

**Toiduained. Rasva sisaldava kiiritatud
toiduaine väljaselgitamine. 2-
alküülsüklobutanooni
gaasikromatograafiline /
massispektromeetriline analüüs**

Foodstuffs - Detection of irradiated food containing
fat - Gas chromatographic/mass spectrometric
analysis of 2- alkylcyclobutanones

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1785:2003 sisaldab Euroopa standardi EN 1785:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 17.09.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1785:2003 consists of the English text of the European standard EN 1785:2003.</p> <p>This document is endorsed on 17.09.2003 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 a method for the identification of irradiation treatment of food containing fat. It is based on the mass spectrometric (MS) detection of radiation-induced 2-alkylcyclobutanones after gas chromatographic (GC) separation [1] to [3]. The method has been successfully tested in interlaboratory trials on raw chicken, pork, liquid whole egg, salmon and Camembert [4] to [8]. Other studies demonstrate that the method is applicable to a wide range of foodstuffs [9] to [21]</p>	<p>Scope:</p> <p>This European Standard specifies a method for the identification of irradiation treatment of food containing fat. It is based on the mass spectrometric (MS) detection of radiation-induced 2-alkylcyclobutanones after gas chromatographic (GC) separation [1] to [3]. The method has been successfully tested in interlaboratory trials on raw chicken, pork, liquid whole egg, salmon and Camembert [4] to [8]. Other studies demonstrate that the method is applicable to a wide range of foodstuffs [9] to [21]</p>
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Võtmesõnad:

English version

Foodstuffs - Detection of irradiated food containing fat - Gas chromatographic/mass spectrometric analysis of 2-alkylcyclobutanones

Produits alimentaires - Détection d'aliments ionisés
contenant des lipides - Analyse par chromatographie en
phase gazeuse / Spectrométrie de masse des 2-
alkylcyclobutanones

Lebensmittel - Nachweis von bestrahlten fetthaltigen
Lebensmitteln - Gaschromatographisch /
massenspektrometrische Untersuchung auf 2-
Alkylcyclobutanone

This European Standard was approved by CEN on 20 June 2003.

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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 Management Centre has the same status as the official versions.

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



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Foreword

This document (EN 1785:2003) 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 February 2004, and conflicting national standards shall be withdrawn at the latest by February 2004.

This document supersedes EN 1785:1996.

This European Standard was elaborated on the basis of a protocol during a concerted action of the European Commission (DG XII C.5). Experts and laboratories from E.U. and EFTA countries, contributed jointly to the development of this protocol.

The predecessor of the present standard (EN 1785:1996) has been elaborated following a mandate of the European Commission.

Annex A is informative.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies a method for the identification of irradiation treatment of food containing fat. It is based on the mass spectrometric (MS) detection of radiation-induced 2-alkylcyclobutanones after gas chromatographic (GC) separation [1] to [3].

The method has been successfully tested in interlaboratory trials on raw chicken, pork, liquid whole egg, salmon and Camembert [4] to [8].

Other studies demonstrate that the method is applicable to a wide range of foodstuffs [9] to [21].

2 Normative references

This European Standard incorporates by dated or undated references, 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 (including amendments).

EN ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*.

3 Principle

During irradiation, the acyl-oxygen bond in triglycerides is cleaved and this reaction results in the formation of 2-alkylcyclobutanones containing the same number of carbon atoms as the parent fatty acid and the alkyl group is located in ring position 2. Thus, if the fatty acid composition is known, the 2-alkylcyclobutanones formed can be predicted.

The 2-alkylcyclobutanones which were analysed in interlaboratory studies were 2-dodecylcyclobutanone (DCB) and 2-tetradecylcyclobutanone (TCB) which are formed from palmitic and stearic acid, respectively, during irradiation. To date, there is no evidence that the 2-alkylcyclobutanones can be detected in unirradiated foods [4],