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**Obroki iz semen oljnic - Določevanje vsebnosti olja - Metoda ekstrakcije s  
heksanom (ali petroletrom) (ISO/DIS 734:2022)**

Oilseed meals - Determination of oil content - Extraction method with hexane (or light petroleum) (ISO/DIS 734:2022)

Ölsamenschrote - Bestimmung des Ölgehaltes - Extraktionsverfahren mit Hexan (oder Petrolether) (ISO/DIS 734:2022)

Tourteaux de graines oléagineuses - Détermination de la teneur en huile - Méthode par extraction à l'hexane (ou à l'éther de pétrole) (ISO/DIS 734:2022)

**Ta slovenski standard je istoveten z: prEN ISO 734**

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**ICS:**

67.200.20      Oljnice      Oilseeds

**oSIST prEN ISO 734:2022**

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# DRAFT INTERNATIONAL STANDARD

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## Oilseed meals — Determination of oil content — Extraction method with hexane (or light petroleum)

*Tourteaux de graines oléagineuses — Détermination de la teneur en huile — Méthode par extraction à l'hexane (ou à l'éther de pétrole)*

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 34, *Food products*, Subcommittee SC 2, *Oleaginous seeds and fruits and oilseed meals*.

This third edition cancels and replaces ISO 734:2015, which has been revised in order to include some safety warnings.

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## Introduction

A method for the determination of the oil content of oilseeds has been specified in ISO 659. It is therefore necessary to provide for control of oil production by establishing a reference method for the determination of the oil content of oilseed meals in the same way.

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# Oilseed meals — Determination of oil content — Extraction method with hexane (or light petroleum)

## 1 Scope

This International Standard specifies a method for the determination of the hexane extract (or light-petroleum extract), called “oil content”, of meals (excluding compounded products) obtained by the extraction of oil from oilseeds by pressure or solvents.

## 2 Normative references

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

ISO 771, *Oilseed meals — Determination of moisture and volatile matter content*

ISO 5502, *Oilseed residues — Preparation of test samples*

## 3 Terms and definitions

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

### 3.1

#### oil content

all of the substances extracted under the operating conditions specified in this International Standard, and expressed as a mass fraction, in percent, of the product as received

Note 1 to entry: The oil content may also be expressed relative to dry matter.

## 4 Principle

A test portion of the product is extracted in a suitable apparatus, with technical hexane or, failing this, light petroleum. The solvent is eliminated and the extract obtained is weighed.

## 5 Reagents

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

**5.1 Technical hexane, *n*-hexane or light petroleum**, essentially composed of hydrocarbons with six carbon atoms.

Less than 5 % shall distil below 50 °C and more than 95 % between 50 °C and 70 °C.

For any of these solvents, the residue on complete evaporation shall not exceed 2 mg per 100 ml.

## 6 Apparatus

**WARNING — All reflux or boiling of solvent shall be carried out in a chemical fume hood to minimize employee exposure to solvent fumes**

Usual laboratory apparatus and, in particular, the following.

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**6.1 Mechanical grinder**, easy to clean and allowing the meals to be ground, without heating and without appreciable change in moisture, volatile matter and oil content, to obtain particles which pass completely through a sieve of aperture size 1 mm.

**6.2 Mechanical microgrinder**, of the Dangoumau type<sup>1)</sup> capable of producing a fineness of grinding of oilseed meals of less than 160 µm, with the exception of the “shell” whose particles may reach 400 µm.

In laboratories where a microgrinder is not available, microgrinding of the ground sample (see 9.4.3) may be replaced by trituration with a pestle and mortar, in the presence of about 10 g of sand that has been washed with hydrochloric acid and then calcined. However, grinding in a mortar cannot be applied in the case of multiple analyses because operator fatigue prevents sufficiently efficient grinding of numerous samples, and the extraction of oil from a coarsely ground sample can never be complete.

**6.3 Extraction thimble and cotton wool, or filter paper**, free from matter soluble in hexane or light petroleum.

**6.4 Suitable extraction apparatus**, fitted with a flask of capacity 200 ml to 250 ml.

NOTE Straight-through extractors, for example the Butt, Smalley, Twisselmann and Bolton-Williams<sup>2)</sup> are suitable. The use of other extractors is conditional upon the results of a test on a standard material of known oil content to confirm the suitability of the apparatus.

**6.5 Rotary evaporator, electric heating bath** (e.g. sand bath, water bath) or **hot plate**.

The apparatus used shall be suitable for working with potentially flammable solvents.

**6.6 Electrically heated oven**, with thermostatic control, permitting ventilation or obtaining reduced pressure, capable of being maintained at  $103\text{ °C} \pm 2\text{ °C}$ .

The apparatus used shall be suitable for working with potentially flammable solvents.

**6.7 Desiccator**, containing an efficient desiccant.

**6.8 Pumice stone**, in small particles, previously dried in an oven at  $103\text{ °C} \pm 2\text{ °C}$  and cooled in a dessicator.

**6.9 Analytical balance**, capable of weighing to an accuracy of  $\pm 0,001\text{ g}$ .

## 7 Sampling

A representative sample should have been sent to the laboratory. It should not have been damaged or changed during transport or storage.

Sampling is not part of the method specified in this International Standard. A recommended sampling method is given in ISO 5500.

## 8 Preparation of test sample

**8.1** Prepare the test sample in accordance with ISO 5502.

1) The Dangoumau mechanical microgrinder is an example of suitable apparatus available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this apparatus.

2) The Butt, Smalley, Twisselmann or Bolton-Williams straight-through extractors are examples of suitable apparatus available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of this apparatus.