
Water quality — Sampling —

Part 14:

Guidance on quality assurance of
environmental water sampling and handling

Qualité de l'eau — Échantillonnage —

*Partie 14: Lignes directrices pour le contrôle de la qualité dans
l'échantillonnage et la manutention des eaux environnementales*



Content

1 Scope 1

2 Normative references 1

3 Definitions 1

4 Sources of sampling error 4

5 Sampling quality control techniques 5

6 Transport, stabilization and storage of samples 12

7 Analysis and interpretation of quality control data 13

8 Sample identification and records 13

Annex A (informative) Control charts 14

Annex B (informative) Bibliography 18

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Foreword

ISO (the International Organization for Standardization) is a world-wide 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.

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.

International Standard ISO 5667-14 was prepared by Technical Committee ISO/TC 147, *Water quality*, Subcommittee SC 6, *Sampling (general methods)*.

ISO 5667 consists of the following parts under the general title *Water quality — Sampling*:

- *Part 1: Guidance on the design of sampling programmes*
- *Part 2: Guidance on sampling techniques*
- *Part 3: Guidance on the preservation and handling of samples*
- *Part 4: Guidance on sampling from lakes*
- *Part 5: Guidance on sampling of drinking water*
- *Part 6: Guidance on sampling of rivers and streams*
- *Part 7: Guidance on sampling of water and steam in boiler plants*
- *Part 8: Guidance on sampling of wet deposition*
- *Part 9: Guidance on sampling from marine waters*
- *Part 10: Guidance on sampling of waste waters*
- *Part 11: Guidance on sampling of groundwaters*
- *Part 12: Guidance on sampling of bottom sediments*
- *Part 13: Guidance on sampling of water, wastewater and related sludges*
- *Part 14: Guidance on quality assurance of environmental water sampling and handling*

Annexes A and B of this part of ISO 5667 are for information only.

Introduction

Quality control procedures are required for the collection of environmental water samples for the following reasons:

- a) to monitor the effectiveness of sampling methodology;
- b) to demonstrate that the various stages of the sample collection process are adequately controlled and suited to the intended purpose, including adequate control over sources of error such as sample contamination, loss of determinand and sample instability. To achieve this quality control procedures should provide a means of detecting sampling error and hence a means of rejecting invalid or misleading data resulting from the sampling process ;
- c) to quantify and control the sources of error which arise in sampling. Quantification gives a guide to the significance that sampling plays in the overall accuracy of data;
- d) to provide information on suitably abbreviated quality assurance procedures that may be used for rapid sampling operations such as pollution incidents or groundwater investigations.

This part of ISO 5667 is one of a group of International Standards dealing with the sampling of waters. It should be read in conjunction with the other parts of ISO 5667 and in particular with Parts 1, 2 and 3.

The general terminology is in accordance with that published in ISO/TC 147, *Water quality*, and more particularly with the terminology on sampling given in ISO 6107-2.

WARNING: Consider and minimize any risks and obey safety rules. See ISO 5667-1 for certain safety precautions, including sampling from boats and from ice-covered waters.

1 Scope

This part of ISO 5667 provides guidance on the selection and use of various quality assurance techniques relating to the manual sampling of surface, potable, waste, marine and ground waters;

NOTE The general principles outlined in this part of ISO 5667 in some circumstances may be applicable to sludge and sediment sampling.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5667. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5667 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5667-1:1980, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes.*

ISO 5667-3:1985, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples.*

3 Definitions

For the purposes of this part of ISO 5667, the following definitions apply.

3.1

accuracy

closeness of agreement between a test result and the accepted reference value

[ISO 3534-1]

NOTE The term accuracy, when applied to a set of test results, involves a combination of random and systematic error or bias components.

3.2

bias

difference between the expectation of the test results and an accepted reference value

[ISO 3534-1]