

**Water quality - Determination of
parathion, parathion-methyl and some
other organophosphorus compounds in
water by dichloromethane and gas
chromatographic analysis**

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compounds in water by dichloromethane and gas
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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12918:2000 sisaldab Euroopa standardi EN 12918:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12918:2000 consists of the English text of the European standard EN 12918:1999.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European standard specifies the extraction processes and gas chromatographic (GC) methods for determining parathion, parathion-methyl and some other organophosphorus compounds in drinking waters, surface waters and waste waters. This standard may also be suitable for the determination of other organic compounds.</p>	<p>Scope:</p> <p>This European standard specifies the extraction processes and gas chromatographic (GC) methods for determining parathion, parathion-methyl and some other organophosphorus compounds in drinking waters, surface waters and waste waters. This standard may also be suitable for the determination of other organic compounds.</p>
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ICS 13.060.50

Võtmesõnad: dichloromethane extraction, gas chromatographic analysis, organophosphorus compounds, parathion, parathion-methyl

English version

Water quality

Determination of parathion, parathion-methyl and some other organophosphorus compounds in water by dichloromethane extraction and gas chromatographic analyses

Qualité de l'eau – Dosage du parathion, méthyl-parathion et certains autres composés organophosphorés dans les eaux après extraction au dichlorométhane et analyse par chromatographie en phase gazeuse

Wasserbeschaffenheit – Bestimmung von Parathion, Parathion-methyl und einigen anderen Organophosphor-Verbindungen in Wasser mittels Dichlormethan-Extraktion und gaschromatographischer Analyse

This European Standard was approved by CEN on 1999-07-23.

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.

The European Standards exist 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 230 "Water analysis", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Annexes designated "informative" are only given for information. In this Standard annexes A, B, and C are informative.

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1 Scope

This European Standard specifies the extraction processes and gas chromatographic (GC) methods for determining parathion, parathion-methyl and some other organophosphorus compounds in drinking waters, surface waters and waste waters. This standard can also be suitable for the determination of other organic compounds.

The range is dependent on the compound and the source of water and is typically up to 1 µg/l with a reporting limit of 0,01 µg/l for drinking waters involving a 1 000 to 1 extraction ratio.

Extraction efficiencies are normally less than 100 %. Bias will vary with the extraction efficiency of any particular compound, the type of water and the method used.

Annex A contains a table of organophosphorus compounds and their recoveries.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication applies.

EN 1528-3:1996

Fatty food – Determination of pesticides and polychlorinated biphenyls (PCBs) – Part 3 : Clean-up methods

ENV ISO 13530

Water quality - Guide to analytical quality control for water analysis (ISO/TR 13530:1997)

EN 25667-1

Water quality – Sampling – Part 1: Guidance on the design of sampling programmes (ISO 5667-1:1980)

EN 25667-2

Water quality – Sampling – Part 2: Guidance on sampling techniques (ISO 5667-2:1991)

ISO 5667-5

Water quality – Sampling – Part 5: Guidance on sampling of drinking water and water used for food and beverage processing

ISO 5667-6

Water quality – Sampling – Part 6: Guidance on sampling of rivers and streams

ISO 5667-8

Water quality – Sampling – Part 8: Guidance on the sampling of wet deposition

ISO 5667-9

Water quality – Sampling – Part 9: Guidance on sampling from marine waters

ISO 5667-10

Water quality – Sampling – Part 10: Guidance on sampling from waste waters

ISO 5667-11

Water quality – Sampling – Part 11: Guidance on sampling of groundwaters

3 Principle

The organophosphorus compounds are extracted by dichloromethane.

The dried extracts are concentrated by evaporation to a suitable volume before injection into a gas chromatograph for quantitative analysis.

4 Interferences

Surfactants, emulsifiers, chelating agents and solvents can affect the extraction stage.

Suspended particles in the water can also reduce the recovery.

Other liquid phases in the sample (e.g. mineral oil, hydrocarbons, emulsified fats and waxes) can affect sampling, extraction and enrichment stages. In those cases the analysis is restricted to the aqueous phase and the portion of the non-aqueous phase is reported separately.