

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

BS ISO 15923-1:2013



BSI Standards Publication

Water quality — Determination of selected parameters by discrete analysis systems

Part 1: Ammonium, nitrate, nitrite, chloride, orthophosphate, sulfate and silicate with photometric detection

bsi.

...making excellence a habit.™

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of ISO 15923-1:2013.

The UK participation in its preparation was entrusted to Technical Committee EH/3/2, Physical chemical and biochemical methods.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013. Published by BSI Standards Limited 2013

ISBN 978 0 580 70683 7

ICS 13.060.50

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2013.

Amendments issued since publication

Date	Text affected
------	---------------

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

First edition
2013-12-15

Water quality — Determination of selected parameters by discrete analysis systems —

Part 1:

Ammonium, nitrate, nitrite, chloride, orthophosphate, sulfate and silicate with photometric detection

Qualité de l'eau — Détermination de paramètres sélectionnés par des systèmes d'analyse discrète —

Partie 1: Ammonium, nitrate, nitrite, chlorure, orthophosphate, sulfate et silicate par détection photométrique



Reference number
ISO 15923-1:2013(E)

© ISO 2013

This is a preview of "BS ISO 15923-1:2013". Click here to purchase the full version from the ANSI store.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Principle	1
4 Interferences	2
5 Reagents	2
6 Apparatus	2
7 Sampling and sample preparation	2
8 Calibration	3
8.1 Calibration function.....	3
8.2 Calibration validity check.....	3
9 Procedure	3
10 Calculation	4
11 Expression of results	4
12 Test report	4
Annex A (normative) Correction for inherent colour	6
Annex B (normative) Determination of ammonium	7
Annex C (normative) Determination of the sum of nitrate and nitrite by the hydrazine method	9
Annex D (normative) Determination of nitrite	12
Annex E (normative) Determination of chloride by the thiocyanate method	14
Annex F (normative) Determination of orthophosphate	16
Annex G (normative) Determination of sulfate by the turbidimetric method	19
Annex H (normative) Determination of silicate	21
Annex I (informative) Performance data	23
Bibliography	25

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 147, *Water quality*, Subcommittee SC 2, *Physical, chemical and biochemical methods*.

ISO 15923 consists of the following parts, under the general title *Water quality — Determination of selected parameters by discrete analysis systems*:

— *Part 1: Ammonium, nitrate, nitrite, chloride, orthophosphate, sulfate and silicate with photometric detection*

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

Introduction

Many photometric determinations can be automated with a discrete analysis system. With one single apparatus, a large number of different parameters can be determined, and the parameters to be determined can be specified for each sample. Working with small volumes requires less sample material and reagent.

Samples that fall beyond the normal measuring range can either be automatically diluted or measured again with a different measuring range.

This part of ISO 15923 specifies methods for the automatic determination of ammonium, nitrate, nitrite, chloride, orthophosphate, and silicate with photometric detection and a turbidimetric determination of sulfate using a discrete analysis system. The field of application is water (ground, potable, surface, waste, eluates, and boiler water).

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

This is a preview of "BS ISO 15923-1:2013". [Click here to purchase the full version from the ANSI store.](#)

Water quality — Determination of selected parameters by discrete analysis systems —

Part 1:

Ammonium, nitrate, nitrite, chloride, orthophosphate, sulfate and silicate with photometric detection

WARNING — Persons using this part of ISO 15923 should be familiar with normal laboratory practice. This part of ISO 15923 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.

IMPORTANT — It is absolutely essential that tests conducted in accordance with this part of ISO 15923 be carried out by suitably qualified staff.

1 Scope

This part of ISO 15923 specifies methods for the automatic performance of spectrophotometric and turbidimetric analyses with a discrete analysis system for determining ammonium, nitrate, nitrite, chloride, orthophosphate, sulfate, and silicate. The field of application is ground, potable, surface, waste, eluates, and boiler water.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 5667-3, *Water quality — Sampling — Part 3: Preservation and handling of water samples*

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*

3 Principle

A discrete analysis system is an automated system for spectrophotometric and turbidimetric determinations.

The colour reactions take place in reaction cells, which may be cuvettes, in an incubator. For each determination, a separate reaction cell is used. Preset volumes of the sample and the reagents are pipetted into the cells and mixed.

After expiry of the incubation period, the absorbance of the solution is measured at the wavelength applicable to the determination. This is done by passing the cuvettes through the photometer or by transferring the measuring solution from the reaction cells to a photometer with a flow-through cell.