

INTERNATIONAL STANDARD

ISO
1576

Second edition
1988-07-15



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

Tea — Determination of water-soluble ash and water-insoluble ash

Thé — Détermination des cendres solubles et des cendres insolubles dans l'eau

(standards.iteh.ai)

ISO 1576:1988

<https://standards.iteh.ai/catalog/standards/sist/f49a8a17-a636-40ad-85b1-c536eb2ab9c2/iso-1576-1988>

Reference number
ISO 1576:1988 (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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 1576 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

[ISO 1576:1988](https://standards.iteh.ai/catalog/standards/sist/f49a8a17-a636-40ad-85b1-1199b57c2175/iso-1576)

[https://standards.iteh.ai/catalog/standards/sist/f49a8a17-a636-40ad-85b1-](https://standards.iteh.ai/catalog/standards/sist/f49a8a17-a636-40ad-85b1-1199b57c2175/iso-1576)

This second edition cancels and replaces the first edition (ISO 1576 : 1975), of which it constitutes a minor revision.

Tea — Determination of water-soluble ash and water-insoluble ash

1 Scope

This International Standard specifies a method for the determination of the water-soluble ash and the water-insoluble ash of tea.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1572 : 1980, *Tea — Preparation of ground sample of known dry matter content.*

ISO 1575 : 1987, *Tea — Determination of total ash.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 water-soluble ash: The part of the total ash dissolved by water under the conditions specified in this International Standard.

3.2 water-insoluble ash: The part of the total ash remaining after treatment with water under the conditions specified in this International Standard.

4 Principle

Extraction of the total ash with hot water, filtration through ashless filter paper, ignition and weighing of the residue to determine the insoluble ash; calculation of the soluble ash by difference.

5 Apparatus

Usual laboratory apparatus and, in particular, the following.

5.1 Dish, of 50 ml to 100 ml capacity, used for the determination of total ash.

NOTE — It is considered that silica dishes are unsuitable for use with this test.

5.2 Furnace, capable of being controlled at $525\text{ °C} \pm 25\text{ °C}$.

5.3 Steam-bath.

5.4 Filter paper, ashless.

5.5 Desiccator, containing an effective desiccant.

5.6 Analytical balance.

6 Procedure

6.1 Test portion

Use the total ash obtained from the determination specified in ISO 1575.

6.2 Determination

6.2.1 Add 20 ml of distilled water (or water of at least equivalent purity) to the total ash in the dish (5.1), heat nearly to boiling and filter through the filter paper (5.4). Wash the dish and the filter paper with hot distilled water (or water of at least equivalent purity) until the volume of the combined filtrate and washings is about 60 ml. Return the filter paper and contents to the dish (5.1), evaporate off the water carefully on the steam-bath (5.3), and heat in the furnace (5.2) at $525\text{ °C} \pm 25\text{ °C}$ until the ash is free from visible carbon particles. Cool in the desiccator (5.5) and weigh. Heat again in the furnace for 30 min, cool and weigh, and repeat these operations, if necessary, until the difference between two successive weighings is less than 0,001 g. Note the lowest mass.

6.2.2 Carry out two determinations, using the residues obtained from two determinations of total ash.

6.2.3 Reserve the filtrate for the determination of the alkalinity of the water-soluble ash [see ISO 1578¹⁾]. Reserve the water-insoluble ash for the determination of acid-insoluble ash [see ISO 1577²⁾], if required.

7 Expression of results

7.1 Method of calculation

7.1.1 Water-insoluble ash

The percentage, by mass, of water-insoluble ash yielded by the ground sample, on the dry basis, is given by the formula

$$m_2 \times \frac{100}{m_0} \times \frac{100}{RS}$$

where

m_0 is the mass, in grams, of the test portion of the ground sample used for the determination of total ash;

m_2 is the mass, in grams, of the water-insoluble 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 7.2) is satisfied.

1) ISO 1578 : 1975, *Tea* — *Determination of alkalinity of water-soluble ash*.

2) ISO 1577 : 1987, *Tea* — *Determination of acid-insoluble ash*.

7.1.2 Water-soluble ash

The percentage, by mass, of water-soluble ash yielded by the sample, on the dry basis, is given by the formula

$$(m_1 - m_2) \times \frac{100}{m_0} \times \frac{100}{RS}$$

where

m_0 , m_2 and RS have the same meaning as in 7.1.1;

m_1 is the mass, in grams, of the total ash.

7.1.3 Percentage of water-soluble ash in total ash

This percentage is given by the formula

$$(m_1 - m_2) \times \frac{100}{m_1}$$

7.2 Repeatability

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

8 Test report

The test report shall specify the method used and the result obtained. It shall also mention all operating details not specified in this International Standard, or regarded as optional, together with details of any incidents which may have influenced the result.

The test report shall include all information necessary for the complete identification of the sample.