INTERNATIONAL STANDARD 2920

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Whey cheese — Determination of dry matter content (Reference method)

Fromage de sérum — Détermination de la teneur en matière sèche (Méthode de référence)

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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.

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International Standard ISO 2920 was drawn up by Technical Committee ISO/TC 34, *Agricultural food products,* and circulated to the Member Bodies in August 1972.

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It has been approved by the Member Bodies of the following countries:

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Australia	Hungary	Romania
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Belgium	Iran	Spain
Brazil	Ireland	Thailand
Czechoslovakia	Israel	Turkey
Egypt, Arab Rep. of	Netherlands	United Kingdom
Finland	New Zealand	U.S.S.R.
Germany	Poland	

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

No Member Body expressed disapproval of the document.

NOTE – This International Standard has been developed jointly with the IDF (International Dairy Federation) and the AOAC (Association of Official Analytical Chemists, U.S.A.) for the purpose of being included in the FAO/WHO Code of Principles concerning Milk and Milk products and Associated Standards.

The text as approved by the above organizations was also published by FAO/WHO (Code of Principles, Standard No. B-11), by the IDF (IDF Standard No. 58) and by the AOAC (Official Methods of Analysis).

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Whey cheese — Determination of dry matter content (Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the dry matter content of whey cheese.

2 REFERENCES

ISO 565, *Test sieves — Woven metal wire cloth and perforated plate — Nominal sizes of apertures.*

ISO/R 707, *Milk and milk products — Sampling.*

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3 DEFINITION

dry matter of whey cheese : The residue obtained by application of the procedure specified and including the water of crystallization of lactose.

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The dry matter content is expressed as a percentage by mass.

4 PRINCIPLE

Desiccation of a sample of whey cheese in a ventilated oven at a temperature of 88 ± 2 °C.

5 APPARATUS AND MATERIALS

5.1 Grinding mill or other appropriate device.

5.2 Analytical balance.

5.3 Desiccator provided with an efficient drying agent (for example silica gel with hygrometric indicator).

5.4 Drying oven, well ventilated and thermostatically controlled, maintained at 88 ± 2 °C.

5.5 Dishes, stainless steel, nickel or aluminium, height about 20 mm, diameter 60 to 80 mm.

5.6 Quartz sand or **sea sand** which passes through a sieve with 10 openings per centimetre but not through a sieve with 40 openings per centimetre; for example, woven wire cloth test sieve with nominal size of aperture of 500 μm and 180 μm respectively (see ISO 565). If necessary, the sand shall be washed with hot concentrated hydrochloric acid and water, dried and ignited.

5.7 Glass stirrers, flat ended.

6 SAMPLING

See ISO/R 707.

7 PROCEDURE

7.1 Preparation of the test sample

Grind the representative sample of the cheese by means of the grinding mill (5.1). If the soft consistency of the cheese makes the use of a grinding mill impossible, mix the sample thoroughly by means of another appropriate device (for example, a glass stirrer or spatula); avoid losses by evaporation.

Keep the prepared sample in a suitable airtight container until analysis. Start the analysis within 1 h.

7.2 Determination

7.2.1 Weigh about 20 g of sand (5.6) in a dish (5.5) together with a glass stirrer (5.7). (See clause 9.)

7.2.2 Moisten the sand with water and dry the dish in the oven (5.4) to constant mass.

7.2.3 Allow the dish to cool in the desiccator (5.3) and weigh to the nearest 0,000 5 g.

7.2.4 Quickly weigh, to the nearest 0,000 5 g, about 3 g of the test sample in the dish.

7.2.5 Thoroughly mix the test portion with the sand by means of the stirrer.

7.2.6 Dry the dish and contents in the oven (5.4) for 4 h.

7.2.7 Allow to cool in the desiccator (5.3) and weigh to the nearest 0,000 5 g.

7.2.8 Dry in the oven (5.4) again for 1 h. Cool in the desiccator and weigh to the nearest 0,000 5 g.

7.2.9 Repeat the operations of drying and cooling until the difference in mass between two successive weighings is not more than 0,001 g.

7.3 Carry out two determinations on the same test sample.

8 EXPRESSION OF RESULTS

8.1 Method of calculation and formula

The percentage by mass of dry matter is given by the formula

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

where

m_0 is the mass, in grams, of the dish containing the sand and stirrer (7.2.3);

m_1 is the mass, in grams, of the dish and contents before drying (7.2.4);

m_2 is the mass, in grams, of the dish and contents after drying (7.2.9).

Take as the result the arithmetic mean of the two determinations, if the requirement of repeatability (see 8.2) is satisfied.

8.2 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 dry matter per 100 g of the product.

9 NOTE ON PROCEDURE

With hard and semi-hard whey cheeses, which can be adequately ground by means of the grinding mill, the use of sand can be omitted.

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 the complete identification of the sample.

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