

**Rasvased toiduained. Pestitsiidide ja polüklorobifenüülide määramine. Osa 2: Rasvade, pestitsiidide ja polüklorobifenüülide ekstraheerimine ja rasvasisalduse määramine**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1528-2:2000 sisaldab Euroopa standardi EN 1528-2:1996 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 1528-2:2000 consists of the English text of the European standard EN 1528-2:1996.</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> See EN 1528 osa määrab kindlaks valiku analüütilisi protseduure mitmesugustest rasva sisaldavatest toiduainetest selle rasva osa ekstraheerimiseks, mis sisaldab pestitsiidide ja polüklorobifenüülide (PCB) jääke.</p>	<p><b>Scope:</b></p>
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**ICS** 67.050

**Võtmesõnad:** ekstraheerimine, keemiline analüüs, pestitsiidid, polüklorobifenüül, rasvad, sisalduse määramine, toiduainetooted, toidurasvad

ICS 67.040

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

**English version**

**Fatty food**

Determination of pesticides and polychlorinated biphenyls (PCBs)

Part 2: Extraction of fat, pesticides and PCBs,  
and determination of fat content

Aliments gras – Dosage des pesticides et des polychlorobiphényles (PCB) – Partie 2: Extraction de la matière grasse, des pesticides et des PCB, et détermination de la teneur en matière grasse

Fetteiche Lebensmittel – Bestimmung von Pestiziden und polychlorierten Biphenylen (PCB) – Teil 2: Extraktion des Fettes, der Pestizide und PCB und Bestimmung des Fettgehaltes

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.

The residues to be analysed in this European Standard are associated with the fat portion of the samples.

In many cases, the residues are expressed in milligrams of pesticide per kilogram of fat (see clause 11 of EN 1528-1 : 1996). In such cases, it is not necessary to determine the fat content of the product, but to measure the residues in a known mass of extracted fat. With all other products, residue levels are reported on a whole product basis and therefore it is necessary to determine the percentage of fat in the product.

## 1 Scope

This Part of EN 1528 specifies a range of analytical procedures for extracting the fat portion containing the pesticide and polychlorinated biphenyl (PCB) residues from different groups of fat-containing foodstuffs.

## 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.

EN 1528-1:1996

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

EN 1528-3:1996

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

EN 1528-4:1996

Fatty food - Determination of pesticides and polychlorinated biphenyls (PCBs) - Part 4: Determination, confirmatory tests, miscellaneous

## 3 Principle

Extraction of the residues from the sample matrix by the use of appropriate solvents, so as to obtain the maximum efficiency of extraction of the residue and minimum co-extraction of any substances which can give rise to interferences in the determination. Removal of the solvents by evaporation and, optionally, determination of the fat content by weighing out the mass of the remainder.

## 4 Reagents and materials

All reagents and materials used shall be suitable for the analysis of residues of pesticides and PCBs and shall be in accordance with clause 4 in EN 1528-1 : 1996. If purification is necessary, the procedures given in annex A are appropriate.

4.1 Acetone.

4.2 Acetonitrile.

4.3 Diethyl ether, peroxide-free.

4.4 Dichloromethane.

4.5 Extraction mixture: Acetonitrile (4.2) + Dichloromethane (4.4) 75:25 (V/V).

4.6 Light petroleum, having a boiling range from 40 °C to 60 °C.

4.7 Methanol or ethanol.

4.8 *n*-hexane.