

ICP-MS 2000

Inductively Coupled Plasma Mass Spectrometry

Instrument mountings:

- Inletsystem: It has open-type inlet stem structure, outside installing atomizer which location by itself and needn't be adjusted
- Peristaltic pump: The Low Pulse peristaltic pump which the computer controlled 3 channels and 12 rollers can be adjust rotate speed
- Atomizer: The atomizer is a quartz glass concentric atomizer. (0.8 mL/min)
- Atomizing chamber: The high-purity quartz atomizing chamber which use semiconductor refrigerating plant is a small size, short memory effect, single channel, pear shape, Impact bead possessed atomizing chambe
- Torch tube: The quartz torch tube has 1.5 mm caliber to spray
- ICP source: 27.12 MHz Solid State Technology, water-cooling, power 1600 W controlled by computer, fire up automatically
- Adjustment system of torch tube position: The computer controls x、y、z three-dimensional accurate position. All the tuning parameter is accessed to analytical method
- Control system of gases: 3 mass flow meters controlled by computer controls all the gas flow atomization gas, Aux gas, plasma gas
- Power-off protection system: when power off, it can shut down by itself with no damage the instrument system
- Connector: Nickel Cone special event connector structure, easy to replace, installation, demolition, sampling and skimmer cone
- Activities valve: It is a computer control valv. It protect instrument vacuum convenient for installing and dismantling sampling cone and skimmer cone when the vacuum system working
- Ion lens system: It has high efficiency hexapole ion guiding system. In all the mass range, it can get the best ion transmission efficiency. It has Ions deflection system. Lens installation and easy removal
- Quadrupoles characteristic: Mo Quadrupole, main Quadrupole 180 mm×12 mm, head Quadrupole 20 mm×12 mm, uncover to installing and dismantling
- Quadrupoles RF generator: air patenting, solid state, 2.0 MHz, mass number adjust stability <0.05 amu/day
- Mass spectra range: 2~255 amu
- Detector: ETP dual mode detector, Divided into two parts in dynode electron multiplier, without digital / analog switch
- Test range: >10⁹
- Multichannel signal analyzer: 65000 channels to adapt to the requirements of the transient signal analysis
- Signal acquisition mode: Jump peak, scanning, sectional scanning, at the same time jump peak and scanning of mixed type
- Software: To provide automatic control instruments and their accessories ability, Windows 2000/XP/vista/win7(32 bit or 64 bit) Professional operating system
- Water circulation system: Temperature control: 10~40℃; Minimum velocity: 5L/Min, Pressure control: 0~600 kPa

- Cost-effective
- Satisfy the clientele's requirements
- Quick analysis speed



Spectrolab Systems Limited
Suite 5, Enterprise Centre, Shrivenham 100 Business Park
Swindon, Wiltshire, SN6 8TZ, England

Tel: 0044 (0) 1793 783666 Fax: 0044 (0) 1793 782 333

Email: sales@spectrolab.co.uk
Web: www.spectrolab.co.uk



ICP-MS 2000

Inductively Coupled Plasma Mass Spectrometry

ICP-MS 2000—good analyse effect!



ICP-MS 2000

Inductively Coupled Plasma Mass Spectrometry



Introduction:

Inductively Coupled Plasma Mass Spectrometry (ICP-MS) has a microscale (10^{-6}), trace (10^{-9}), ultratrace (10^{-12}) element analyses technique. It can analyse most of the elements in the periodic table. It has very low detection limit, wide trends linearity range, low interference, high accuracy, high analyzed speed, and it also can analyze isotope.

ICP-MS2000 is the first inductively coupled plasma mass spectrometer in China, and R & D by Skyray-instrument. It's performance accord with national standard. It can satisfy the clientele requirements and has high performance-price ratio. It mainly applies to environmental, foodstuff, semiconductor, medicine and physiological analysis, nuke industry etc.

Instrument features:

- Open-type inlet system, plug-in installing atomizer, self positioning, maintain easily by customer.
- The network interface for serial inductance, enhanced resistance to interference, improve the data transmission efficiency and stability
- Very kinds of protect function
- The software is easy operated. No special training
- The ion lens, Quadrupole are easily installing, dismantling and maintain
- Perfectly technique of electromagnetic shielding can reduce electromagnetic interference (EMI)
- Consuming material of instrument is developed by skyray itself, it is cost-effective
- High grade sale service, 10minutes respond, 48hours door-to-door service, customer service center follow-up service at all times, ensure service quality

Product performance superiority:

- Quick analyse speed, simple operate, high sensitivity, low background noise, good effect of eliminating interference, easy maintain
- OneClick plasma setting made plasma optimizing more convenient and excellent reproducibility
- Advanced plasma shielding Technology greatly improve the instrument response rate and limit of low mass number, achieve ppt level
- It has particular Activity connector structure, and it can replace, install, dismantling sampling cone and skimmer cone in empty space, it's convenient for daily maintenance
- The Ion efficiency of transmission and eliminate interference capability of polyatomic ion is improved by using the hexapole collision cell
- It don't need Digital/Analogue Conversion, controlled by computer and can achieve consistence dynamic range to 9 order of magnitude
- The new type Vacuum Chambers structure has no wire to connect. Each module use dissymmetric(al) and plug-in installing



Main apply field:

- Environment field: drinking water, seawater, environment water resource foodstuff, hygiene and disease control, commodity inspection ect
- Semiconductor field: high pure metal, high purity reagent, ultratrace impurity of Si wafe, photoresist etc
- Medicine and physiological analysis field: Medical Research of hair, whole blood, serum, urine sample, biological organization ect. Especially the test of Pb in whole blood
- Nuke industry field: analysis of nuclear fuel radioisotope, pollution of Primary cooling water etc
- Other field: as chemical industry, lithification, geology etc

Technical parameters:

- Mass range: 2~255 amu
- Linear range: $\geq 10^6$
- Sensitivity: Be $\geq 2 \times 10^6$; In $\geq 35 \times 10^6$; U $\geq 30 \times 10^6$ unit (cps/mg/L)
- Detection limit: Be ≤ 10 ; In ≤ 2 ; U ≤ 2 unit (ng/L)
- Resolution: 0.6~0.8 amu
- SNR(Signal to Noise Ratio): $\geq 50 \times 10^6$
- Background noise: ≤ 2 cps (all mass number range)
- Mass axis stability: ≤ 0.05 amu/24 h
- Stability RSD: short period $\leq 3\%$; long time $\leq 4\%$
- Oxide ion: CeO⁺/Ce⁺ $\leq 3\%$
- Divalent ions: $^{69}\text{Ba}^{2+}/^{136}\text{Ba}^+$ $\leq 3\%$
- Isotope ratio: ($^{107}\text{Ag}/^{109}\text{Ag}$) $\leq 0.3\%$
- Abundance sensitivity: $\leq 1 \times 10^{-6}$ low mass number; $\leq 5 \times 10^{-7}$ high mass number

Software advantage:

ICP-MS2000 provides the most convenient operating software, very intuitive, comprehensive. The software contains all current analysis methods, including a special isotope ratio and isotope dilution method.

Intelligent selection method, intelligent instrument tuning, QC, various analysis methods combination function, sequence analysis, the function of automatic monitoring, custom report format.