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# International Standard



# 4733

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

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## Oil of cardamom

*Huile essentielle de cardamome*

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[ISO 4733:1981](#)

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**UDC 665.524.84**

**Ref. No. ISO 4733-1981 (E)**

**Descriptors** : essential oils, cardamom, materials specifications.

## 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 4733 was developed by Technical Committee ISO/TC 54, *Essential oils*, and was circulated to the member bodies in October 1979.

It has been approved by the member bodies of the following countries :

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ISO 4733:1981

Austria	India	Portugal
Brazil	Italy	South Africa, Rep. of
Bulgaria	Korea, Rep. of	Sri Lanka
Chile	Netherlands	
France	Philippines	

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

Canada

# Oil of cardamom

## 1 Scope and field of application

This International Standard specifies certain characteristics of oil of cardamom, with a view to facilitating the assessment of its quality.

## 2 References

ISO/R 210, *Essential oils — Packing.*

ISO/R 211, *Essential oils — Labelling and marking containers.*

ISO 212, *Essential oils — Sampling.*

ISO 279, *Essential oils — Determination of density and relative density at 20 °C (Reference method).*

ISO 280, *Essential oils — Determination of the refractive index.*

ISO 592, *Essential oils — Determination of optical rotation.*

ISO 709, *Essential oils — Determination of ester value.*

ISO 875, *Essential oils — Evaluation of miscibility in ethanol.*

ISO 1242, *Essential oils — Determination of the acid value.*

## 3 Definition

**oil of cardamom** : The oil obtained by steam distillation of fruits of *Elettaria cardamomum* (Linnaeus) Maton, var. *minuscula* Burkill.

## 4 Requirements

### 4.1 Appearance

Liquid.

### 4.2 Colour

Almost colourless to yellow.

### 4.3 Odour

Characteristic, spicy, camphorous.

### 4.4 Relative density at 20/20 °C

Minimum : 0,919

Maximum : 0,936

### 4.5 Refractive index at 20 °C

Minimum : 1,462 0

Maximum : 1,468 0

### 4.6 Optical rotation at 20 °C

Range + 22° to + 41°

### 4.7 Miscibility in 70 % (V/V) ethanol at 20 °C

1 volume of the oil shall not require more than 2 to 5 volumes of 70 % (V/V) ethanol at 20 °C to give a clear solution.

### 4.8 Acid value

Maximum : 6

### 4.9 Ester value

Minimum : 92

Maximum : 150

### 4.10 Cineole content

To be completed later.

## 5 Sampling

See ISO 212.

Minimum volume of final sample : 50 ml

## 6 Methods of test

### 6.1 Relative density at 20/20 °C

See ISO 279.

### 6.2 Refractive index at 20 °C

See ISO 280.

### 6.3 Optical rotation at 20 °C

See ISO 592.

### 6.4 Solubility in 70 % (V/V) ethanol at 20 °C

See ISO 875.

### 6.5 Acid value

See ISO 1242.

### 6.6 Ester value

See ISO 709.

Test sample : 1 g

Saponification time : 3 h

### 6.7 Cineole content

The determination of cineole content by chromatography will form the subject of a future International Standard.

## 7 Packing, labelling and marking

See ISO/R 210 and ISO/R 211.

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