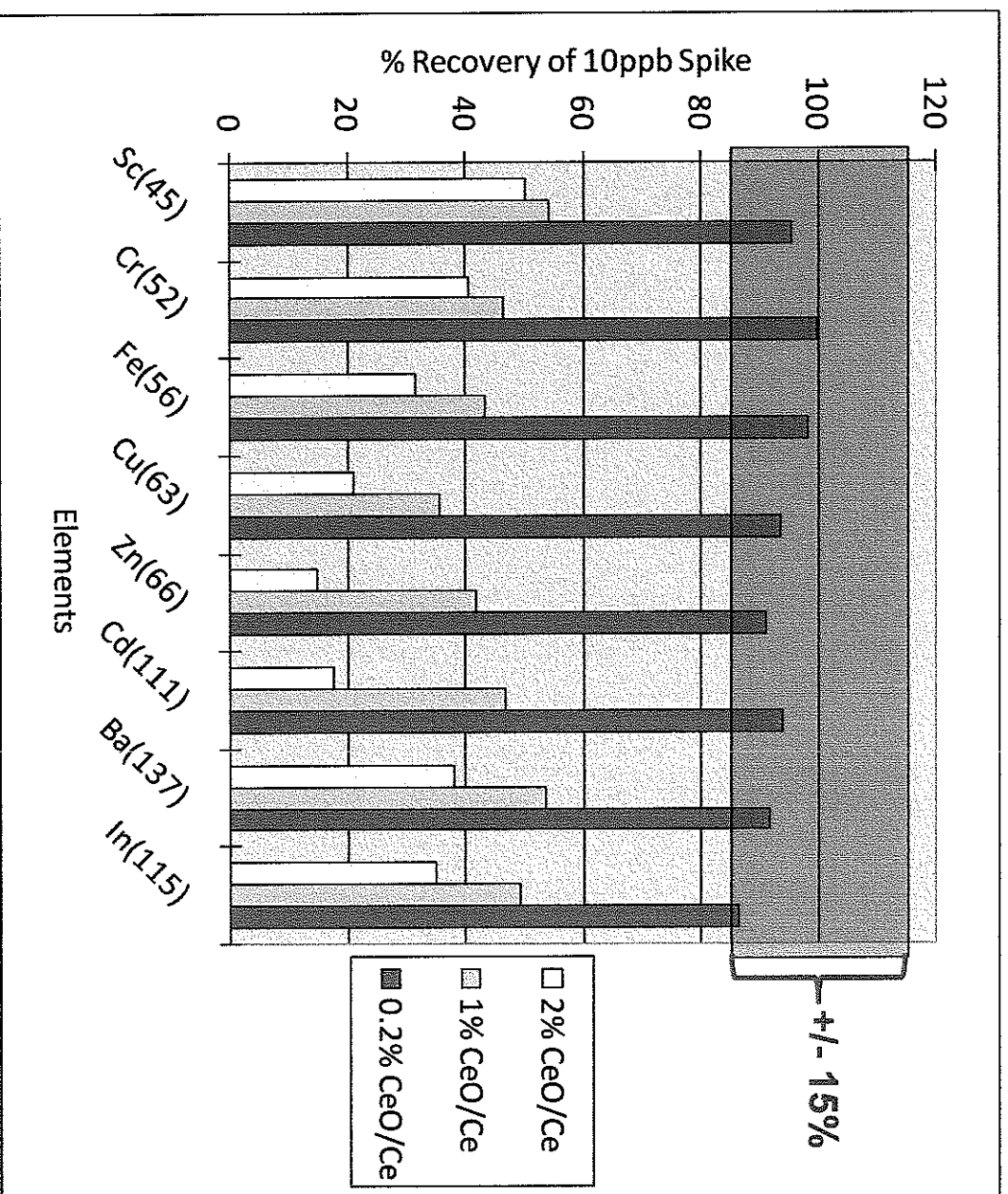
Parameter	Value
V1-10%	0.688
Integration Tim	0.100 sec
Acquisition Tim	0.4 min

The schematic diagram on the right shows the following components: Mainframe, Autosampler(AS), Sample Introduction (Autosampler Type: ASX-520, Autosampler Rack: 21), Plasma (Ignition Mode: Aqueous Solution), Ion Optics, Collision/Reaction Cell, and Detector.

Principle of HMI is simple
– hardware comprises
extra gas line to dilute
aerosol.

However, requires very
sophisticated software
algorithm to map plasma
conditions, and very
reproducible hardware to
allow conditions to be
recalled consistently

HMI – Effect on Matrix Suppression



HMI dilutes aerosol density & water vapour, as well as sample matrix.

Gives much higher plasma temp; much better matrix decomposition. Matrix suppression is almost eliminated.

Plot shows % recovery in undiluted seawater vs aqueous calibrations.

With HMI, ALL results are within +/- 15% recovery (shaded area)

Without HMI, ALL results are below 60% recovery

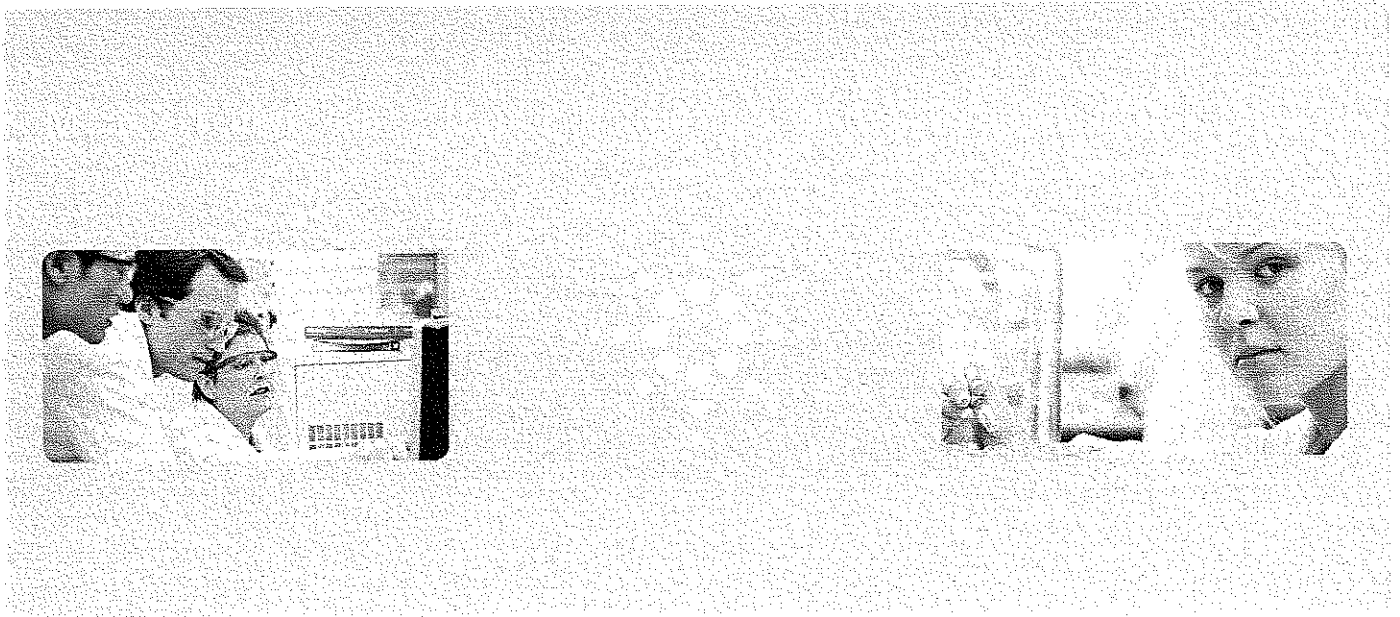
Other Benefits of HMI

HMI increases sample throughput

- ◆ Reduces sample prep time (no manual or auto-dilution)
- ◆ Reduces number of over-range samples which have to be repeated

HMI decreases routine maintenance

- ◆ HMI dilution reduces the matrix loading on the plasma
- ◆ This decreases the amount of matrix which reaches the interface cones and so less maintenance (cone cleaning) is required
- ◆ Lower matrix loading also improves long-term stability, which decreases the need to run repeated calibrations
 - Further increases sample throughput



Agilent Preventive Maintenance Services

Maintain peak performance and extend your instruments' useful life

Our measure is your success.

products | applications | software | services



Agilent Technologies



Reduce
downtime
and repair costs
with Agilent
Preventive
Maintenance
Services

You already know that an instrument failure is serious business. It wastes time, sample, effort and money. Worst of all, it throws your lab off schedule – hurting your overall productivity, causing you to miss important deadlines, and even calling your lab's overall reliability into question.

But you may not know that 60% of instrument failure is caused not by functional breakdown, but by a lack of preventive maintenance.* That's why a regularly scheduled program of preventive maintenance is so important to your success.

Implement a preventive maintenance program and you can enhance the overall operation of your lab in the following ways:

- **Gain greater control** over instrument uptime
- **Save money** by reducing expensive unscheduled downtime and repairs
- **Enhance sensitivity and precision** to increase the accuracy of your results
- **Comply** with regulatory requirements, or meet quality accreditation standards
- **Extend** the useful life of your instruments

*"I can look at the log book
and see that every instrument
that failed did not have a
PM recently."*

— Contract Testing Lab

Keep your instruments running at peak reliability

When you look at your array of high precision laboratory instruments, you may feel confident that each one is finely tuned – working at peak performance and providing reliable results. But without a program of regular preventive maintenance you can't ensure this confidence will last.

Checking your instruments and replacing parts and supplies before trouble arises provides you with a double benefit. First, you avoid expensive repairs. Second, you get greater accuracy and reliability while ensuring safer operations.

It takes both training and experience to consistently uncover and avert the problems that can bring your systems to a halt and hurt your lab's productivity. That's why Agilent Preventive Maintenance Services are performed by highly skilled and certified service engineers. Count on your engineer to:

- Perform expert cleaning, adjustments, lubrication and inspection according to factory-recommended protocols
- Provide consistent service worldwide by following a predefined checklist of preventive maintenance procedures
- Replace all parts and supplies with genuine Agilent products
- Minimize downtime and reduce the impact on lab operations by scheduling maintenance in advance

Regular preventive maintenance is a cost-effective way to keep your systems in peak operating condition. All Agilent preventive maintenance services include travel, labor, and supplies. We have a fixed price for complete factory-recommended maintenance of your systems.

Choose the Agilent Preventive Maintenance plan that's right for you

The frequency and type of preventive maintenance you need depends upon a wide range of factors. That's why Agilent offers a range of service options, which take into consideration various factors such as:

- Instrument type, age and usage
- Application run time
- Regulatory requirements

Standard Preventive Maintenance

This service follows predefined maintenance protocols and checklists to optimize the performance of your systems. It provides:

- System inspection and cleaning
- Proactive replacement of specific wear-and-tear parts
- Ion source cleaning for mass spectrometer systems

Enhanced Preventive Maintenance

Ideal for GCs equipped with headspace samplers or LC systems that work with harsh solvents or see heavy use, this service provides an extra level of protection. Service includes all standard preventive maintenance, plus:

- Proactive replacement of a larger number of parts in the sample pathway of GC headspace samplers and LC systems

Interim Preventive Maintenance for Mass Spectrometer Systems

Heavier than average use and specific sample types may cause the need for interim service between annual maintenance, which includes:

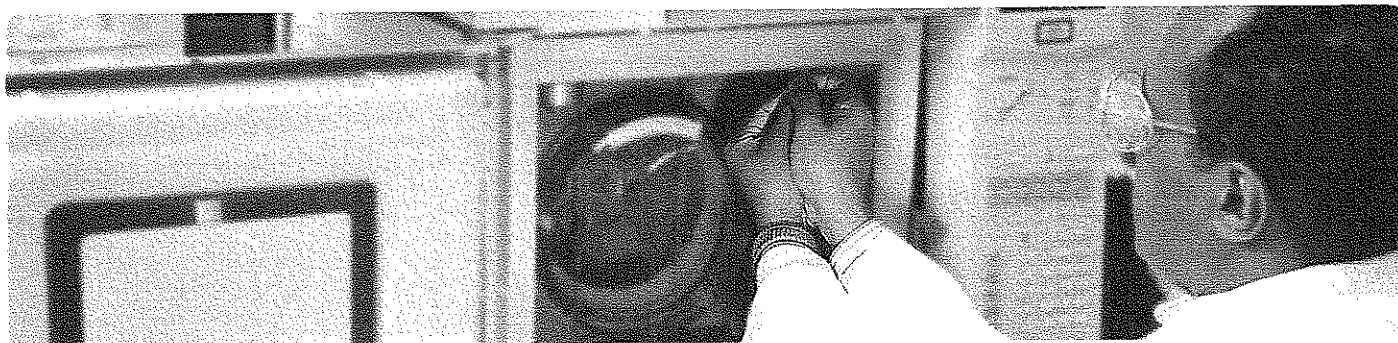
- Mass spec system inspection
- Vacuum system check
- Replacement of pump oil

Mass Spectrometer Ion Source Cleaning

Professional cleaning of the mass spec ion source restores system sensitivity.

"I prefer to let my operators focus on what we do best and let Agilent focus on what they do best. We are in the business of making pharmaceuticals, not maintaining and repairing equipment."

— Multinational Pharmaceutical Manufacturer



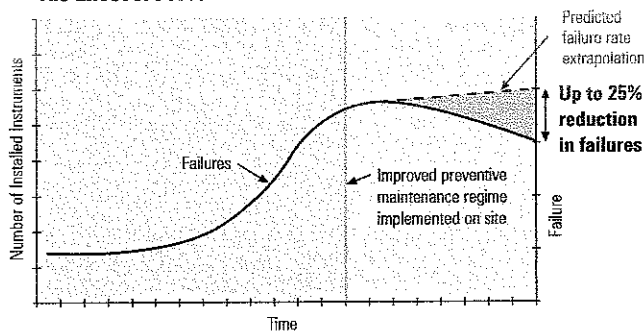
There's no better way to invest in your lab's overall productivity than to implement a routine preventive maintenance program. Studies performed by Agilent using system data from around the world show that failure rates increase as a lab grows and adds new equipment. This occurs because most modern instruments experience a higher incidence of failure within the first one to two years of instrument life. This failure rate flattens as equipment ages. But Agilent studies also show that the **failure rate decreases by up to 25% for all mechanical systems** when a laboratory implements a preventive maintenance program.

Put Agilent's 40 years of experience to work in your lab

Agilent has been manufacturing – and maintaining instruments to the highest standards for over 40 years. So why trust your systems to anyone else?

Learn more about how Agilent Preventive Maintenance Services can help you reduce mechanical failures by up to 25% and keep your lab running at peak performance at www.agilent.com/chem/service

The Effect of Preventive Maintenance



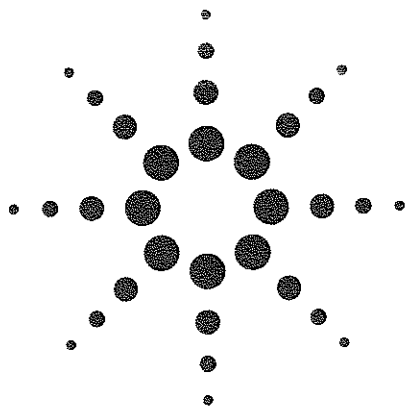
"To be frank, Agilent is the best at servicing their equipment, and the one to measure others against."

Global Pharmaceutical Company

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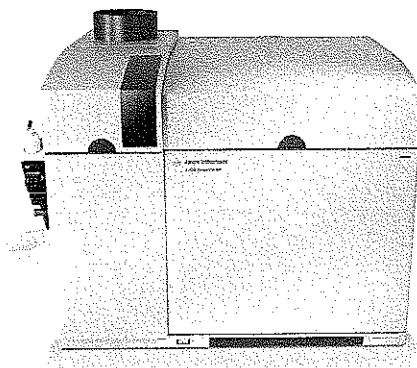
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Agilent 7700 Series ICP-MS

Extraordinary Design.
Unparalleled Performance.

Specifications



Agilent 7700 Series ICP-MS Hardware and Performance Specifications

The 7700 Series quadrupole ICP-MS from Agilent Technologies provides an unmatched combination of high performance and simplicity of operation, redefining the benchmark for ICP-MS.

Comprising three models, the powerful, flexible workhorse 7700x, the semiconductor-configured 7700s, and the simple, streamlined 7700e, the 7700 Series provides unparalleled performance, in the smallest ICP-MS ever manufactured.

7700 Series Technical and Performance Highlights Include:

- New fast frequency-matching RF generator
- New design ion lens, providing increased sensitivity and reduced background
- Unique, 3rd generation cell design (ORS³) which delivers significantly improved interference removal in helium (He) cell gas mode
- New MassHunter Workstation software provides a common platform with other Agilent MS systems, simplifying cross-platform training.



Agilent Technologies

7700 Series Overview

Unparalleled performance

All three 7700 Series models benefit from enhanced plasma stability and tolerance of organic solvents, as a result of the new fast frequency-matching RF generator.

The 7700 Series features higher sensitivity and lower random background than the 7500 Series, due to a redesigned ion lens.

The new ORS³ provides enhanced interference removal capability in He mode resulting in reliable quantification at lower detection limits, even in complex matrices.

Enhanced ease of use

One click Plasma optimization using pre-set conditions is provided on all three models, giving simpler, more reproducible setup from day to day and between operators. Agilent's patented high vacuum maintenance (HVM) capability is standard on the 7700x model, and pre-set plasma conditions for both hot and cool plasma operation are provided with the 7700s.

Expert Auto tuning delivers faster, more consistent tuning, giving reproducible instrument performance, even with multiple operators. Routine maintenance is expedited by one-touch torch positioning and tool-free removal and refitting of the sampling cone.

Reduced operating costs

Lower exhaust flow rate (especially important in clean rooms) reduces installation and operation costs.

The 7700 uses MassHunter based software, which is consistent across all common ICP-MS systems, thereby simplifying and reducing the cost of staff training.

Significantly smaller footprint

At only 730 mm wide and weighing 115 kg, the 7700 is easily the world's smallest ICP-MS – saving on valuable bench space, and simplifying lab planning. The footprint of the 7700 is >30% smaller than any other ICP-MS, but performance and usability have been improved. Despite the small cabinet size, the ion path length is actually longer than the 7500, and user maintenance and service access is improved.

Reduced environmental impact

The 7700 mainframe is extraordinarily light for an ICP-MS (only 130 kg when packed for air-freight), so CO₂ emissions from transportation are reduced.

Stainless steel panels are used throughout the cabinet, reducing the amount of paint required.

Agilent is committed to eliminating toxic compounds from

electronic components, promoting recyclability of plastics, and using recycled packing materials.

Model Selection Guide

Agilent 7700x – high-performance, flexible mainframe for reliable high-throughput analysis of complex samples.

The 7700x features the ORS³ with a single cell gas line for He collision mode, used for most elements in most sample types. He mode simplifies method development and routine analysis by using consistent cell conditions for all interfered elements, regardless of the sample matrix.

He mode performance is improved significantly with the ORS³, especially for problematic elements such as P, S, Se, and Fe. This means that reaction gases are no longer needed for common applications outside the semiconductor industry. Eliminating the complexity and uncertainty associated with using reaction gases greatly simplifies operation and improves data quality.

HVM is standard on the 7700x, reducing sample preparation time and costs permitting the direct analysis of low level total dissolved solids (TDS) samples.

The combination of He mode, HVM and pre-set tuning conditions simplifies operation while delivering consistently accurate results and superior performance in routine applications.

Agilent 7700s – unparalleled semiconductor analysis.

The Agilent 7700s mainframe provides ultra-high performance, for semiconductor analysis and clean-room operation. It is unique in offering the ultimate in detection power and interference removal capability, with all industry standard detection methods (ICP-MS, ICP-AES, reaction modes, AAS and plasma), provided in a single instrument.

Additional flexibility is provided with a H₂ reaction gas line, and a 5th carrier gas line. The extra carrier gas line is used for Ar/O₂ gas addition for organic solvent analysis, or He carrier gas for laser ablation.

The 7700s also uses pre-set plasma conditions and autotuning to simplify operation for all typical semiconductor applications.

Agilent 7700e – standardized for routine analysis.

The new Agilent 7700e offers a simplified user interface and standardized hardware configuration for many common applications. It includes the ORS³ with He cell gas line, and core software functionality for a highly automated system, which is

An upgrade path ensures that the 7700e can address advanced applications, should the need arise.

Specifications

Sample Introduction System

The standard sample introduction system includes an efficient, low-flow concentric nebulizer, a temperature-controlled spray chamber and a high precision, 10-roller peristaltic pump. All components are optimized for high throughput routine analyses of samples with TDS up to 0.2% (2000 ppm).

Nebulizer

Low flow concentric nebulizers (glass on the 7700x and 7700e and PFA fluoropolymer on the 7700s) are standard and operate at ~ 0.2 mL/min for reduced sample consumption and minimized matrix effects.

Spray Chamber: Quartz, low-volume, Scott-type double-pass design provides improved removal of large aerosol droplets, compared to cyclonic or impactor-based designs. Standard Peltier-cooling provides stable operation and eliminates the need for a separate external cooling water supply.

Temperature range: 10 to 170 °C with instrument cooling water at 15 to 30 °C. (Fixed at 7 °C on 7700e)

Peristaltic Pump: Low pulsation, high precision 10 roller peristaltic pump with 3 channels for precise delivery of sample, reagent gases and make-up gas. The pump is made of PFA and provides excellent chemical compatibility.

High Matrix Introduction (HMI) Capability

Agilent's unique patented HMI Aerosol Dilution technology, standard on the 7700x, expands the TDS range to percent level, while eliminating the added costs, time and potential issues of conventional liquid dilution.

RF System

RF generator: The new high power transfer efficiency, maintenance-free solid state digital drive 27 MHz RF generator with variable-frequency impedance matching provides significantly improved plasma stability with changes in sample matrix, including the introduction of high flow rates of volatile organic solvents.

- RF power range: 500 W to 1600 W, in steps of 10 W.

Torch: Easy-mount, one piece quartz torch with 2.5 mm internal diameter (id) injection. The wide torch injector promotes efficient decomposition of the sample matrix, minimizing interferences and reducing routine interface cleaning.

Torch position: Stepper-motor controlled in three axes (horizontal, vertical and sampling depth) in 0.1 mm steps. Expert AutoTuning delivers quick and reliable optimization following maintenance.

- Horizontal and vertical position: ± 2 mm
- Sampling depth: 3 to 28 mm

ShieldTorch System: Agilent's unique Shield Torch System (STS) precisely controls ion energy – essential to achieve high performance in He cell mode and cool plasma operation.

Interface

Sampling cone: 1 mm diameter orifice, Ni-tipped (7700x and 7700e) or Pt-tipped (7700s) with Cu base. Easy access to the interface region for routine maintenance; no tools are required for removal or refilling of sampling cone. The large cone retaining ring insures reliable thermal contact and reproducible fitting, even with different operators, giving dependable long-term performance.

Skimmer: Skimmer cone, 1.5 mm diameter orifice, Ni (7700x and 7700e) or Pt-tipped (7700s). Precisely controlled skimmer tip temperature and controlled skimmer distance from spray gun, tolerance to high matrix samples. Small skimmer orifice reduces matrix contamination of the high vacuum region, reducing maintenance.

Ion Lens

The redesigned extraction and off axis ion lens of the 7700 improves performance in the low and medium mass range across the entire mass range.

The lens is in front of the gate valve, allowing easy access for scheduled cleaning, without venting the vacuum system.

Extraction lens: Positioned behind the skimmer cone, the extraction lens focuses ions of all masses as they enter the intermediate vacuum stage. The lens design gives the characteristic "flat" mass response of the 7700, and operates at fixed voltage for simple, reliable tuning.

Off-axis Omega lens: Protects the ORS³ cell and high vacuum region from contamination, by separating neutral species and photons from the ion beam. This contributes to the minimal mass bias and low background noise.

Octopole Reaction System

The 7700 Series incorporates a new, 3rd generation cell, the ORS³, which provides superior interference removal in He mode. The ORS³ is longer and narrower than the 7500 Series ORS cell, and operates at higher frequency, higher cell gas pressure and higher kinetic energy discrimination (KED) bias voltage. This delivers improved performance in He mode, eliminating the need for reactive cell gases for all applications except semiconductor.

ORS³: Consisting of a thermally stabilized cell with a 12 MHz octopole ion guide operated with fixed RF amplitude for the full mass range. Permits fast analysis with uniform conditions, for signal stability and consistent interference removal. An octopole provides both high ion transmission and superior ion focusing, minimizing ion scattering at the high cell pressures required for effective KED.

He cell mode as standard: The combination of the ShieldTorch and the octopole-based cell, both unique to the 7700, enables efficient removal of interferences using an inert cell gas (He) and KED. He mode provides several critical advantages compared to reactive cell gases:

- He mode is effective for all polyatomic interferences, not just reactive polyatomics. This means that the same He mode method can be applied to variable and unknown sample matrices. No reactive cell gas offers such method consistency and ease of use.
- Since He is inert, no new interferences are produced, so reliable results are obtained regardless of the matrix.
- Unlike a reactive cell gas, He does not react with any analytes, so consistent and predictable sensitivity is maintained.

He mode is suitable for all analytes (no gas mode can be used for uninterfered analytes) and can be used reliably for completely unknown sample matrices – a unique capability of the 7700. The use of He cell gas also eliminates safety issues related to reactive gases such as H₂, H₂ mixes or NH₃.

Cell gas control: The 7700x and 7700e have a single He cell gas controller, while the 7700s adds a second (reaction) gas line. Other cell gases are available for research applications, for example, H₂ option (standard on the 7700s), and Xe or NH₃.

If multiple cell gases are used in a method, cell gas switch over time is only about 5 seconds (45 sec on the 7700e), due to the low internal volume of the octopole-based cell.

Mass Analyzer

Quadrupole mass spectrometer: The 7700 uses a high-frequency (~3 MHz) quadrupole with true hyperbolic rod profile, unique in ICP-MS. A hyperbolic profile quadrupole provides superior ion transmission, resolution and abundance sensitivity at standard settings, thereby eliminating the need for multiple resolution settings to separate adjacent peaks.

- Mass range: 2 – 260 amu
- Mass scan speed:
 - Slew rate (Li to U, no intervening peaks): 56.6 million amu/s
 - Scan speed (Li to U, plus data collection at 40 intervening masses): > 3000 amu/s
- Mass resolution:
 - Variable from < 0.3 amu to > 1.0 amu
- Typical mass calibration stability
 - < 0.05 amu per day; < 0.1 amu per 6 months
- Abundance Sensitivity (at Cs):
 - Low Mass side: 5×10^{-7}
 - High Mass side: 1×10^{-7}

Detector: Unique, auto-switching, dual-mode discrete dynode electron multiplier detector provides a full 9 orders dynamic range with standard hardware and operating conditions.

Fast signal acquisition is delivered by a proprietary analog amplifier, which operates at the same short integration time (100 μ s) in both pulse and analog mode.

- Minimum dwell time: 100 μ s
- Dynamic Range: 9 orders

Vacuum System

The Agilent 7700 uses a three-stage differential vacuum system with a single, split-flow turbo molecular pump and single external rotary pump for fast pump-down and simple maintenance. The typical analyzer stage operating vacuum is 3×10^{-6} mbar or lower in no gas mode. Unique AutoRecover mode returns the 7700 to standby (pumping) state when electrical power is resumed after a power failure, saving valuable time by automatically restarting the vacuum system following an overnight power failure.

The rotary pump is external to the cabinet, and can therefore be located conveniently in the laboratory. Alternatively, the pump can be placed outside the laboratory, which may require the extended 3 m vacuum hose option. The rotary pump hose on the Agilent 7700s is chemically inert for superior resistance to highly corrosive acids.

Software

Agilent's ICP-MS MassHunter Workstation software provides comprehensive functionality and ease-of-use features for the 7700 Series. With simplified Expert AutoTuning, extensive use of pre-set methods and powerful context sensitive help, even novice operators will quickly be producing reliable and consistent results. The core version of MassHunter (standard on the 7700e) includes:

- Simple intuitive interface for system configuration, instrument control, maintenance and diagnostics, and performance reports. Batch and Queue control of automated startup tasks, method settings, acquisition parameters and sequencing. Batch-at-a Glance data table with real-time update, including all sample data, ISTD/QC signal trend and calibration curves.
- Built-in outlier flags and LabQC charting.
- Fast, simple data report layout and export to Microsoft® Excel (included with MassHunter Workstation software), or export to LIMS for final reporting. The full version of MassHunter (standard on the 7700x and 7700s, optional on the 7700e) adds advanced and flexible tuning, acquisition and data processing tools, including full manual tuning, transient signal acquisition, isotopic analysis and Quick Scan.

The MassHunter software platform is common to all Agilent MS systems (ICP-MS, LC/MS and GC/MS), which reduces training costs.

Optional Software

The full version of ICP-MS MassHunter can be further extended through a range of software options:

- **User Access Control** - provides multi-level user logon control for enhanced security and auditing capabilities. This includes three levels of access authority, records of user name, operating system lock and more.
ICP-MS MassHunter with User Access Control, combined with Agilent's OpenLab Enterprise Content Manager (ECM), satisfies compliance requirements of US FDA 21 CFR part 11.
- **Chromatographic Software** provides integrated method setup and direct run control for common Agilent LC and GC modules, together with fully integrated chromatographic data analysis for LC-or GC-ICP-MS applications. Permits automatic sequence recalibrations, retention time and ion ratio updates, compound independent calibration, snapshot, automated report generation and more.

- **Intelligent Sequencing** provides comprehensive, configurable QA/QC functionality for automatic QA/QC checks and actions during unattended operation. Includes templates for QC reports for standard methods such as US EPA 6020 and 200.8.

Accessories and Peripherals

Agilent offers a full range of configurable accessories and peripherals for the 7700 Series, including:

- **Mira Mist Parallel-Path Nebulizer (Teflon or PEEK):** Suitable for samples containing suspended particulates.
- **Agilent Integrated Autosampler (I-AS):** A compact, fully-integrated autosampler with cover and pumped rinse station. Ideal for ultra-trace analysis and small sample volumes (0.5 mL). Includes flexible rack configurations offering maximum capacity of 89 vials, plus 3 rinse vials.
- **Integrated Sample Introduction System for Discrete Sampling (ISIS-DS):** Delivers reduced matrix loading and improved productivity in high-throughput laboratories. ISIS can also be configured for low-pressure chromatography, hydride generation, and more.
- **Inert (HF-resistant) Kit:** O-ring-free, PFA sample introduction kit provides lowest contamination levels in the determination of sub-ppt level impurities in high-purity reagents. The kit includes a demountable torch with platinum or sapphire injector and the option of a side-arm connector for the addition of O₂/Ar for organic solvents.
- **Organic Solvent Introduction Kit:** Includes sample introduction parts required for the direct analysis of volatile organic solvents (requires additional hardware options).
- **LC-ICP-MS Speciation Kits:** Includes all necessary tubing, connectors and cables for seamless interfacing of an Agilent LC to the 7700. Pre-configured kits are available, with column, connectors and methodology for the turn-key analysis of As species in urine and waters.
- **GC-ICP-MS Interface:** Connects an Agilent 7890 GC to the 7700. The unique, fully heated inert Sulfinert lined transfer line and torch with heated injector eliminates cold spots, enabling routine analysis of labile and high boiling point compounds. Transfer line and injector can be independently heated to 300 °C.
- **Laser Ablation:** The 7700 Series can be integrated with any commercially available laser ablation system for the direct analysis of solid samples. With its high sensitivity, fast simultaneous detector and 9 orders dynamic range, the 7700 is ideally suited to measuring signals from laser ablation.

Support and Training

Agilent is renowned for providing expert applications and service support. Agilent has a global network of factory-trained ICP-MS specialists ready to provide support with hardware, software, or applications wherever you are located. Services include:

- Preventive maintenance (PM) to deliver consistent operation and minimize downtime
- Troubleshooting, maintenance and repair
- Software support services
- Compliance services including IQ and OQ of both ICP-MS hardware and software (full version only)
- Comprehensive warranty extension and service contracts, including peripherals and coupled LC/GC systems
- Classroom training and on-site training delivered by experts

The Agilent Value Promise – 10 years of guaranteed value.

In addition to providing continuous product development, we offer something else unique to the industry: our 10-year value guarantee. The Agilent Value Promise guarantees you at least 10 years of instrument use from the date of purchase, or we will credit you with the residual value of the system toward an upgraded model. Not only does Agilent offer a safe initial purchase, we ensure your investment value long-term.

The Agilent Service Guarantee

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

Guaranteed Performance

For each specification, the actual instrument factory test data or Certificate of Guaranteed Performance is included with every Agilent 7700 Series ICP-MS instrument.

Specification		7700e	7700x	7700s
Sensitivity (Mcps/ppm)	Li (7)	20	50	50
	Co (59)			30 (cool plasma)
	Y (89)	80	160	240
	Tl (205)	40	80	120
Background on-mass (cps)	No gas (9 amu)	<5	<2	<3
	He cell gas (9 amu)	<2	<0.5	<0.5
Oxide ratio (%)	CeO/Ce	<2	<1.5	<3
Doubly-charged ratio (%)	Ce ²⁺ /Ce	<3	<3	<6
No gas mode detection limits (ppt)	Be (9)	1.5	0.5	0.5
	Fe (56)			3 (cool plasma)
	In (115)	0.5	0.1	0.1
	Bi (209)	0.5	0.1	0.1
He mode detection limits (ppt) *	As (75)	20	20	
	Se (78)	40	40	
H ₂ mode detection limits (ppt)	Fe (56)			3 **
	Se (78)			1
Short-term stability (%RSD)	20 min	<3	<3	<3
Long-term stability (%RSD)	2 hours	<4	<4	<4
Isotope ratio precision (%RSD)	Ag (107)/Ag (109)		<0.1	<0.1 ***

* He mode detection limits for As and Se are performed in a matrix of 1% HNO₃, 2% HCl and 100 ppm Ca, demonstrating the effective removal of both ArCl and CaCl. All other tests are performed in a matrix of 1% HNO₃.

**The same H₂ mode specification applies to the 7700x when fitted with the optional H₂ cell gas line

***The same isotope ratio precision specification applies to the 7700e when the software is upgraded to Full version

All detection limits 3 sigma.

Site Requirements and Safety

Dimensions

Mainframe	Width	730 mm (main cabinet, excluding peripump)
	Depth	620 mm (main cabinet, excluding power cord)
	Height	595 mm (main cabinet, excluding exhaust chimney)
	Weight	115 kg
Largest shipping container	Width	980 mm
	Depth	980 mm
	Height	850 mm
	Weight	138 kg

Environmental

Operating temperature	Range	15–30 °C
	Rate of change	<2 °C/hr (max. change 5 °C)
Operating humidity	Range	20% to 80% (non condensing)

Utility

Electricity supply	Voltage	Single Phase, 200-240 V, 50/60 Hz
	Current	30A
Cooling water	Inlet temperature	15-40 °C
	Minimum flow rate	5 L/min
	Inlet pressure	230–400 kPa (33–58 psi)
Argon gas supply	Minimum purity	99.99%
	Maximum flow rate	20 L/min
	Supply pressure	500–700 kPa (71–100 psi)
Cell gas supply	Minimum purity	99.999%
	Maximum flow rate	12 mL/min for He and 10 mL/min for H ₂
	Supply pressure	90-130 kPa (13–18.8 psi) for He and 20-60 kPa (2.9–8.7 psi) for H ₂
Exhaust duct	Vent Type	Single vent, 150 mm diameter
	Flow rate	5–7 m ³ /min.

Regulatory Compliance

Safety	IEC 61010-1:2001 / EN 61010-1:2001, CAN/CSA C22.2 No.61010-1-04,UL No.61010-1
EMC	IEC 61326-1:2005 / EN61326-1:2006, ICES-001:2006, AS/NZS CISPR 11:2004
ISO	Manufactured at an ISO 9001 and ISO 14001 certified facility

Standard Mainframe Configurations

	7700e	7700x	7700s
MassHunter Workstation software version	Core	Full	Full
Nebulizer (concentric)	MicroMist (borosilicate glass)	MicroMist (borosilicate glass)	MicroFlow (PFA)
Spray chamber (Scott double-pass)	Quartz	Quartz	Quartz
Torch id (with ShieldTorch System)	Quartz, 2.5 mm id Injector	Quartz, 2.5 mm id Injector	Quartz, 2.5 mm Injector
High Matrix Introduction (HMI) capability	Not available ¹	Included	Optional ²
Interface cones	Ni	Ni	Pt
Plasma Mass Flow Controllers (Ar)	3	4	4
Option Gas Line for alternative carrier gas, such as Ar/O ₂ for organics, or He for laser	Not available ¹	Option	Included
He (collision) cell gas line	Included	Included	Included
H ₂ (reaction) cell gas line	Not available ¹	Option	Included
3rd cell gas line (low- or high-flow rate options)	Not available ¹	Option	Option

Note¹ Configurations that are shown as "not available" for the 7700e require an upgrade to the full version of MassHunter 7700 Workstation software; some additional hardware upgrades may also be required. Following these upgrades, the same hardware options are available for the 7700e as those offered for the 7700x.

Note² To add HMI capability to the 7700s requires the following parts to be ordered:
 Nebulizer: MicroMist (G3266-65003) or Mira Mist (G3161-80000 or G3161-80001)
 Ni Sampling cone: 7700x type (G3280-67040) -- (or use 7700s Pt Sampling cone)
 Ni Skimmer cone: 7700x type (G3280-67041)
 Ion lens: 7700x type (G3280-67039 – includes stainless steel skimmer base (G1833-65591))

For More Information

Visit www.agilent.com/chem/icpms.

Or call 1-800-227-9770 (in the U.S. and Canada) for a free information pack.

In other countries, please call your local Agilent representative or your Agilent Authorized Distributor.

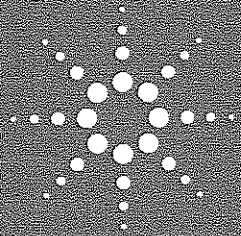
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Eliminating unplanned repair costs.



Total repair coverage priced exclusively for government and academic labs.

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Valuable services delivered by highly skilled professionals – that's how Agilent completes more than 85% of service calls the first day. It's also why we enjoy a 98% satisfaction rate among customers worldwide.¹ With Agilent attending to your instrument system, you can stay focused on the work at hand.

Agilent Advantage Bronze for Government and Academia offers affordably priced, all-inclusive repair coverage:

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All Parts and Supplies Required for Repair – Genuine Agilent parts necessary for repairs are covered by your plan including consumables and supplies required for repair*

Hardware and Software Telephone Support – Technical support for both hardware and software is as close as the phone, as often as you need it.

Agilent Remote Advisor-Assist** – Single-click service requests and remote diagnosis of problems helps to speed repairs. More than 60% of service calls may be resolved immediately without delay.

Preferred Level Service – While this plan does not provide a guaranteed response time, you'll get timely service with preferred response over per-incident service calls.

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Our measure is your success.



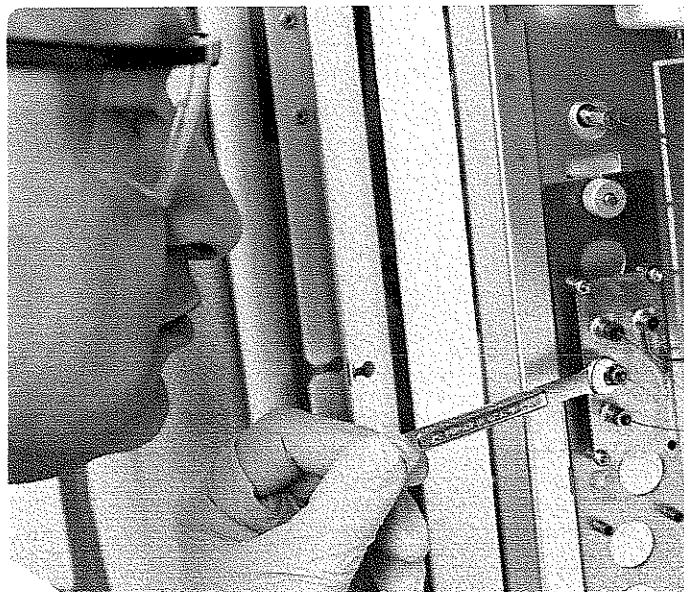
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For more information about Agilent Advantage Service Plans and other Agilent Services, please call your local Agilent Representative or visit www.agilent.com/chem/services

¹ Satisfaction with service engineers as reported in the Agilent customer satisfaction survey, 2007.

* Per local parts replacement policy.

** Where available. Installation required. Installation fees waived when connecting minimum number of systems

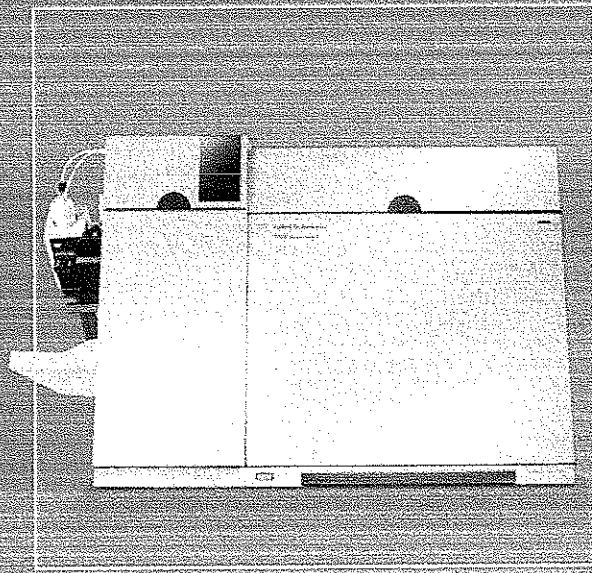
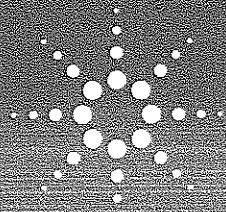
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Agilent 7700 Series ICP-MS

*Extraordinary design.
Unparalleled performance.*

The Measure of Confidence



Agilent Technologies

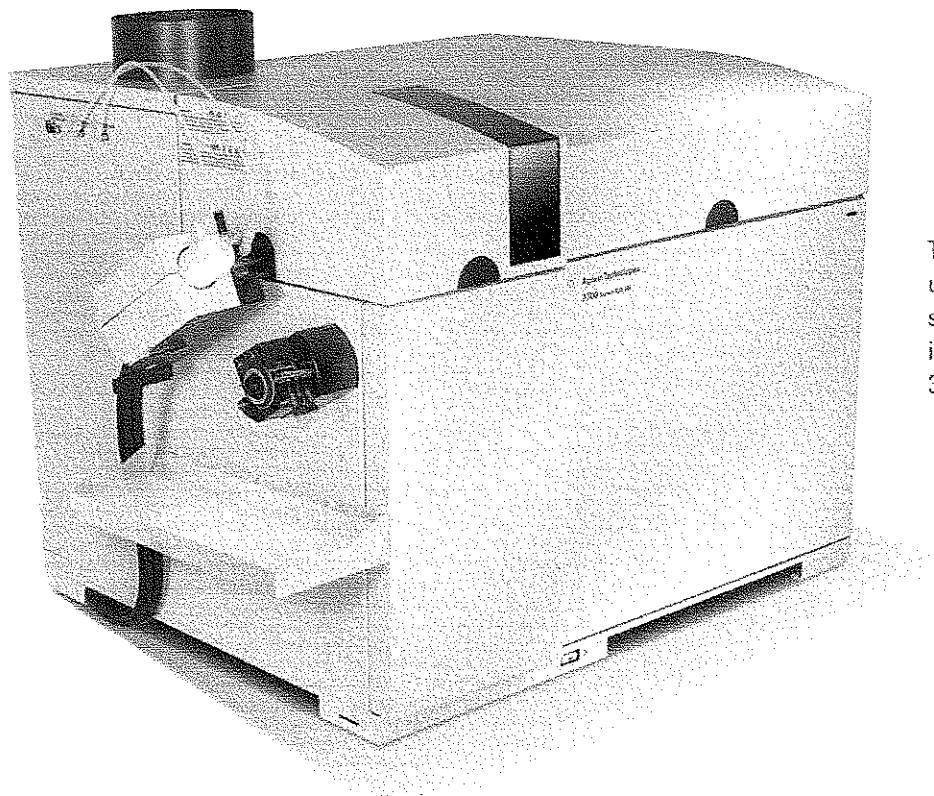
The Agilent 7700 Series ICP-MS

Advancing ICP-MS technology. Simplifying trace metals analysis.

Whether you need to analyze hundreds of complex samples in less time, or confidently detect ultra trace metals in high purity reagents, **Agilent's 7700 Series ICP-MS** can help you meet the analytical challenges of today... and of the future.

The 7700 Series redefines the benchmark for ICP-MS: more productive, simpler to use, higher sensitivity, lower backgrounds, better interference removal, increased flexibility, easier to maintain and service. All within the smallest commercial ICP-MS mainframe ever made.

The robust workhorse 7700x is the instrument of choice for most applications, and in high-throughput commercial labs, the **all powerful 7700s** is designed specifically for semiconductor applications, and the **new 7700e** offers a simplified and easy to use system for routine analysis. Featuring a new, configurable MassHunter software platform and a host of hardware developments, including a new frequency-matching RF generator and 3rd generation Octopole Reaction System (ORS³), all three 7700 Series mainframes provide unrivalled levels of performance and ease of use, while delivering results you can trust – even in the toughest sample matrices.



The Agilent 7700x ICP-MS provides unparalleled accuracy in high-matrix samples, redefining cell performance in helium mode with a revolutionary 3rd generation cell design – the ORS³.

To learn more about the Agilent 7700 Series ICP-MS, visit www.agilent.com/chem/ICPMS.

Extraordinary 3rd generation ICP-MS

As ICP-MS has evolved over the last two decades, Agilent has been the driving force in the technique's development, introducing many key innovations. With the 7700, we build on this legacy by bringing ICP-MS into the world of routine laboratories and non-expert operators, through new levels of performance, reliability and automation.

Robust enough for your complex matrices

The 7700 has been developed to handle the toughest sample types with ease, due to its high-performance sample introduction, matrix tolerant interface and fast, frequency-matching RF generator.

A unique 3rd generation collision/reaction cell is utilized in all 7700 Series instruments to remove spectral interferences that might otherwise bias results. Helium (He) mode is already established as the *only* reliable cell method for complex and variable samples, because it filters out *all* polyatomics, even unidentified ones.

He mode in the 7700 Series benefits from an innovative new ion lens and 3rd generation cell design, together delivering higher sensitivity, lower backgrounds and more effective interference removal – eliminating the need for reactive cell gases in most applications.

Simple enough for your routine analysis

The 7700 Series provides many user-friendly features that reduce training costs and improve productivity:

- Reproducible operation from day to day and instrument to instrument, using one-click pre-set plasma conditions
- Consistent, reliable operation with Expert Auto Tuning – the fastest, most effective system optimization program ever developed for ICP-MS
- One-touch access to the interface area, plus easier sampling cone removal/refitting during routine maintenance
- Powerful new MassHunter software platform for enhanced data analysis and reporting

Forward-thinking innovation



High Matrix Introduction (HMI) kit

The unique patented HMI, standard on the 7700x, enables high dissolved solids samples (such as undiluted seawater) to be run directly – a first for ICP-MS. **Page 6**



ShieldTorch System (STS)

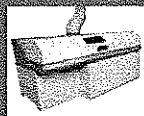
The Agilent STS is a key feature of the 7700 Series. It provides effective plasma grounding, reducing and narrowing the ion energy spread – essential for optimum interference removal in He mode. **Page 6**



Octopole Reaction System (ORS)¹

Works effectively using He mode, for simplified operation and consistent results, even in complex sample matrices. **Page 4**

Backed by more than 15 years of ICP-MS leadership



Agilent 4500 Series

The world's first benchtop ICP-MS, featuring full computer control, Auto Tuning and superior cool-plasma performance using our proprietary ShieldTorch System. Nearly 1000 units installed worldwide.



Agilent 7500 Series

The flagship successor to Agilent's 4500 Series – and the most widely used ICP-MS in history, with almost 3000 units installed worldwide.

ORS³ – unmatched interference removal in complex matrices

Removing polyatomic interferences in ICP-MS

The 7700 incorporates a newly-developed 3rd generation Octopole Reaction System (ORS³) with improved ion focusing and increased collision efficiency. ORS³ redefines the capability of He mode, and delivers unmatched performance for multi-element analysis of complex sample matrices.

Reliable results with He mode

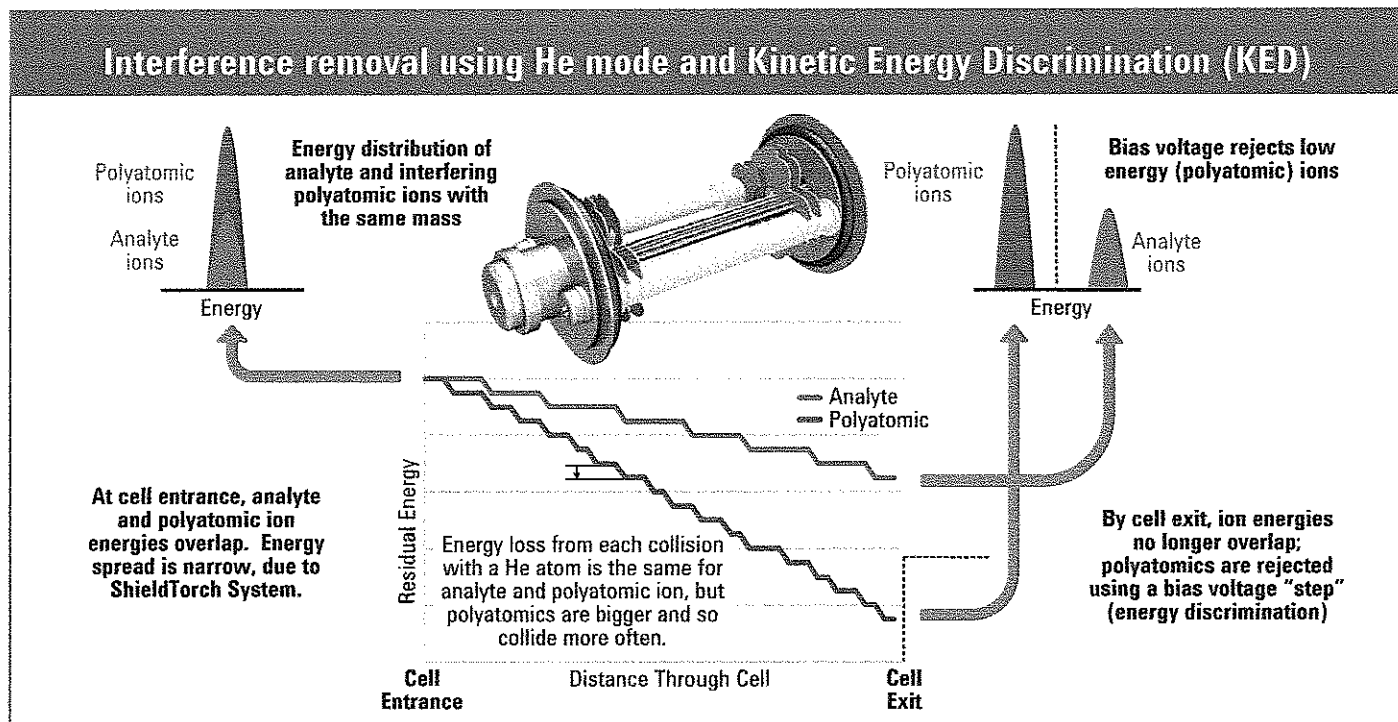
ICP-MS delivers simple spectra, compared to optical spectroscopy techniques, such as ICP-OES. However, the plasma, solvent and sample matrix give rise to polyatomic interferences on many analytes, so modern quadrupole ICP-MS instruments employ a collision/reaction cell (CRC) to reduce these interferences.

Most CRCs only operate with reactive gases, which must be targeted at specific, known interferences on individual analyte isotopes. Reaction mode can be effective when the interferences are predictable and constant (i.e. in simple, consistent samples such as high-purity semicon

process chemicals), but reactive cell gases cannot be used successfully for multi-element analysis in complex, unknown or variable samples because:

- Each reaction gas will only remove interferences which react with that cell gas, so unreactive polyatomic ions remain, leading to residual interferences.
- Users must know which interferences they want to remove, before selecting the reaction gas – not possible with unknown or variable samples.
- All reaction gases form reaction product ions, creating unpredictable new interferences in complex samples.
- All reaction gases react with some analytes, leading to lower signals in reaction mode. For example, severe loss of sensitivity has been reported for Cu and Ni when H₂ or NH₃ cell gas is used.

He mode on the 7700 provides simple, consistent and reliable analysis of unknown samples, with no new interferences and no reactive signal loss for analytes.



To learn more about the Agilent 7700 Series ICP-MS, visit www.agilent.com/chem/ICPMS.

One 7700 Series, three models, configured for your application

The Agilent 7700x: Powerful ICP-MS workhorse for most standard routine and high-matrix applications

The 7700x is configured for routine analysis of high matrix samples, and includes HMI, pre-set plasma conditions and He mode ORS³ as standard.

With its high-temperature plasma (low oxides), matrix tolerant interface, and 9 orders dynamic range, the 7700x provides the analytical performance required in busy routine laboratories, but also retains the hardware and software flexibility to handle more advanced research applications. Many of the features expected of the highest specification ICP-MS systems are standard on the 7700x, making it suitable for most challenging analytical tasks. A range of options and accessories is available to further customize the 7700x for advanced applications, such as discrete sampling; chromatographic coupling; and analyzing organic solvents, highly corrosive acids, and more.

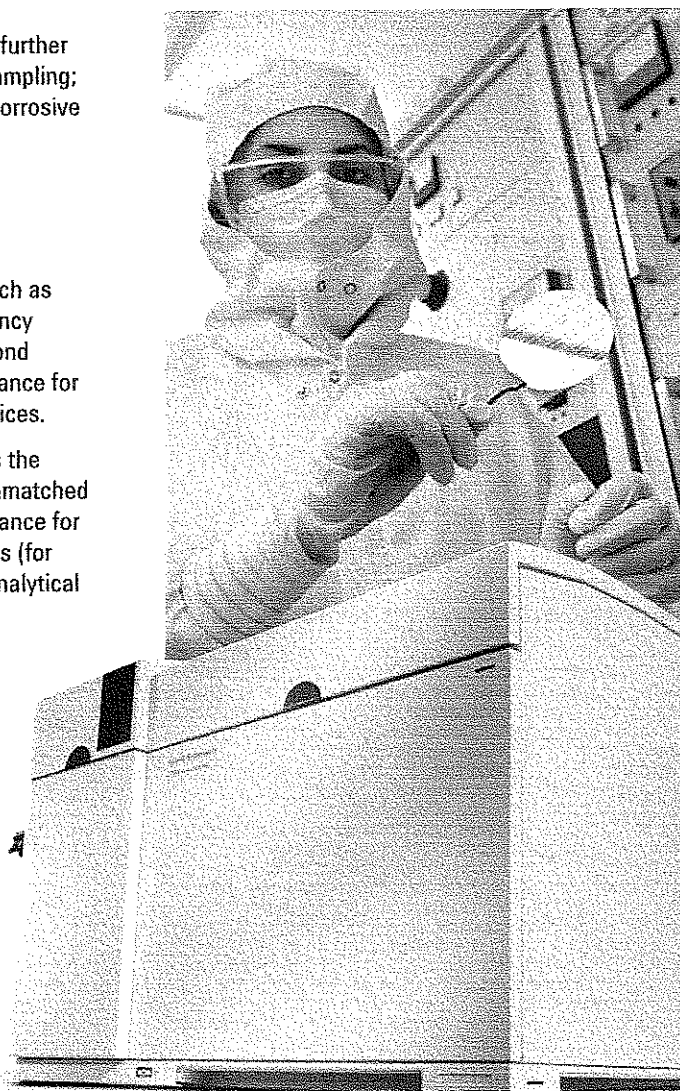
The Agilent 7700s: High performance for high-purity semiconductor applications

The 7700s is configured for the analysis of high-purity materials such as those monitored in the semiconductor industry. With a high-efficiency sample introduction system, optional 5th plasma gas line, and second (reaction) cell gas line as standard – the 7700s offers high performance for the removal of intense interferences in known and consistent matrices.

For laboratories that currently utilize cool plasma, the 7700s makes the transition to the most up-to-date ICP-MS technology easy. With unmatched cool plasma capability, the 7700s delivers industry-leading performance for the measurement of easily ionized elements in high-purity materials (for example, Ultra Pure Water), allowing all common semiconductor analytical methods to be performed on the same instrument.

The Agilent 7700e – Simplified operation for routine applications

If you're looking for an affordable route to high-performance ICP-MS, look no further than our 7700e, which includes He mode ORS³ and core software functionality. The 7700e provides a simple, highly automated user interface and standardized hardware configuration, while field upgrades to full 7700x specification are available, should lab requirements change in the future.



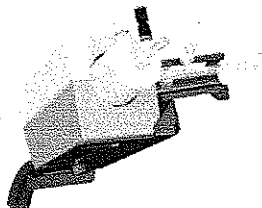
Agilent offers Standard Operating Procedures for all common semicon sample types to simplify your method development.

Sensitivity and reliability by design

Every component of the 7700 Series is engineered for performance and usability

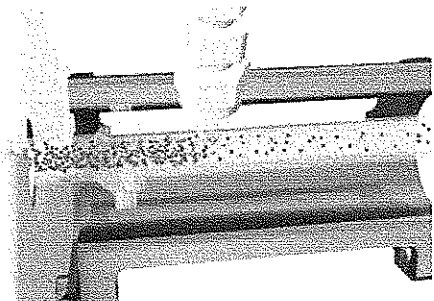
Sample introduction

A low-flow, Peltier cooled sample introduction system increases operational stability and consistency (standard on all 7700 mainframes).



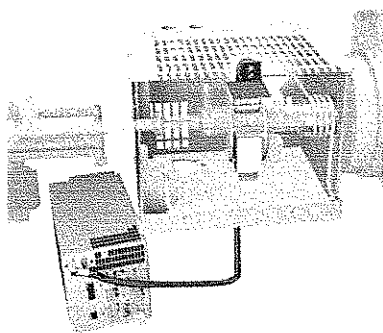
Patented High Matrix Introduction (HMI) kit

Increases matrix tolerance up to 10x compared to conventional ICP-MS instruments. HMI also improves plasma robustness, virtually eliminating matrix suppression (standard on the 7700x).



Plasma RF generator

This fast, frequency-matching RF generator increases the tolerance of changing matrices. Even volatile organic solvents can be introduced without affecting plasma stability. Includes ShieldTorch System as standard, providing the narrow ion energy spread required for effective interference removal in He mode.



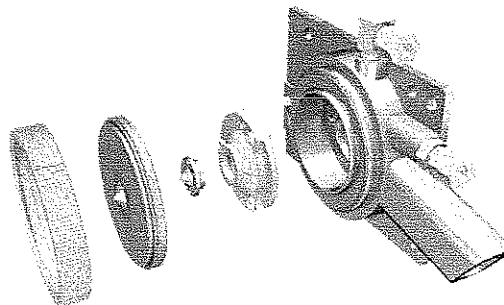
Electronic gas control

Proprietary Active Mass Flow Controllers deliver precise control of all plasma and cell gases.



Interface and cones

Robust, standard Ni, or optional Pt tipped cones are easy to access and remove/replace during routine maintenance (no tools are required for removal and refitting of the sampling cone). Torch position automatically realigns with the interface following maintenance to the torch or cones.



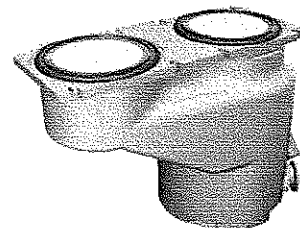
Off-axis ion lens

Provides continuously focused ion transmission, and the lowest mass bias of any ICP-MS. In addition, the ion lens is located *outside* the high vacuum region, making it easy to access for scheduled cleaning.

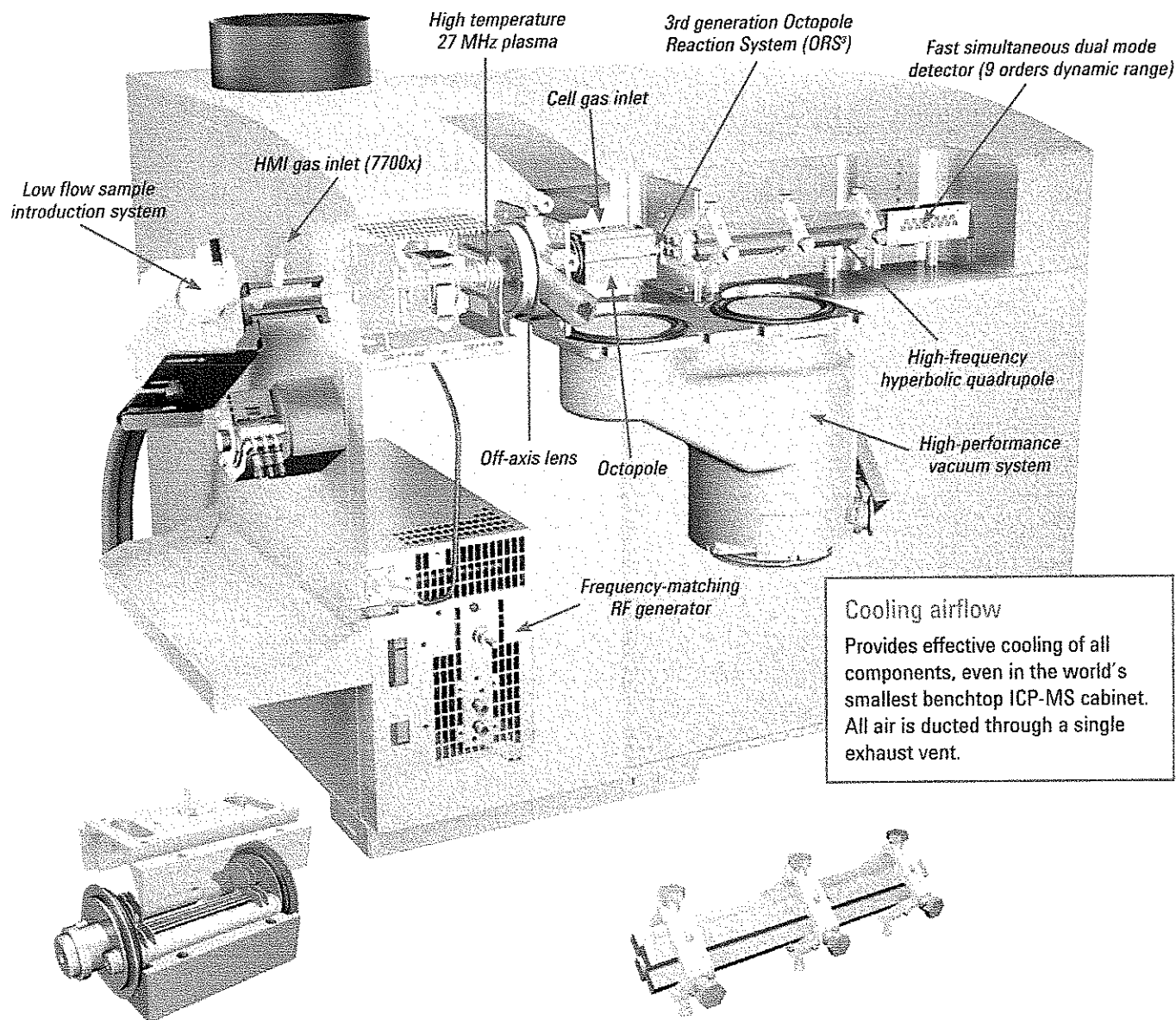


Vacuum system

A single, high-performance split-flow turbo pump (pictured right) and single external rotary pump ensure fast pump-down and simple maintenance.



To learn more about the Agilent 7700 Series ICP-MS, visit www.agilent.com/chem/ICPMS.



Cooling airflow
 Provides effective cooling of all components, even in the world's smallest benchtop ICP-MS cabinet. All air is ducted through a single exhaust vent.

Octopole Reaction System (ORS³)

This new temperature-controlled collision/reaction cell has a low internal volume, making it ideal for high cell pressures and rapid cell mode switching. No more compromised mixed-gas conditions.

Octopole ion guide

Provides high ion transmission and superior focus, ensuring minimal ion scattering at high cell pressures. This enables efficient operation in He mode, and delivers lower detection limits without the drawbacks of reactive cell gases.

Hyperbolic quadrupole

The only hyperbolic quadrupole used in ICP-MS delivers superior peak separation and abundance sensitivity, without needing custom quad settings to separate adjacent peaks.

Electron multiplier detector

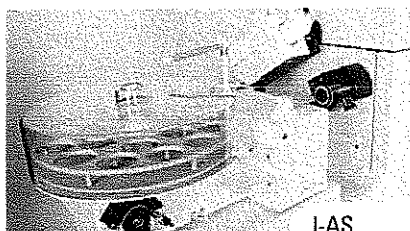
Provides a full 9 orders dynamic range with standard hardware and operating conditions. Integration time is short (100 μ s) in both pulse and analog mode.



Extend the power of your 7700 ICP-MS

with a wide range of options and accessories

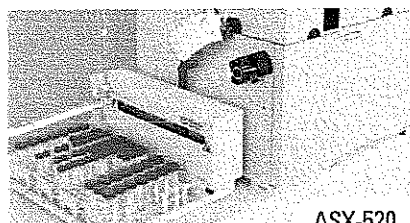
Whether you need to maximize sample throughput, achieve the lowest detection limits or separate the different chemical forms of an element, Agilent offers a range of configurable options for the 7700 Series – plus the know-how to help you achieve your specific application goals.



I-AS

Sample delivery systems

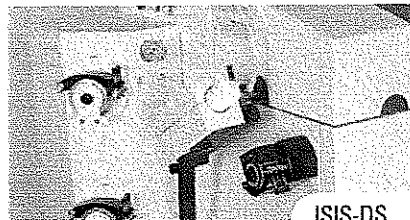
Agilent Integrated Autosampler (I-AS). Integrated, covered autosampler with pumped rinse station; ideal for ultra-trace analysis and small sample volumes (as low as 0.5 mL). Flexible rack configurations offer a maximum capacity of 89 vials, plus 3 rinse vials. Service support and warranty by Agilent.



ASX-520

Agilent ASX-520. Ideal for medium to high sample throughput applications, with rack configurations providing up to 360 vial positions. Service support and warranty by Agilent.

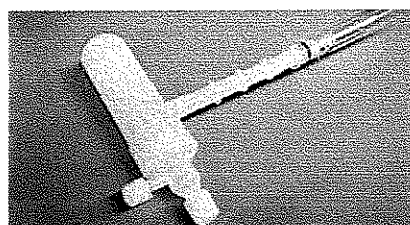
Nebulizer. Agilent offers nebulizers to suit every sample type and volume, including low-flow, concentric and parallel path.



ISIS-DS

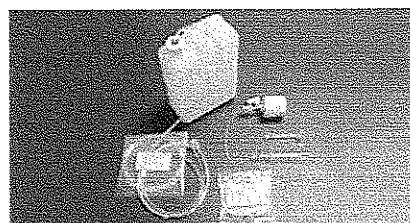
Agilent Integrated Sample Introduction System Discrete Sampling (ISIS-DS). Delivers reduced matrix loading and improved productivity in high-throughput laboratories, with USEPA compliant triplicate analysis of 30 elements or more in 75 seconds, sample to sample.

Option gas line for 7700x. Suitable for applications that require a mixed carrier gas, such as O₂ for organic solvents or LC mobile phases, and helium carrier gas for laser ablation (standard on the 7700s).



Inert Sample Introduction kit. O-ring-free and manufactured from PFA for the lowest contamination levels. Demountable torch with Pt or sapphire injector options. HF resistant, and suitable for high-purity reagents.

Laser ablation. With its fast simultaneous detector and 9 orders dynamic range, the 7700 is ideally suited to the direct analysis of solid samples – both bulk and time-resolved – by laser ablation.



Organics kit. Contains the sample introduction parts you need to run volatile organic solvents. Includes organics torch, solvent-resistant drain kit and uptake tubing.

To learn more about the Agilent 7700 Series ICP-MS, visit www.agilent.com/chem/ICPMS.

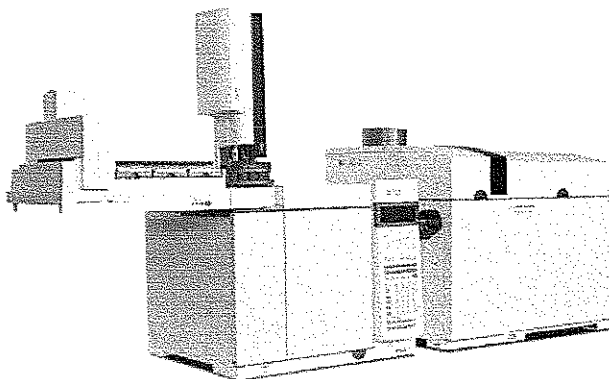
Proven speciation capability

simplifies the routine use of ICP-MS as an elemental detector for separation technologies

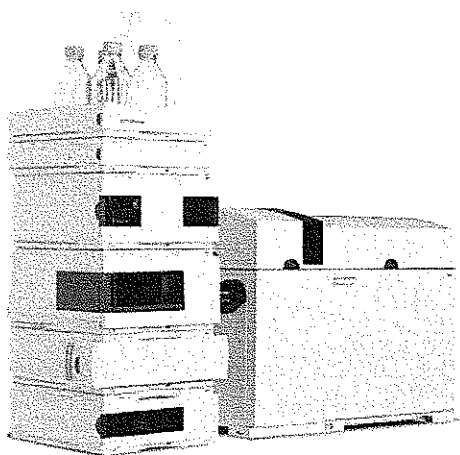
Agilent's 7700 ICP-MS links seamlessly with HPLC, GC and CE systems through field-proven and supported interfaces, integrated software control, documentation, and fully developed application kits.

Industry leading speciation measurement

Emerging environmental, food safety and consumer product regulations increasingly include the requirement to identify and quantify compounds as well as total elemental concentrations. Therefore, routine, accurate speciation analysis has never been more important. As the leading supplier of ICP-MS and chromatography systems, Agilent can help you identify the right system for your application, develop methods and train your staff. We can also provide you with support engineers who are factory trained on all parts of the coupled system.



7700 Series ICP-MS with 7890A GC system



7700 Series ICP-MS with 1200 Series LC system

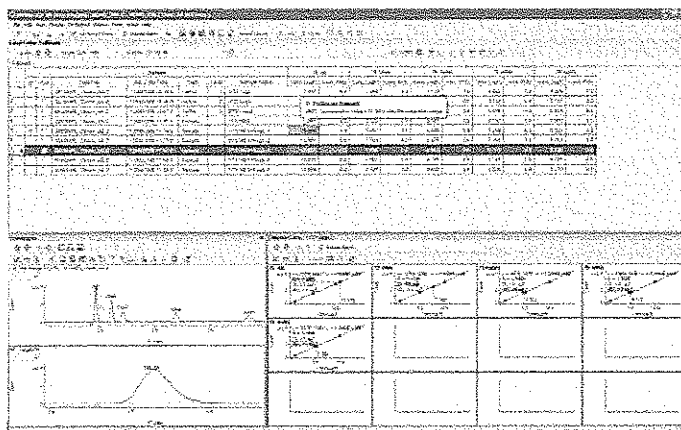
Optional software for integrated LC- and GC-ICP-MS

The 7700 Series MassHunter software provides seamless setup and operation of coupled chromatographic systems, with direct method setup and run control for Agilent LC- and GC-ICP-MS systems, and simple links to many other separation techniques. The optional chromatographic data analysis software has the same user interface and layout as the spectrum data analysis software, simplifying operation.

Field-proven and supported LC and GC interfaces

Pre-configured LC-ICP-MS kits are available for turnkey methods, such as As speciation in water and urine. The unique GC-ICP-MS interface is heated to the tip of the injector (up to 300° C) for routine analysis of high-BP compounds.

In addition, the inert, fully heated (Sulfinert™ lined) interface provides unparalleled performance for advanced GC-ICP-MS applications, such as separating siloxanes, brominated flame retardants, and sulfur species in fuels.



ICP-MS MassHunter WorkStation – Chromatographic Data Analysis

Intuitive, configurable MassHunter software simplifies your daily workload

Instrument control and data acquisition

From automated **startup** checks following plasma ignition, through **batch and queue** method setup and sequencing, to integrated data processing and final report generation, our new ICP-MS **MassHunter Workstation software** makes running your Agilent 7700 easier than ever. It includes:

- Expert AutoTune technology and application-specific pre-set methods that enable even novice operators to quickly produce reliable, consistent results
- Simplified user interface and navigation: a single control pane provides a comprehensive overview of **hardware** configuration, performance reports, early maintenance feedback, and system diagnostics
- **Batch and queue** interface puts critical method setup and sample analysis at your fingertips:
 - The **batch** pane displays tune settings, acquisition/data analysis parameters, and sample list
 - The **queue** pane displays current and scheduled tasks, current batch sequence, and real-time status of the current sample

For compliant environments, the MassHunter software can also be integrated with Agilent OpenLAB ECM.

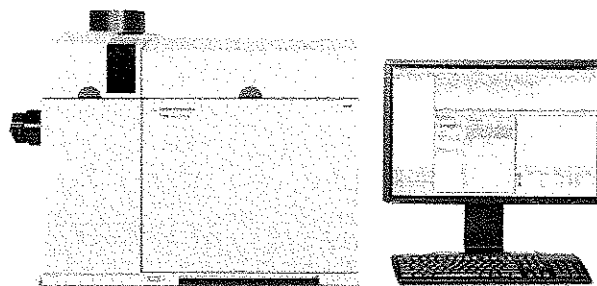
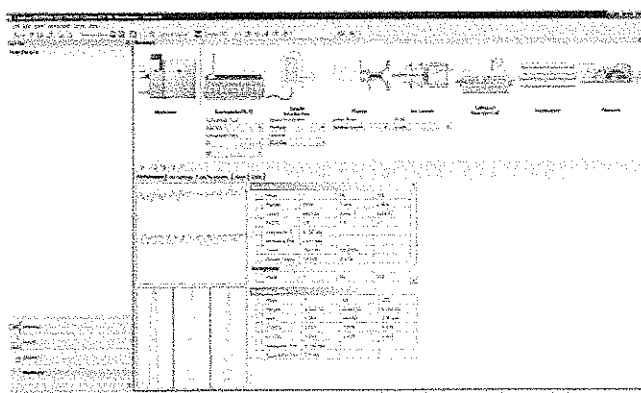
Data analysis in a single, clear window

The flexible, customizable batch-at-a-glance data table provides a comprehensive overview of the current batch, including counts, concentrations, RSD and replicate data. It includes:

- Real-time results update during sequence acquisition
- Interactive calibration plot display (12 plots or single plot), with real-time update after edits and during sequence
- On-screen display and flags for user-selected outliers and QC failures; built-in LabQC sample charting
- Graphical display of internal standard recovery, QC stability plots, calibration curves and mass spectrum (or chromatogram)
- Easy-to-edit report templates for print, screen or electronic output (including direct export to LIMS); templates can be used for individual samples or a complete data batch

Powerful software, consistent across Agilent MS platforms

Agilent's MassHunter software family now includes ICP-MS, LC/MS, and GC/MS, simplifying and reducing the cost of cross-training staff.



To learn more about the Agilent 7700 Series ICP-MS, visit www.agilent.com/chem/ICPMS.

Robust operation in a streamlined design

Agilent's 7700 Series has been engineered to endure the toughest lab environments, while delivering operational cost savings through higher productivity, shorter training times, simpler method development, and lower service requirements (particularly important in clean-room installations).

High reliability boosts uptime and productivity

Like all Agilent ICP-MS systems, the 7700 Series is built for high sample capacity and a healthy return on your investment. The 7700 is manufactured at an ISO 9001 and ISO 14001 facility and features:

- Rugged stainless steel chassis and outer panels
- Extensive shock, vibration, temperature and humidity testing at the production prototype stage to ensure optimum performance, even under extreme conditions
- Auto-recover – saves time by safely returning the 7700 to Standby state when power is restored following a power cut
- Predictive Maintenance software to minimize unplanned downtime
- Advanced error reporting and system diagnostic tools that simplify troubleshooting
- A modular design for shorter repair times

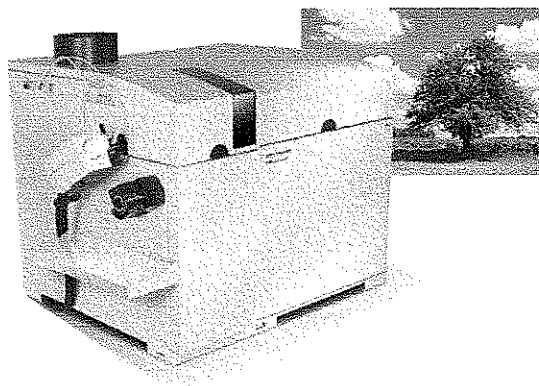
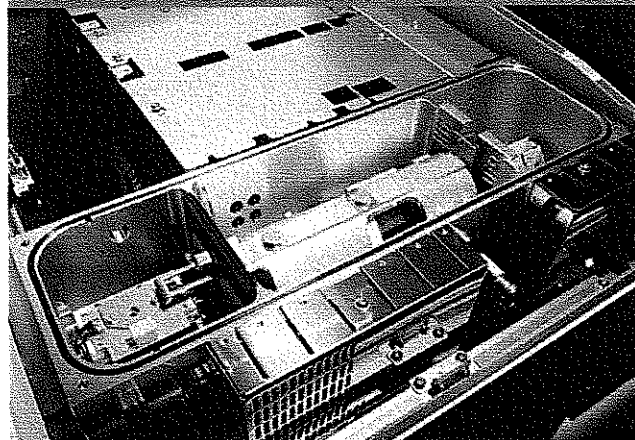
Designed to benefit your lab and our environment

From a 30% reduction in mainframe weight (compared to the 7500), to increased use of recyclable materials, to fewer toxic compounds in electronic components – the 7700 is the *first ever* ICP-MS designed and manufactured for lower environmental impact.



7700 Series: breakthroughs in environmental impact reduction

- Lower heat output and reduced exhaust vent flow (7700s), with a redesigned cooling air-flow management system
- Less sample volume required, so there is less waste for disposal
- Stainless steel outer panels that require less paint and associated solvents
- At only 115 kg, the 7700 mainframe weighs 30% less than the 7500 Series, significantly reducing CO₂ emissions during transportation



Maximize your productivity and data quality with genuine Agilent parts and supplies

From our proprietary ICP torch, to our sample and skimmer cones, to our unique electron multiplier detector – Agilent ICP-MS parts and supplies are manufactured to our tight tolerances and stringent specifications. They are also rigorously tested to ensure that you'll always get the best performance from your instrument, and the best results for your clients.

Trust Agilent to keep your lab running at peak productivity

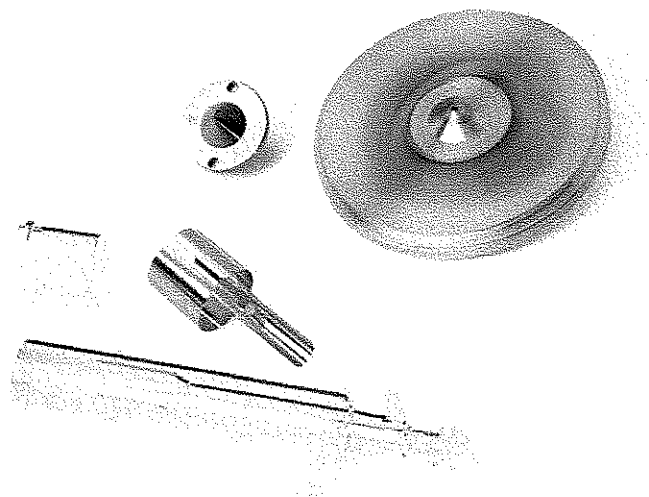
Agilent's Advantage Service protects your investment in Agilent instruments and connects you with our global network of experienced professionals who can help you get the highest performance from every system in your lab. Count on us for the services you need at every stage of your instrument's lifecycle – from installation and upgrade to operation, maintenance and repair.

For customers who require full system validation, Agilent offers complete qualification services (Installation and Operational Qualification) for the 7700 Series ICP-MS hardware and software.

And if ever 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.

The Agilent Value Promise:
10 years of guaranteed performance

In addition to our continually evolving products, Agilent offers the industry's only **10-year value guarantee**. Agilent guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model. It's our way of assuring you of a safe purchase now, and protecting your investment in the long run.



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Agilent Technologies

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: AGILENT TECHNOLOGIES INC

Authorized Signature: *Jandra Beal* Date: 03/11/2011

State of DELAWARE

County of NEW CASTLE, to-wit:

Taken, subscribed, and sworn to before me this 11 day of March, 20 11.

My Commission expires July 28, 20 11.

AFFIX SEAL HERE

NOTARY PUBLIC *Shirley B. Lamkin*

