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# International Standard



# 6645

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

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## Wheat flour — Determination of dry gluten

*Farines de blé — Détermination du gluten sec*

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**Descriptors :** agricultural products, grains (food), flours (food), corn (G.B.), tests, determination of content.

## 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 6645 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in October 1979.

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

Australia	Hungary	Portugal
Austria	India	Romania
Brazil	Israel	South Africa, Rep. of
Bulgaria	Kenya	Spain
Canada	Korea, Rep. of	Sri Lanka
Cyprus	Mexico	Thailand
Czechoslovakia	Netherlands	Turkey
Ethiopia	New Zealand	United Kingdom
France	Peru	USSR
Germany, F. R.	Poland	Yugoslavia

No member body expressed disapproval of the document.

This International Standard has also been approved by the International Union of Pure and Applied Chemistry (IUPAC).

# Wheat flour — Determination of dry gluten

## 1 Scope and field of application

1.1 This International Standard specifies a method for the determination of dry gluten in wheat flour.

The method may also be used to determine the water content of the wet gluten.

1.2 The method is applicable to the various common wheat (*Triticum aestivum*) flours (commercial flours and test millings).

## 2 Reference

ISO 5531, *Wheat flour — Determination of wet gluten.*

## 3 Principle

Desiccation and weighing of a ball of wet gluten obtained under the conditions specified in ISO 5531.

## 4 Apparatus

4.1 Scalpel or knife.

4.2 Metal or glass plate, 5 cm × 5 cm.

4.3 Oven, capable of being controlled at 130 ± 2 °C.

4.4 Desiccator, provided with an efficient desiccant.

4.5 Balance, accurate to 0,01 g.

## 5 Procedure

### 5.1 Test portion

Onto the plate (4.2), previously weighed to the nearest 0,01 g, place the wet gluten, from which most of the washing solution has been eliminated, obtained by the method specified in ISO 5531, shaped into the form of a ball, and weigh the plate and wet gluten to the nearest 0,01 g.

### 5.2 Determination

Place the plate and test portion in the oven (4.3), controlled at 130 °C, and leave for about 2 h.

Remove the plate from the oven and make three or four parallel incisions on the partially dry gluten using the scalpel or knife (4.1), then replace in the oven for about 3 h, so that the total drying time is 5 h.

Remove the plate and dry gluten obtained and cool them in the desiccator (4.4) to laboratory temperature (approximately 30 min); then weigh to the nearest 0,01 g.

## 6 Expression of results

### 6.1 Method of calculation and formula

6.1.1 The dry gluten, expressed as a percentage by mass of the product as received, is equal to

$$\frac{m_1 - m_0}{m} \times 100$$

where

$m$  is the mass, in grams, of the test portion taken for the determination of wet gluten (i.e. 10,00 g, see ISO 5531);

$m_0$  is the mass, in grams, of the plate;

$m_1$  is the mass, in grams, of the plate and dry gluten.

NOTE — It is possible to express the dry gluten as a percentage of the dry matter content of the flour.

6.1.2 The water content of the wet gluten, expressed as a percentage by mass, is equal to

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

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where

$m_0$  is the mass, in grams, of the plate;

$m_1$  is the mass, in grams, of the plate and dry gluten;

$m_2$  is the mass, in grams, of the plate and wet gluten.

## 6.2 Repeatability

The difference between the results of two determinations of dry gluten, carried out simultaneously or in rapid succession by the same analyst, using the same apparatus, shall not exceed 0,5 % of the dry gluten.

## 7 Test report

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

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

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