SHIMADZU
Excellence in Science

Parallel Action ICP Spectrometer

ICPE-9800

ICPE-9810 (axial view)
ICPE-9820 (axial/radial view)

Qualitative and precise quantitative analysis without pre-selection of analytical lines

- Registration of all wavelengths of all elements in one measurement without reprogramming the spectrometer.
- Qualitative and semi-quantitative analysis without operator selection of wavelengths.
- Automatic selection of optimal wavelengths without spectral overlaps using a built-in database and powerful software, interelement correction.
- Selection of calibration solution concentrations using software.
- Supplementing the list of elements to be determined without the need for repeated sample measurements.

Vertical mini torch, dual (axial/radial) plasma view

- The vertical burner position minimizes the risk of contamination and clogging, ensuring stable analyses with low operating costs.
- Dual plasma viewing provides the best combination of sensitivity and wide dynamic concentration range.

Minimum operating costs

- Vacuuming the spectrometer, using a mini-burner, and an eco-mode with a gas flow rate of 5 l/min allow us to fundamentally reduce argon consumption.
- The absence of the need to purge the spectrometer allows the use of technical argon 99.95% pure.

Application areas

- Metals/Mining/Engineering
  - Metals and alloys
  - Ores and minerals
  - Glass, ceramics
  - Parts of mechanisms and machines
- Oil/Chemical
  - Oil and oil products
  - Oils and fuels
  - Catalysts
  - Chemical products
- Medicine/biology/food
  - Biological objects
  - Pharmaceuticals
  - Plants
  - Food products

Technical specifications

Plasma Review	Axial or dual (axial/radial)
Sample feed system	Torch: vertical mini torch or regular torch Spray: coaxial Chamber: cyclone type Sample drainage: gravity Peristaltic pump (optional): 4-channel
Gas consumption control	Computer controlled Eco mode: argon flow rate 5.6 l/min Gas purity: 99.95%
RF generator	Frequency: 27 MHz Power: 1.6 kW (0.2 kW step) HF block: transistor Stability: within ±0.3%
Spectrometer	Optical design: Echelle spectrometer Spectral range: 167–800 nm Dispersing elements: diffraction grating and prism Spectral resolution: ≤0.005 nm at 200 nm Spectrometer type: vacuum, thermostatted
Detector	CCD Number of pixels: 1024 x 1024 (1 inch x 1 inch) Pixel size: 20 µm x 20 µm Cooling: Peltier element, computer control
Software	
Qualitative analysis	Analysis using built-in database Automatic selection of wavelengths for each sample
Quantitative analysis: calibration curve method/standard addition method	Continuous analysis using different methods Wavelength measurement all wavelengths for each element automatic selection of optimal wavelength Correction background correction/interelement correction/using internal standard drift correction/dilution correction Issuance of concentrations of calibration samples Diagnostics of the nature of influences Recalculation of results adding elements and wavelengths to be determined after measurements are taken automatic recalculation after changing the method automatic recalculation after changing calibration curves (regression order, calibration curve coefficient, etc.)
User support	Assistant for preparing a method, assistant for checking analysis results
Equipment control	Display of the displayed characteristics on the monitor / vacuum pump status control/plasma status control (on/off)/automatic plasma shutdown after measurement/ autosampler status control (autosampler is optional)

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