

**VEE KVALITEET. FOSFAADI MÄÄRAMINE. AMMOONIUM
MOLÜBDAADI SPEKTROFOTOMEETRILINE MEETOD**

**Water quality - Determination of phosphorus -
Ammonium molybdate spectrometric method**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN ISO 6878:2004 sisaldab Euroopa standardi EN ISO 6878:2004 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 6878:2004 consists of the English text of the European standard EN ISO 6878:2004.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.06.2004.	Date of Availability of the European standard is 01.06.2004.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.060.50

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Aru 10, 10317 Tallinn, Estonia; homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

English version

Water quality - Determination of phosphorus - Ammonium
molybdate spectrometric method (ISO 6878:2004)

Qualité de l'eau - Dosage du phosphore - Méthode
spectrométrique au molybdate d'ammonium (ISO
6878:2004)

This European Standard was approved by CEN on 21 May 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Interferences	1
3 Principle	1
4 Determination of orthophosphate	2
5 Determination of orthophosphate after solvent extraction	7
6 Determination of hydrolysable phosphate and orthophosphate	9
7 Determination of total phosphorus after peroxodisulfate oxidation	11
8 Determination of total phosphorus after nitric acid-sulfuric acid digestion	14
Annex A (informative) Interferences	17
Annex B (informative) Precision data	19
Bibliography	21

Introduction

This International Standard specifies the determination of different forms of phosphorus compounds present in ground, surface and waste waters in various concentrations in the dissolved and undissolved state.

The user should be aware that particular problems could require the specification of additional marginal conditions.

Water quality — Determination of phosphorus — Ammonium molybdate spectrometric method

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This International 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. It is absolutely essential that tests conducted according to this International Standard be carried out by suitably qualified staff. Molybdate and antimony waste solutions should be disposed of properly.

1 Scope

This International Standard specifies methods for the determination of

- orthophosphate (see Clause 4);
- orthophosphate after solvent extraction (see Clause 5);
- hydrolysable phosphate plus orthophosphate (see Clause 6);
- total phosphorus after decomposition (see Clauses 7 and 8).

The methods are applicable to all kinds of water including seawater and effluents. Phosphorus concentrations within the range of 0,005 mg/l to 0,8 mg/l may be determined in such samples without dilution.

A solvent extraction procedure allows smaller phosphorus concentrations to be determined with a detection limit of about 0,000 5 mg/l.

2 Interferences

See Annex A for some known interferences. There may be others and it is recommended to verify whether any such interferences exist and take action to eliminate them.

3 Principle

Reaction of orthophosphate ions with an acid solution containing molybdate and antimony ions to form an antimony phosphomolybdate complex.

Reduction of the complex with ascorbic acid to form a strongly coloured molybdenum blue complex. Measurement of the absorbance of this complex to determine the concentration of orthophosphate present.

Polyphosphate and some organophosphorus compounds are determined if converted to molybdate reactive orthophosphate formed by sulfuric acid hydrolysis.

Many organophosphorus compounds are converted to orthophosphate by mineralization with peroxodisulfate. Nitric acid-sulfuric acid mineralization is used if a more vigorous treatment is required.