



SLOVENSKI STANDARD

SIST EN ISO 9289:1998

01-november-1998

Ostanki oljnih semen - Določevanje ostanka prostega heksana (ISO 9289:1991)

Oilseed residues - Determination of free residual hexane (ISO 9289:1991)

Ölsaatrückstände (Extraktionsschrote) - Bestimmung des freien Resthexans (ISO 9289:1991)

Tourteaux de graines oléagineuses - Dosage de l'hexane résiduaire libre (ISO 9289:1991)

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Ta slovenski standard je istoveten z: **EN ISO 9289:1995**

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ICS:

67.200.20 Oljnice Oilseeds

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en

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EUROPEAN STANDARD

EN ISO 9289

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

**Oilseed residues - Determination of free residual
hexane (ISO 9289:1991)**Tourteaux de graines oléagineuses - Dosage de
l'hexane résiduaire libre (ISO 9289:1991)Ölsaarückstände (Extraktionsschrote) -
Bestimmung des freien Resthexans
(ISO 9289:1991)**(standards.iteh.ai)**

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This European Standard was approved by CEN on 1995-05-24. 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.

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 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 United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

The text of the International Standard from ISO/TC 34 "Agricultural food products" of the International Organization for Standardization (ISO) has been taken over as a European Standard by the Technical Committee CEN/TC 307 "Oilseeds; vegetable and animal fats and oils and their by-products - Methods of sampling and analysis".

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 1996, and conflicting national standards shall be withdrawn at the latest by February 1996.

According to CEN/CENELEC Internal Regulations, 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.

Endorsement notice

The text of the International Standard ISO 9289:1991 has been approved by CEN as a European Standard without any modification.

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INTERNATIONAL STANDARD

ISO
9289

First edition
1991-07-15

Oilseed residues — Determination of free residual hexane

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*Tourteaux de graines oléagineuses — Dosage de l'hexane résiduaire
libre*
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Reference number
ISO 9289:1991(E)

ISO 9289:1991(E)

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.

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.

International Standard ISO 9289 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

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Introduction

The amount of hexane which can be desorbed rapidly from an oilseed residue by heating is not necessarily equal to the total amount of residual hexane determined in accordance with ISO 8892:1987, *Oilseed residues — Determination of total residual hexane*.

The “free residual hexane” is the amount of hexane desorbed by direct heating of the oilseed residue without a preceding humidification of the sample.

The difference between the total residual hexane and the free residual hexane depends on several factors. In general, it increases with decreasing humidity of the oilseed residue examined, i.e. with increasing dryness of the oilseed residue.

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Oilseed residues — Determination of free residual hexane

1 Scope

This International Standard specifies a method for the determination of the free residual hexane content in oilseed residues after extraction with hydrocarbon-based solvents.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5500:1986, *Oilseed residues — Sampling*.

3 Definition

For the purposes of this International Standard, the following definition applies.

free residual hexane: Proportion of volatile hydrocarbons, referred to generally as hexane, remaining in oilseed residues after extraction with hydrocarbon-based solvents and which is desorbed directly by heating at 80 °C without the addition of water.

It is expressed as milligrams of *n*-hexane per kilogram of sample.

4 Principle

Desorption of hexane by heating at 80 °C in a closed vessel after addition of an internal standard. Determination of the hexane content in the head-space by gas chromatography using capillary or packed columns.

5 Reagents and materials

All reagents shall be of recognized analytical grade unless otherwise stated.

5.1 Technical hexane or light petroleum, with a composition similar to that used in the industrial extraction of oilseeds or, failing these, ***n*-hexane**.

NOTE 1 It is recommended that technical hexane be used for the calibration. This reagent usually contains more than 50 % of *n*-hexane and consists predominantly of C₆ isomers.

5.2 Internal standard: use either 5.2.1 or 5.2.2.

NOTE 2 If the technical hexane used for the extraction or calibration contains appreciable amounts of cyclohexane, *n*-heptane should be used as the internal standard.

5.2.1 Cyclohexane.

5.2.2 *n*-Heptane.

5.3 Carrier gas, e.g. hydrogen, nitrogen, helium, etc., thoroughly dried and containing less than 10 mg/kg of oxygen.

5.4 Auxiliary gases.

5.4.1 Hydrogen, 99,9 % pure, containing no organic impurities.

5.4.2 Air, containing no organic impurities.

5.5 Calibration oilseed residues, of the same origin as the sample to be analysed and having a low hexane content. If the hexane content is too high, reduce it by spreading the residue in a thin layer and leaving it to stand in the open air for several hours.

Commercial oilseed residues usually have a moisture content of 12 % (*m/m*) to 14 % (*m/m*). In the case of samples having a different moisture content, it is necessary to carry out the calibration