SLOVENSKI STANDARD
SIST EN ISO 8534:2009

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Nadomeģ a:
SIST ISO 8534:1998

Ģivalske in rastlinske maģ obe in olja - Dolo evanje vode - Karl Fischerjeva metoda (brez piridina) (ISO 8534:2008)

Animal and vegetable fats and oils - Determination of water content - Karl Fischer method (pyridine free) (ISO 8534:2008)

Tierische und pflanzliche Fette und Öle - Bestimmung des Wassergehalts - Karl-Fischer-Verfahren (pyridinfrei) (ISO 8534:2008)

Corps gras d'origines animale et végétale - Détermination de la teneur en eau - Méthode de Karl Fischer (sans pyridine) (ISO 8534:2008)

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ICS:

67.200.10	Rastlinske in ģivalske maģ obe in olja	Animal and vegetable fats and oils

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English Version

Animal and vegetable fats and oils - Determination of water content - Karl Fischer method (pyridine free) (ISO 8534:2008)

Corps gras d'origines animale et végétale - Détermination de la teneur en eau - Méthode de Karl Fischer (sans pyridine) (ISO 8534:2008)

Tierische und pflanzliche Fette und Öle - Bestimmung des Wassergehalts - Karl-Fischer-Verfahren (pyridinfrei) (ISO 8534:2008)

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Foreword

This document (EN ISO 8534:2008) has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" in collaboration with 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.

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of an identical text or by endorsement, at the latest by January 2009, and conflicting national standards shall be withdrawn at the latest by January 2009.

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The text of ISO 8534:2008 has been approved by CEN as a EN ISO 8534:2008 without any modification.

INTERNATIONAL STANDARD

ISO 8534

Second edition
2008-07-01

Animal and vegetable fats and oils — Determination of water content — Karl Fischer method (pyridine free)

Corps gras d'origines animale et végétale — Détermination de la teneur en eau — Méthode de Karl Fischer (sans pyridine)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 8534 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

This second edition cancels and replaces the first edition (ISO 8534:1996), which has been technically revised.

Introduction

The determination of the water content of fats and oils according to Karl Fischer is carried out by two different procedures. This International Standard specifies the volumetric Karl Fischer method for the determination of higher milligram levels of water (high level moisture). It is used for samples having between 1 mg and 100 mg of water in the sample.

Annex B specifies a coulometric titration, which requires between 10 µg and 10 mg water in the sample. The coulometric method is more sensitive than the volumetric method and permits the determination of lower water contents.

Animal and vegetable fats and oils — Determination of water content — Karl Fischer method (pyridine free)

1 Scope

This International Standard specifies a method for the determination of the water content of animal and vegetable fats and oils (hereinafter referred to as fats) using Karl Fischer apparatus and a reagent which is free of pyridine.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 661, *Animal and vegetable fats and oils — Preparation of test sample*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
water content
mass, in grams per 100 g of sample, of water as determined in accordance with the method specified in this International Standard

NOTE The water content is expressed as a percentage mass fraction.

4 Principle

Dissolved fat is titrated against an iodine solution and sulfur dioxide (SO_2) is oxidized by iodine in the presence of water. In principle, the chemical reaction in Equation (1) takes place:

$$H_2O + I_2 + SO_2 + CH_3OH + 3RN \rightarrow [RNH]SO_4CH_3 + 2[RNH]I \quad (1)$$

The alcohol reacts with SO_2 and a nitrogenous base (RN) to form an intermediate alkylsulfite salt, which is then oxidized by iodine to an alkylsulfate salt. This oxidation reaction consumes water contained in the sample. The end point is monitored potentiometrically.

5 Reagents

WARNING — Comply with any local regulations which specify the handling of hazardous substances. Technical, organizational and personal safety measures shall be followed.

It is recommended that “ready for use” working solvents be used, either one-component reagents (5.1.1) or two-component reagents (5.1.2). Reagents with a titre of 1 mg and 2 mg water per millilitre are required for acceptable performance.