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# International Standard



# 1575

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

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## Tea — Determination of total ash

*Thé — Détermination des cendres totales*

Second edition — 1980-08-15

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## 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 1575 was developed by Technical Committee ISO/TC 34, *Agricultural food products*.

This second edition was submitted directly to the ISO Council, in accordance with clause 5.10.1 of part 1 of the Directives for the technical work of ISO. It cancels and replaces the first edition (i.e. ISO 1575-1975), which had been approved by the member bodies of the following countries :

Australia	India	Spain
Brazil	Iran	Sri Lanka
Canada	Israel	Thailand
Chile	Korea, Rep. of	Turkey
Colombia	Netherlands	United Kingdom
Czechoslovakia	Poland	USA
Egypt, Arab Rep. of	Portugal	USSR
France	Romania	
Hungary	South Africa, Rep. of	

No member body had expressed disapproval of the document.

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# Tea — Determination of total ash

## 1 Scope and field of application

This International Standard specifies a method for the determination of the total ash from tea.

## 2 References

ISO 1572, *Tea — Preparation of ground sample of known dry matter content.*

ISO 1576, *Tea — Determination of water-soluble ash and water-insoluble ash.*

ISO 1577, *Tea — Determination of acid-insoluble ash.*

## 3 Definition

For the purpose of this International Standard, the following definition applies :

**total ash** : The residue obtained after incineration at  $525 \pm 25$  °C under the conditions specified.

## 4 Principle

Destruction of organic matter by heating at  $525 \pm 25$  °C to constant mass.

## 5 Material

**5.1 Vegetable oil** (for example, olive oil), leaving no residue on incineration.

## 6 Apparatus

Usual laboratory apparatus, and the following items :

**6.1 Dish**, of capacity 50 to 100 ml, of platinum, porcelain or other material unaffected by the conditions of the test.

**6.2 Furnace**, capable of being controlled at  $525 \pm 25$  °C.

**6.3 Steam bath.**

**6.4 Hot-plate.**

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

**6.6 Analytical balance.**

## 7 Sample

Use a ground sample of known dry matter content, prepared as specified in ISO 1572.

## 8 Procedure

### 8.1 Preparation of the dish

Heat the dish (6.1) for 1 h in the furnace (6.2) at  $525 \pm 25$  °C. Cool in the desiccator (6.5). After cooling, weigh to the nearest 0,001 g.

### 8.2 Test portion

Weigh, to the nearest 0,001 g, about 5 g of the ground sample into the prepared dish (8.1). (See ISO 1572.)

### 8.3 Determination

**8.3.1** Heat the test portion in the dish, at a temperature near 100 °C until the moisture is expelled. Cool and add a few drops of the vegetable oil (5.1) and heat slowly over a flame until swelling ceases. Transfer the dish to the furnace (6.2) and heat at  $525 \pm 25$  °C until the ash is visibly free from carbon particles (at least 2 h is usually required). Allow to cool, then moisten the ash with distilled water, dry it on the steam bath (6.3) and then on the hot-plate (6.4). Return the dish to the furnace for 60 min, cool in the desiccator and weigh. Heat again in the furnace for 30 min, cool and weigh. Repeat these operations, if necessary, until the difference between two successive weighings does not exceed 0,001 g.

**8.3.2** Reserve the total ash for determination of water-soluble ash and water-insoluble ash (see ISO 1576), or of acid-insoluble ash (see ISO 1577), if required.

### 8.4 Number of determinations

Carry out two separate determinations on the same ground sample (clause 7).

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## 9 Expression of results

### 9.1 Method of calculation and formula

The total ash yielded by the ground sample, expressed as a percentage by mass on the dry basis, is given by the formula

$$m_1 \times \frac{100}{m_0} \times \frac{100}{RS}$$

where

$m_0$  is the mass, in grams, of the test portion;

$m_1$  is the mass, in grams, of the total ash;

$RS$  is the dry matter content, as a percentage by mass, of the ground sample, determined in accordance with ISO 1572.

Take as the result the arithmetic mean of the two determinations, provided that the requirement for repeatability (see 9.2) is satisfied.

### 9.2 Repeatability

The difference between the results of two determinations, carried out simultaneously or in rapid succession by the same analyst, shall not exceed 0,2 g of total ash per 100 g of ground sample.

## 10 Test report

The test report shall show the method used and the result obtained. It shall also mention any operating details not specified in this International Standard, or regarded as optional, as well as any circumstances that may have influenced the result.

The report shall include all details required for complete identification of the sample.

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