

**Animal and vegetable fats and oils -  
Determination of cadmium content by  
direct graphite furnace atomic absorption  
spectrometry**

Animal and vegetable fats and oils - Determination  
of cadmium content by direct graphite furnace  
atomic absorption spectrometry

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 15774:2003 sisaldab Euroopa standardi EN ISO 15774:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.02.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 15774:2003 consists of the English text of the European standard EN ISO 15774:2002.</p> <p>This document is endorsed on 18.02.2003 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><b>Käsitlusala:</b> This International Standard describes a method for the determination of trace amounts (8micrograms per kilogram) of cadmium in all types of crude of refined edible oils and fats.</p>	<p><b>Scope:</b> This International Standard describes a method for the determination of trace amounts (8micrograms per kilogram) of cadmium in all types of crude of refined edible oils and fats.</p>
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ICS 67.200.10

**Võtmesõnad:** acoustics, definition, definitions, determination, machines, manual controls, measurement, noise, noise emissions, noise measurements, pedestrian-controlled systems, precision, sound pressure level

**English version**

**Animal and vegetable fats and oils**

Determination of cadmium content by direct graphite furnace  
atomic absorption spectrometry  
(ISO 15774 : 2000)

Corps gras d'origines animale et  
végétale – Détermination de la  
teneur en cadmium par spectrométrie  
d'absorption atomique à four graphite  
(ISO 15774 : 2000)

Tierische und pflanzliche Fette  
und Öle – Bestimmung von  
Cadmium mit Direkt-Graphitofen-  
Atomabsorptionsspektrometrie  
(ISO 15774 : 2000)

This European Standard was approved by CEN on 2001-06-23.

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 Management Centre 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 Management Centre 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

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

## Foreword

International Standard

ISO 15774 : 2000 Animal and vegetable fats and oils – Determination of cadmium content by direct graphite furnace atomic absorption spectrometry,

which was prepared by ISO/TC 34 'Agricultural food products' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 307 'Oilseeds, vegetable and animal fats and oils and their by-products – Methods of sampling and analysis', the Secretariat of which is held by AFNOR, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by February 2002 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

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.

## Endorsement notice

The text of the International Standard ISO 15774 : 2000 was approved by CEN as a European Standard without any modification.

## 1 Scope

This International Standard describes a method for the determination of trace amounts (micrograms per kilogram) of cadmium in all types of crude or refined edible oils and fats.

## 2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, this publication do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 3696, *Water for analytical laboratory use — Specification and test methods*.

## 3 Principle

The oil or fat is incinerated and atomized in a suitable graphite tube furnace with a platform connected to an atomic absorption spectrometer, previously calibrated using standard solutions of an organo-compound of cadmium. The metal content is determined from the observed absorption at a wavelength of 228,8 nm. Palladium is added as a matrix modifier in order to prevent loss of cadmium during the thermal pretreatment.

## 4 Reagents

Use only reagents of recognized analytical grade, unless otherwise specified.

- 4.1 **Water**, of grade 1 according to ISO 3696.
- 4.2 **Cyclohexane**.
- 4.3 **Hydrochloric acid**.
- 4.4 **Palladium chloride**.
- 4.5 **Matrix modifier**, 0,1 % (mass/volume) palladium solution.

Dissolve 0,167 g of palladium chloride (4.4) in 50 ml water (4.1) in a 100 ml volumetric flask (5.4), adding 1 ml hydrochloric acid (4.3) and making up to volume with water.

- 4.6 **Vegetable oil**, refined.