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**Water quality — Application of  
inductively coupled plasma mass  
spectrometry (ICP-MS) —**

**Part 1:  
General guidelines**

*Qualité de l'eau — Application de la spectrométrie de masse avec  
plasma à couplage inductif (ICP-MS) —*

*Partie 1: Lignes directrices générales*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17294-1 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

ISO 17294 consists of the following parts, under the general title *Water quality — Application of inductively coupled plasma mass spectrometry (ICP-MS)*:

- *Part 1: General guidelines*
- *Part 2: Determination of 62 elements*

This corrected version of ISO 17294-1:2004 incorporates correction of symbols for instrument detection limit and method detection limit, corrections to Equations (1) and (3), and various minor editorial corrections.

# Water quality — Application of inductively coupled plasma mass spectrometry (ICP-MS) —

## Part 1: General guidelines

### 1 Scope

This part of ISO 17294 specifies the principles of inductively coupled plasma mass spectrometry (ICP-MS) and provides general directions for the use of this technique for determining elements in water. Generally, the measurement is carried out in water, but gases, vapours or fine particulate matter may be introduced too. This International Standard applies to the use of ICP-MS for water analysis.

The ultimate determination of the elements is described in a separate International Standard for each series of elements and matrix. The individual parts of this International Standards refer the reader to these guidelines for the basic principles of the method and for configuration of the instrument.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the reference document (including any amendments) applies.

ISO Guide 30, *Terms and definitions used in connection with reference materials*

ISO Guide 32, *Calibration in analytical chemistry and use of certified reference materials*

ISO Guide 33, *Uses of certified reference materials*

ISO 3534-1, *Statistics — Vocabulary and symbols — Part 1: Probability and general statistical terms*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

ISO 5725-1, *Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*

ISO 6955, *Analytical spectroscopic methods — Flame emission, atomic absorption and fluorescence — Vocabulary*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5725-1, ISO 6206, ISO 6955 and ISO Guide 32 and the following apply.