

## **Rasvased toiduained. Pestitsiidide ja polüklorobifenüülide määramine. Osa 1: Üldine**

Fatty food - Determination of pesticides and polychlorinated biphenyls (PCBs) - Part 1: General

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1528-1:2000 sisaldab Euroopa standardi EN 1528-1:1996 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 19.07.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1528-1:2000 consists of the English text of the European standard EN 1528-1:1996.</p> <p>This document is endorsed on 19.07.2000 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><b>Käsitlusala:</b></p> <p>See Euroopa standard määrab kindlaks meetodid pestitsiidide ja polüklorobifenüülide jääkide määramiseks rasvases toidus. Iga selles Euroopa standardis kirjeldatud meetod sobib nende mittepolaarsete kloororgaaniliste ja/või fosfororgaaniliste pestitsiidide kvalitatiivseks ja kvantitatiivseks analüüsiks, mida võib leiduda jäägina nii taimse kui ka loomse päritoluga rasvade ja õlides ning rasva sisaldavates toiduainetes.</p>	<p><b>Scope:</b></p>
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**ICS** 67.050

**Võtmesõnad:** gaasikromatograafia, keemiline analüüs, pestitsiidid, polüklorobifenüül, sisalduse määramine, toiduainetooted, toidurasvad, üldreeglid

ICS 67.040

Descriptors: Fatty food, pesticides, polychlorinated biphenyls, analysis.

**English version**

**Fatty food**

**Determination of pesticides and polychlorinated biphenyls (PCBs)**

**Part 1: General**

Aliments gras – Dosage des pesticides et  
des polychlorobiphényles (PCB) – Partie 1:  
Généralités

Fetteiche Lebensmittel – Bestimmung von  
Pestiziden und polychlorierten Biphenylen  
(PCB) – Teil 1: Allgemeines

This European Standard was approved by CEN on 1996-10-27.

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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

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

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### Foreword

This European Standard has been prepared by Technical Committee CEN/TC 275 "Food analysis, horizontal methods", 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 May 1997, and conflicting national standards shall be withdrawn at the latest by May 1997.

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

This European Standard consists of the following Parts:

Part 1 "General" presents the scope of the standard and describes general considerations with regard to reagents, apparatus, gas chromatography etc., applying to each of the analytical methods selected.

Part 2 "Extraction of fat, pesticides and PCBs, and determination of fat content" presents a range of analytical procedures for extracting the fat portion containing the pesticide and PCB residues from different groups of fat-containing foodstuffs.

Part 3 "Clean-up methods" presents the details of methods A to H for the clean-up of fats and oils or the isolated fat portion, respectively, using techniques such as liquid/liquid partition, adsorption or gel permeation column chromatography.

Part 4 "Determination, confirmatory tests, miscellaneous" gives guidance on some recommended techniques for the determination of pesticides and PCBs in fatty foodstuffs and on confirmatory tests and lists a clean-up procedure for the removal of the bulk of lipids when analysing large quantities of fat.

## Introduction

This European Standard comprises a range of multi-residue methods of equal status: no single method can be identified as the prime method because, in this field, methods are continuously developing. The methods selected for inclusion in this standard have been validated and are widely used throughout Europe. Any variation in the methods used should be shown to give comparable results.

## 1 Scope

This European Standard specifies methods for the determination of residues of pesticides and polychlorinated biphenyls (PCBs) in fatty food.

Each method described in this European Standard is suitable for identifying and quantifying a definite range of those non-polar organochlorine and/or organophosphorus pesticides which occur as residues in fats and oils as well as in the fat portion of fat-containing foodstuffs, both of either animal or vegetable origin. The PCB indicator congeners usually selected for the enforcement of maximum residue limits (MRLs) are determined along with the organochlorine pesticides.

This European Standard contains the following clean-up methods that have been subjected to interlaboratory studies and are adopted throughout Europe:

- Method A: Liquid-liquid partitioning with acetonitrile and clean-up on a Florisil<sup>®1)</sup> column (AOAC) [1]
- Method B: Liquid-liquid partitioning with dimethylformamide and clean-up on a Florisil<sup>®</sup> column (Specht) [2]
- Method C: Column chromatography on activated Florisil<sup>®</sup> (AOAC) [3]
- Method D: Column chromatography on partially deactivated Florisil<sup>®</sup> (Stijve) [4]
- Method E: Column chromatography on partially deactivated aluminium oxide (Greve & Grevenstuk) [5]
- Method F: Gel permeation chromatography (GPC) (AOAC) [6]
- Method G: Gel permeation chromatography (GPC) and column chromatography on partially deactivated silica gel (Specht) [7]
- Method H: High performance gel permeation chromatography (HPGPC) (MAFF) [8]

The applicability of the eight methods A to H for residue analysis of organochlorine pesticides, PCB indicator congeners, and organophosphorus pesticides, respectively, is given in table A.1. Where no + sign is shown, there are no data available in literature, but this does not necessarily exclude the applicability.

## 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 referred to applies.

ISO 1750

Pesticides and other agrochemicals - Common names

EN 1528-2 : 1996

Fatty food - Determination of pesticides and polychlorinated biphenyls (PCBs) - Part 2: Extraction of fat, pesticides and PCBs, and determination of fat content

EN 1528-3 : 1996

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

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<sup>1)</sup> Florisil<sup>®</sup> is an example of a suitable product available commercially. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of the product named.