
Water quality — Selection and application of ready-to-use test kit methods in water analysis

*Qualité de l'eau — Choix et application des méthodes utilisant des kits
prêts à l'emploi en analyse de l'eau*



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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 17381 was prepared by Technical Committee ISO/TC 147, *Water quality*.

Introduction

In water and waste-water monitoring, an appropriate, standardized procedure exists for practically every parameter to be investigated. However, in certain circumstances, the employment of a simpler, faster and often more economical method is preferred, provided that this does not entail a breach of legislation.

This International Standard refers to methods for the analysis of water samples which can be undertaken outside the analytical laboratory, either on-site or as a field test, when the purpose of the test is to characterize the water under test for either quality or control purposes. In the case of determinands which are unstable after sampling, and which cannot be stabilized, ready-to-use methods provide the most suitable means of obtaining reliable test results. The test methods are simple procedures for use by a non-chemist after suitable training as well as by the trained chemist.

The methods described in this International Standard are not intended as a substitute for, or alternative to, other standards on the quantitative analysis of waters, which remain the reference methods for use in the laboratory.

The choice of the most suitable method depends upon the type of analysis required, and on the necessary quality of the results. This International Standard is intended to set out boundary conditions for selecting a non-standardized analytical method and to define the requirements with regard to both the application and the production of ready-to-use methods.

When applying the information contained in this International Standard, highly specialized expert knowledge is required when selecting suitable methods, whereas less stringent demands are made upon the subsequent application, in particular of simplified methods.

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WARNING — Persons using this standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard gives guidance on the selection, and requirements for the application, of ready-to-use methods in water analysis. The so-called "ready-to-use methods" are of increasing interest because, compared to standard methods, they allow fast and often inexpensive results for analytical problems. Under certain conditions these methods can be applied in routine control of water quality, provided they give reliable results.

This International Standard deals with practical aspects concerning quantitative ready-to-use methods. Statistical evaluations for establishing the equivalence of ready-to-use methods and standard methods are only mentioned briefly.

As the available ready-to-use methods are based on different analytical principles and also show different degrees of accuracy, they are classified into several groups. The aim of this International Standard is to set up criteria as to when the different kinds of ready-to-use methods may be applied for the analysis of distinct parameters in water samples (e.g. potable water, river water, process water, waste water) and which steps are necessary to prove their suitability for a certain application.

Ready-to-use methods have to meet special requirements because they are often used by non-chemists. This International Standard lists requirements for the producers of these tests, concerning safety and environmental aspects as well as handling and a description of the procedure. There are also several requirements concerning the training and supervision of the users of ready-to-use methods.

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 referenced document (including any amendments) applies.

ISO 8466-1, *Water quality — Calibration and evaluation of analytical methods and estimation of performance characteristics — Part 1: Statistical evaluation of the linear calibration function*

ISO 8466-2, *Water quality — Calibration and evaluation of analytical methods and estimation of performance characteristics — Part 2: Calibration strategy for non-linear second-order calibration functions*

ISO/TR 13530, *Water quality — Guide to analytical quality control for water analysis*