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**Calibration Specification for Quadrupole Inductively Coupled
Plasma Mass Spectrometers
(English Translation)**

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9 Re-study interval (6)

Appendix A Calibration Record Format	(7)
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Quadrupole Inductively Coupled Plasma Mass Spectrometer Calibration Specification

1 Scope of application this specification applies to the calibration of the main performance indicators of a quadrupole inductively coupled plasma mass spectrometer. Other types of electricity Calibration of the inductively coupled ion mass spectrometer can be performed with reference to the implementation.

2 Citations

JJF 1001-1998 General Terms and Definitions JJF 1059-1999 "Measurement and Expression of Measurement Uncertainty" JJF 1071-2000 "Rules for the Preparation of National Metrology Calibration Specifications" GB/T 15481-2000 "General requirements for testing and calibration laboratory capabilities" GB/T 6041-2002 General Principles of Mass Spectrometry Methods JJF 1120-2004 "Calibration Specification for Thermal Ionization Isotope Mass Spectrometer" Use of this specification should be done with the current valid version of the above cited documents.

3 terms and units of measure

3.1 Quality range

The mass range represents the mass interval of the element (isotope) that the mass spectrometer can measure, in atomic mass.

Unit u.

3.2 resolution

The resolution is expressed as the peak width at 10% of the peak height of an element, in units of u.

3.3 Detection limit

The minimum limit mass concentration of an element that can be measured by a mass spectrometer. The representation method is n of an element in a blank solution the mass concentration corresponding to the standard deviation of 3 times of the sub-measurement result. Unit $\text{ng} \cdot \text{L}^{-1}$.

3.4 Sensitivity

The signal response (count) obtained by the element concentration unit on the mass spectrometer detector, in units of $\text{Mcps}/(\text{mg} \cdot \text{L}^{-1})$.

3.5 Abundance sensitivity Abundance sensitivity characterizes a strong ion peak of mass M at the adjacent mass M 1 (or M-1) the effect of a front or trailing peak on an adjacent peak. Dimensionless. The abundance sensitivity is expressed by the following formula.

$$\Delta = \frac{I_{M-1}}{I_M}$$

$$\text{Or } \Delta = \frac{I_M - I_{M-1}}{I_M}$$

Where. Δ ---abundance sensitivity, dimensionless;

I_M ---mass is the signal intensity of M strong ion peak, cps;

I_{M-1} ---the tailing signal intensity of the ion peak of mass M at the mass M-1 position, cps;

$I_M - I_{M-1}$ ---Tail signal strength at the mass M 1 position of the ion peak of mass M, cps.