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# International Standard



# 7586

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

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## Butter — Determination of water dispersion value

*Beurre — Détermination de l'indice de dispersion de l'eau*

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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.

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 7586 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

NOTE — The method specified in this International Standard has been developed jointly with the International Dairy Federation (IDF) and the Association of Official Analytical Chemists (AOAC) and will also be published by these organizations.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Butter — Determination of water dispersion value

## 1 Scope and field of application

This International Standard specifies a method for the determination of the water dispersion value of butter.

NOTE — The water dispersion value of butter is used for grading purposes, because the size and distribution of the water droplets is closely linked with the shelf-life of the butter.

The method is applicable to all types of butter.

## 2 Reference

ISO 707, *Milk and milk products — Methods of sampling*.

## 3 Definition

**water dispersion value of butter** : Estimation of the water distribution in relation to a grading scale, expressed in scale units, according to the method specified in this International Standard.

## 4 Principle

Bringing a special indicator paper into contact with a freshly-cut plane surface of the butter, water occurring in the butter causing spots on the indicator paper. (These spots indicate the number, shape and size of the water droplets in the butter and their distribution through the butter.) Estimation of the water dispersion by comparing the marking of the indicator paper with a grading scale.

## 5 Apparatus and material

**5.1 "Water" indicator paper**<sup>1)</sup>, in rectangular pieces, of dimensions approximately 40 mm × 78 mm.

The paper used shall be filter paper without structure (no wrinkled surface), without preferred machine direction, not hardened, without compacted surface, free from fluffs. Both surfaces shall have the same quality.

Mass per unit area : 85 to 90 g/m<sup>2</sup>

Suction height : 90 to 100 mm in 30 min

The colour contrast of the spots on the indicator paper shall be the same as the colour contrast of the grading scale. The manufacturer should make sure that the colour of different lots does not vary.

Paper and indicator shall not be influenced by a relative humidity of less than 70 %. The indicator shall be resistant to air. The spots on a used indicator paper shall be constant for at least 2 months without essential change.

The packets used in the laboratory shall be splash-proof. Storage packets shall be airproof and humidity-proof so that there will be no change in the properties of the indicator paper over a period of 6 months.

**5.2 Cutting wire**, kept taut, of diameter 0,5 mm, or any other suitable cutting apparatus.

**5.3 Tweezers**, of stainless steel.

1) "Water" is a proprietary trade name of a product commercially available from Macherey-Nagel and Co, Düren, Germany, F.R. Equivalent substitutes may be used; however, for reproducibility of the test results, this product should be used. At present no other products intended for this purpose are known to be available commercially. This information is given for the convenience of the user of this International Standard and does not constitute an endorsement of the product by ISO.

**5.4 Spatula**, of stainless steel.

**5.5 Grading scale** (see opposite).

NOTE — The divisions of the scale indicated as 2A, 2B and 2C represent equivalent types of water dispersion which, although different in appearance, rate the same value. The same applies to 3A, 3B and 3C.

## 6 Sampling

**6.1** See ISO 707.

**6.2** Store the sample before and during transport to the laboratory between 0 and 15 °C, but preferably at  $13 \pm 2$  °C.

## 7 Procedure

**7.1** Keep the sample at  $13 \pm 2$  °C for at least 24 h.

**7.2** Put the unpacked sample on an appropriate support, then cut the sample by means of the cutting wire, or any other suitable cutting apparatus (5.2), in one stroke, but not too fast, so as to obtain a fresh, smooth and even surface of dimensions such that a sheet of indicator paper can be applied to it as specified in 7.3.

NOTE — Any deformation of the butter may change the water distribution and should, therefore, be avoided as much as possible during cutting.

Avoid any further contact between the cutting plane to be tested and the butter which has been cut off and the wire.

**7.3** Immediately after cutting, place, by means of dry tweezers (5.3), a sheet of the indicator paper (5.1) on the cut surface in such a way that the whole of the area of the paper is within the area of the cut surface, the distance between any edge of the paper and the corresponding edge of the cutting plane being not less than 1 cm. Gently press the paper, by means of the dry spatula (5.4), against the cut surface, without

allowing the paper to slip. Hold in place for 20 to 30 s and then, using the tweezers, carefully remove the paper from the butter.

**7.4** Compare with the grading scale (5.5) the side of the paper which has not been in contact with the butter.

NOTE — The side of the paper which has been in contact with the butter may be scraped off lightly by means of a knife. The paper may then be retained in a small transparent plastics bag as evidence of the assigned "class".

## 8 Expression of results

Record the water dispersion value which most closely matches the degree of spotting obtained with the sample.

## 9 Repeatability

The difference between the results of two determinations, carried out simultaneously or in rapid succession by the same analyst, on closely neighbouring plane surfaces in the same sample of butter, shall not exceed 1 point on the grading scale.

NOTE — If the difference between two duplicate determinations appears to exceed 1 point of the grading scale it suggests an unequal water distribution.

In such a case, a third determination on the same sample should be carried out. The mean value of the three determinations, rounded to a whole number, should then be reported as the water dispersion value.

## 10 Test report

The test report shall show the method used and the results obtained. It shall also mention any operating details not specified in this International Standard, or regarded as optional, together with details of any incidents likely to have influenced the results.

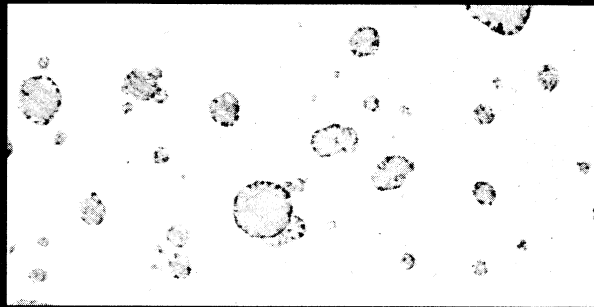
The test report shall include all the information necessary for the complete identification of the sample.

Echelle de Comparaison

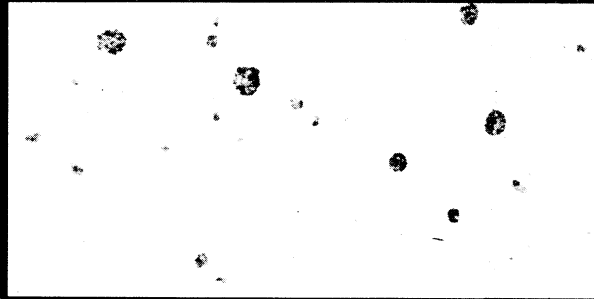
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Grading Scale

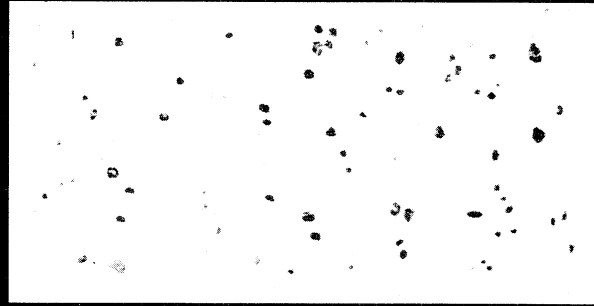
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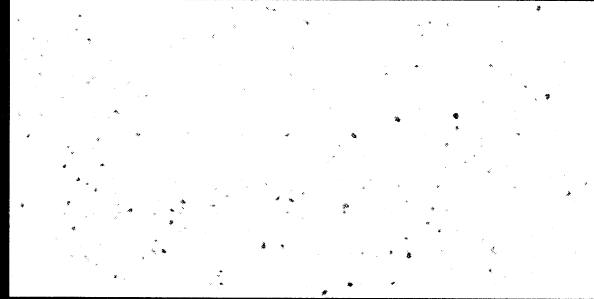
2 A



2 B



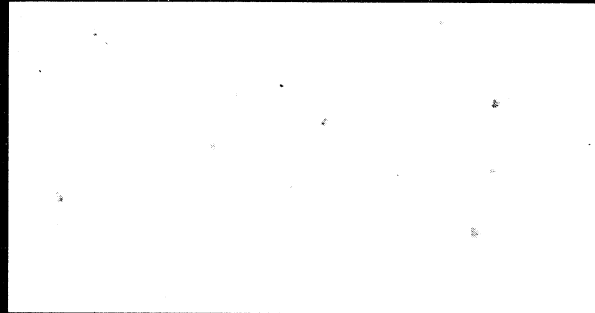
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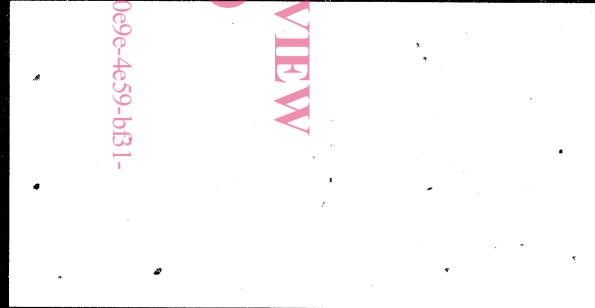
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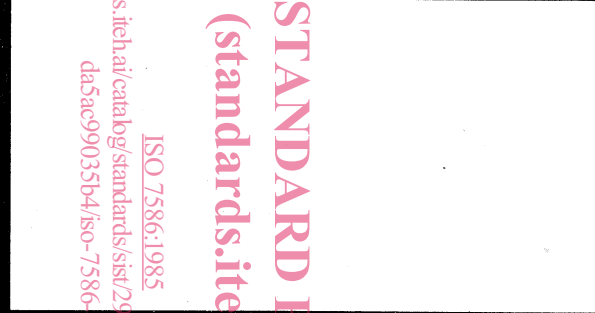
3 B



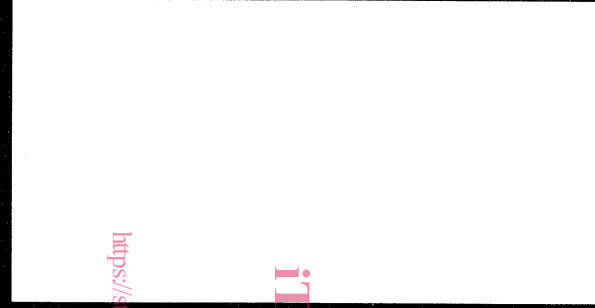
3 C



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