

INTERNATIONAL STANDARD

ISO
8292

first edition
1991-12-01

Animal and vegetable fats and oils — Determination of solid fat content — Pulsed nuclear magnetic resonance method

*Corps gras d'origines animale et végétale — Détermination de la teneur
en corps gras solides — Méthode par résonance magnétique nucléaire
pulsée*



Reference number
ISO 8292:1991(E)

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8292 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*, Sub-Committee SC 11, *Animal and vegetable fats and oils*.

Annex A of this International Standard is for information only.

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International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Animal and vegetable fats and oils — Determination of solid fat content — Pulsed nuclear magnetic resonance method

1 Scope

This International Standard specifies a method for the determination of the solid fat content in animal and vegetable fats and oils (hereinafter referred to as fats) using low-resolution pulsed nuclear magnetic resonance. Alternative thermal pretreatments are specified according to whether or not the fat exhibits pronounced polymorphism.

NOTE 1 Examples of fat which exhibit pronounced polymorphism are cocoa butter and fats containing appreciable quantities of 2-unsaturated, 1,3-saturated triacylglycerol.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 661:1989, *Animal and vegetable fats and oils — Preparation of test sample.*

3 Definition

For the purposes of this International Standard, the following definition applies.

3.1 solid fat content: The percentage by mass of fat in the solid state at a specified temperature when measured by pulsed nuclear magnetic resonance under the conditions specified in this International Standard.

4 Principle

Preparation of test portions at specified temperatures. Measurement of the magnetization decay signals from the solid and liquid fat protons using pulsed nuclear magnetic resonance, with automatic calculation and display of the solid fat content.

5 Material

Calibration material, of known instrument response.

NOTE 2 Calibration materials with known responses are supplied by the instrument manufacturer. Materials giving responses of 0 % (*m/m*) and of about 35 % (*m/m*) and 70 % (*m/m*) are suitable. These response values are constant for all measurement temperatures.

6 Apparatus

6.1 Measuring tubes, suitable for use with the nuclear magnetic resonance instrument.

6.2 Metal blocks, preferably aluminium, with holes. The diameter of the holes shall not be more than 0,4 mm greater than the average diameter of the measuring tubes. The depth of the holes shall be such that the level of the fat is approximately 10 mm below the upper surface of the block. The thickness of the metal under the holes and the distance between the edge of a peripheral hole and the nearest side face shall be 10 mm. The distance between the axes of two adjacent holes shall be 7 mm greater than the diameter of the holes. One block is required for each water-bath used.