INTERNATIONAL STANDARD 1739

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

Butter — Determination of the refractive index of the fat (Reference method)

Beurre — Détermination de l'indice de réfraction de la matière grasse (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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations, these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 34 has reviewed ISO Recommendation R 1739 and found it technically suitable for transformation. International Standard ISO 1739 therefore replaces ISO Recommendation R 1739-1971 to which it is technically identical.

ISO Recommendation R 1739 was approved by the Member Bodies of the following countries :

Australia	Greece	Poland
Belgium	Hungary	Romania
Brazil	India	South Africa, Rep. of
Canada	Iran	Spain
Colombia	Israel	Sweden
Czechoslovakia	Korea, Rep. of	Switzerland
Egypt, Arab Rep. of	Netherlands	Thailand
France	New Zealand	Turkey
Germany	Peru	U.S.S.R.

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Portugal
United Kingdom

No Member Body disapproved the transformation of ISO/R 1739 into an International Standard.

Printed in Switzerland

Butter — Determination of the refractive index of the fat (Reference method)

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a reference method for the determination of the refractive index of the fat from butter.

2 REFERENCES

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

ISO/R 1740, *Butter — Determination of the acid value of the fat.*

3 DEFINITION

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

refractive index of the fat from butter : The ratio, at 40 °C, of the velocity of light of defined wavelength (the mean of D-lines of sodium) in air to its velocity in the fat.

NOTE — In theory, there are two D-lines of sodium and the ratio should be referred to the velocity of light in vacuum, not in air. In practice, sodium light can be considered monochromatic, and the ratio related to that in air.

4 PRINCIPLE

Measurement, by means of a suitable refractometer, of the refractive index of the fat obtained by melting butter.

5 APPARATUS

5.1 Refractometer with a scale graduated in refractive index units to the third decimal place and having prisms heated by means of a circulating liquid at 40 °C, the temperature being thermostatically controlled to within ± 0,1 °C.

5.2 Light source : sodium vapour lamp.

White light can also be used if the refractometer is fitted with an achromatic compensating device.

6 SAMPLING

See ISO/R 707.

7 PROCEDURE

7.1 Preparation of the sample

To separate the fat, melt the sample and let it stand for 2 to 3 h at 50 to 60 °C, decant and filter through a dry filter paper. Filter again if the filtrate obtained is not clear. Use the melted and clarified fat, well mixed and free from water.

7.2 Determination

Prepare the refractometer and calibrate it by following the maker's instructions for using the instrument. Adjust the temperature of the circulating liquid to 40 ± 0,1 °C.

Place a few drops of fat (prepared as described in 7.1) between the prisms of the refractometer in such a way that the space between the prisms is completely filled. Wait for a few minutes to allow the fat to assume the temperature of the prisms.

Take the reading, estimating to tenths of a scale division (i.e. the fourth decimal place).

Carry out two determinations on the same prepared sample.

8 EXPRESSION OF RESULTS

8.1 Correction

Correct the observed refractive index by adding 0,000 045 for each unit of the acid value if the latter, when determined by the method specified in ISO/R 1740, is equal to or greater than 2.

8.2 Method of calculation

Take as the result the arithmetic mean of the two results, corrected if necessary, if the requirement concerning repeatability (see 8.3) is satisfied. Round to the fourth decimal place.

8.3 Repeatability

The difference between the results of two determinations carried out in rapid succession by the same analyst should not exceed 0,000 2.

9 TEST REPORT

The test report shall show the method used and the result obtained. It shall also mention any operating conditions 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.