UDC 665.22 : 543.869

Ref. No. : ISO/R 932-1969 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 932

ANIMAL FATS

DETERMINATION OF INSOLUBLE IMPURITIES

1st EDITION

January 1969

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 932, *Animal fats – Determination of insoluble impurities,* was drawn up by Technical Committee ISO/TC 34, *Agricultural food products,* the Secretariat of which is held by the Magyar Szabványügyi Hivatal (MSZH).

Work on this question led to the adoption of a Draft ISO Recommendation.

In April 1967, this Draft ISO Recommendation (No. 1223) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	Iraq	Romania
Bulgaria	Ireland	South Africa, Rep. of
Colombia	Israel	Thailand
Czechoslovakia	Korea, Rep. of	Turkey
France	Netherlands	U.A.R.
Greece	New Zealand	United Kingdom
Hungary	Norway	Yugoslavia
India	Poland	
Iran	Portugal	

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1969, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 932 January 1969

ANIMAL FATS

DETERMINATION OF INSOLUBLE IMPURITIES

1. SCOPE

This ISO Recommendation describes a method for the determination of insoluble impurities in animal fats intended for human and animal consumption.

2. DEFINITION

By *insoluble impurities* in animal fats is meant the dirt and other foreign matter which are insoluble in *n*-hexane or light petroleum under the conditions of the method described.

These 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.

NOTES. – If it is not desired to include soaps (particularly calcium soaps) 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.

3. PRINCIPLE

Solution of the sample in *n*-hexane or light petroleum, filtration, washing of the residue, and drying at 103 ± 2 °C to constant mass.

4. REAGENT

n-Hexane or, failing this, *light petroleum* distilling between 40 and 60 °C, and having a bromine value less than 1. For either solvent, the residue on complete evaporation should not exceed 0.002 g/100 ml.

5. APPARATUS

5.1 *Conical flask,* 250 ml, with ground glass stopper.

5.2 *Glass filter,* porosity 5 to 10 μm.

5.3 *Conical flask with suction tube* (filter flask).

5.4 *Apparatus for maintaining a reduced pressure.*

5.5 *Drying oven,* regulated at 103 ± 2 °C.

5.6 *Desiccator* provided with an effective desiccant.

5.7 *Analytical balance.*

6. SAMPLE

Proceed from a representative sample of at least 50 g. See ISO Recommendation R . . .,* *Animal fats – Sampling.*

7. PROCEDURE

7.1 Preparation of sample

Mix the whole of the fat sample submitted for examination. The sample should be melted and stirred until it has cooled again.

7.2 Test portion

Weigh, to the nearest 0.01 g, about 20 g of the prepared sample into the conical flask (5.1).

7.3 Determination

Dry the glass filter (5.2) at 103 ± 2 °C, cool in the desiccator (5.6) and weigh to the nearest 0.001 g.

Add 200 ml of the *n*-hexane or light petroleum to the test portion, shake and close the flask by means of the glass stopper.

Let the flask stand undisturbed for 30 minutes at room temperature, which should not be below 20 °C.

Filter the contents through the previously dried glass filter (5.2), applying a slight vacuum.

Wash with at least 50 ml of *n*-hexane or light petroleum which has been warmed to about 30 °C, until the filter is free from fat.

Dry the filter in the oven (5.5) for 1 hour at 103 ± 2 °C, cool in the desiccator (5.6) and weigh.

Repeat the drying, cooling and weighing operations, using drying periods of 30 minutes, until the difference between the results of successive weighings does not exceed 0.001 g.

Carry out two determinations on the same prepared sample.

8. EXPRESSION OF RESULTS

8.1 Method of calculation and formula

The content of insoluble impurities, as a percentage by mass, is equal to

$$(M_2 - M_1) \times \frac{100}{M_0}$$

where

M_0 is the mass, in grammes, of the test portion;

M_1 is the mass, in grammes, of the dried glass filter (5.2);

M_2 is the mass, in grammes, of the glass filter and insoluble impurities after drying to constant mass.

Take as the result the arithmetic mean of the two determinations, if the requirement of clause 8.2 is satisfied.

8.2 Repeatability

The difference between the results of duplicate determinations carried out almost simultaneously or in rapid succession by the same analyst should not be greater than 0.02 g of insoluble impurities per 100 g of sample in the case of high-grade products, nor greater than 0.05 g per 100 g of sample in the case of other products.

9. TEST REPORT

The test report should show the method used, the solvent used and the result obtained. It should also mention any operating conditions not specified in this ISO Recommendation, or regarded as optional, as well as any circumstances that may have influenced the result.

The test report should include all details required for the complete identification of the sample.

---

* In preparation.

Date of the first printing :
December 1969

Price based on 2 pages