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# INTERNATIONAL STANDARD



# 749

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Oilseed residues — Determination of total ash

*Tourteaux de graines oléagineuses — Détermination des cendres totales*

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**Descriptors** : oilseeds, oilseed residues, chemical analysis, determination of content, ash.

## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 749 was developed by Technical Committee ISO/TC 34, *Agricultural food products*.

It was submitted directly to the ISO Council, in accordance with clause 6.12.1 of the Directives for the technical work of ISO. It cancels and replaces ISO Recommendation R 749-1968, which had been approved by the member bodies of the following countries :

Australia	India	Romania
Brazil	Iran	South Africa, Rep. of
Bulgaria	Ireland	Thailand
Chile	Israel	Turkey
Colombia	Italy	United Kingdom
Czechoslovakia	Korea, Rep. of	U.S.S.R.
France	Netherlands	Yugoslavia
Germany	Poland	
Hungary	Portugal	

The member body of the following country had expressed disapproval of the document on technical grounds :

Canada

# Oilseed residues – Determination of total ash

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the total ash from residues (excluding compounded products) obtained by the extraction of oil from oilseeds by pressure or solvent.

## 2 REFERENCES

ISO 735, *Oilseed residues – Determination of ash insoluble in hydrochloric acid.*

ISO 771, *Oilseed residues – Determination of moisture and volatile matter content.*

ISO 5500, *Oilseed residues – Sampling.*<sup>1)</sup>

## 3 DEFINITION

**total ash** : The residue obtained after incineration at  $550 \pm 15$  °C under the operating conditions specified below.

## 4 PRINCIPLE

Incineration of a test portion at  $550 \pm 15$  °C in an electrically heated muffle furnace, until practically constant mass is reached.

## 5 APPARATUS

### 5.1 Analytical balance.

**5.2 Mechanical mill**, easy to clean and allowing the residues to be ground, without heating and without appreciable change in the moisture, volatile matter and oil content, to particles passing completely through the sieve (5.3).

**5.3 Sieve**, with apertures of diameter 1 mm.

**5.4 Flat-bottomed incineration dish**, of diameter about 60 mm and height not exceeding 25 mm, of platinum, platinum-plated gold, silica or, if not available, porcelain.

**5.5 Electrically heated muffle furnace**, with air circulation and capable of being controlled at  $550 \pm 15$  °C.

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

## 6 PROCEDURE

Make all weighings to the nearest 0,001 g.

### 6.1 Preparation of the test sample

**6.1.1** Take the contract sample obtained in accordance with ISO 5500.

**6.1.2** Grind the contract sample, if necessary, in the previously well cleaned mechanical mill (5.2). First, use about one-twentieth of the sample to complete the cleaning of the mill, and reject these grindings; then grind the rest, collect the grindings, mix carefully and carry out the analysis without delay.

### 6.2 Test portion

**6.2.1** Weigh the incineration dish (5.4), previously heated for 15 min in the furnace (5.5) at  $550 \pm 15$  °C, and allowed to cool in the desiccator (5.6) to laboratory temperature.

**6.2.2** Weigh into the incineration dish about 5 g of the test sample (6.1.2), spread this uniformly over the whole base of the dish and re-weigh.

Carry out these operations as quickly as possible, in order to avoid any appreciable change in moisture content.

NOTE – If the total ash is not used subsequently for the determination of the residue insoluble in hydrochloric acid (see ISO 735), the test portion may be reduced to 2 g.

### 6.3 Determination

Place the dish containing the test portion on an electric hot-plate or over a gas flame, and heat progressively until the test portion carbonizes, then place in the furnace (5.5), controlled at  $550 \pm 15$  °C. Continue heating until a white, light grey or reddish ash is obtained, visibly free from carbon particles (generally at least 2 to 3 h).

1) In preparation.