
**Cereals — Determination of bulk
density, called mass per hectolitre —**

Part 2:

**Method of traceability for measuring
instruments through reference to the
international standard instrument**

*Céréales — Détermination de la masse volumique, dite masse à
l'hectolitre —*

*Partie 2: Méthode de raccordement des instruments de mesure à
l'étalon international*



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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 4, *Cereals and pulses*.

This third edition cancels and replaces the second edition (ISO 7971-2:2009), which has been technically revised. The main changes compared with the previous edition are as follows:

- changes have been made to the test samples used for the traceability of measuring instruments through reference to standard measurement instruments (review of the number, range, distribution and characteristics of the samples);
- further details have been given on statistical tests;
- clarification has been given on the decision rules by adding a decision tree for national standard instruments and secondary or internal standard instruments and by introducing a bias control.

A list of all parts in the ISO 7971 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Cereals — Determination of bulk density, called mass per hectolitre —

Part 2:

Method of traceability for measuring instruments through reference to the international standard instrument

1 Scope

This document specifies a test method for ensuring the traceability of bulk density, called “mass per hectolitre”, measuring instruments through reference to standard measurement instruments. The mass per hectolitre is of commercial importance for grain cereals. Several types of instruments with varying performances exist for measuring it.

This document also specifies the performances required of national standards instruments, secondary standards instruments, and measuring instruments used in laboratories or in collection or storage silos.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 712, *Cereals and cereal products — Determination of moisture content — Reference method*

ISO 7971-1:2009, *Cereals — Determination of bulk density, called mass per hectolitre — Part 1: Reference method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

mass per hectolitre

bulk density

test weight

<cereals> ratio of the mass of a cereal to the volume it occupies after being poured into a container under defined manufacturer's conditions

Note 1 to entry: Mass per hectolitre is expressed in kilograms per hectolitre of grains as received.

[SOURCE: ISO 7971-1:2009, 2.1, modified — In the definition, “defined manufacturer's conditions” has replaced “well-defined conditions”, and the Note 2 to entry has been deleted.]