International Standard 663

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Animal and vegetable fats and oils — Determination of insoluble impurities content

Corps gras d'origine animale et végétale — Détermination de la teneur en impuretés insolubles

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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.

International Standard ISO 663 was developed by Technical Committee ISO/TC 34, *Agricultural food products*, and was circulated to the member bodies in January 1979.

It has been approved by the member bodies of the following countries:

Australia	Hungary	Poland
Bulgaria	India	Portugal
Canada	Israel	Romania
Cyprus	Kenya	South Africa, Rep. of
Czechoslovakia	Korea, Rep. of	Spain
Egypt, Arab Rep. of	Mexico	Thailand
Ethiopia	Netherlands	Turkey
France	New Zealand	United Kingdom
Germany, F. R.	Peru	Yugoslavia

The member body of the following country expressed disapproval of the document on technical grounds :

Malaysia

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

It cancels and replaces ISO Recommendations ISO/R 663-1968 and ISO/R 932-1969, of which it constitutes a technical revision.

Animal and vegetable fats and oils — Determination of insoluble impurities content

1 Scope and field of application

This International Standard specifies a method for the determination of the insoluble impurities content of animal or vegetable fats or oils.

The method is not applicable to cottonseed black grease or to sulphur olive oil.

2 Reference

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

3 Definition

insoluble impurities content : The dirt and other foreign matter insoluble in *n*-hexane or light petroleum under the conditions specified in this International Standard, and expressed as a percentage by mass.

These impurities include mechanical impurities, mineral substances, carbohydrates, nitrogenous substances, various resins, calcium soaps, oxidized fatty acids, fatty acid lactones, and (in part) alkali soaps, hydroxy-fatty acids and their glycerides.

NOTE — If it is not desired to include soaps (particularly calcium soaps) or oxidized fatty acids in the insoluble impurities, it is necessary to use a different solvent and procedure; in this case the method should be the subject of agreement between the parties concerned.

4 Principle

Treatment of a test portion with an excess of *n*-hexane or light petroleum, then filtration of the solution obtained. Washing of the filter and residue with the same solvent, drying at 103 ± 2 °C, and weighing.

5 Reagent

***n*-Hexane,** or, failing this, **light petroleum** having a distillation range between 30 and 60 °C and having a bromine value less than 1. For either solvent, the residue on complete evaporation shall not exceed 0,002 g per 100 ml.

6 Apparatus

Usual laboratory apparatus, and in particular :

6.1 Analytical balance.

6.2 Electric drying oven, capable of being controlled at 103 ± 2 °C.

6.3 Conical flask, of capacity 250 ml, with ground glass stopper.

6.4 Desiccator, containing an efficient desiccant.

6.5 Ashless filter paper or **glass fibre filter,** diameter 120 mm, together with a metal (preferably aluminium) or glass **vessel** with a well-fitting lid; or

6.6 Filter crucible, pore diameter 10 to 16 µm, together with a **suction bottle.**

7 Procedure

7.1 Preparation of the test sample

Prepare the test sample in accordance with ISO 661.

7.2 Test portion

Weigh, to the nearest 0,01 g, approximately 20 g of the test sample (7.1) into the conical flask (6.3).

7.3 Determination

7.3.1 Dry either the filter paper and the vessel (6.5) with its lid, or the filter crucible (6.6), in the oven (6.2), controlled at 103 ± 2 °C. Allow to cool in the desiccator (6.4) and weigh to the nearest 0,001 g.

7.3.2 Add 200 ml of *n*-hexane or light petroleum (clause 5) to the flask containing the test portion (7.2), stopper the flask and shake. For castor oil, the quantity of solvent may be increased to facilitate the operation, and this may necessitate the use of a larger flask.

Leave to stand at about 20 °C for about 30 min.