



SLOVENSKI STANDARD
SIST EN ISO 5555:2002

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Animal and vegetable fats and oils - Sampling (ISO 5555:2001)

Tierische und pflanzliche Fette und Öle - Probenahme (ISO 5555:2001)

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Corps gras d'origines animale et végétale - Echantillonnage (ISO 5555:2001)

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ICS:

67.200.10 Üæ dā • \ ^ / Å Á ã ç ð \ ^ { æ [à ^ Å Á | ðæ Animal and vegetable fats and oils

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 5555

December 2001

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Supersedes EN ISO 5555:1995

English version

Animal and vegetable fats and oils - Sampling (ISO 5555:2001)

Corps gras d'origines animale et végétale - Echantillonnage
(ISO 5555:2001)

Tierische und pflanzliche Fette und Öle - Probenahme (ISO
5555:2001)

This European Standard was approved by CEN on 14 December 2001.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN ISO 5555:2001 (E)

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Foreword

This document (ISO 5555:2001) has been prepared by Technical Committee ISO/TC 34 "Agricultural food products" in collaboration with Technical Committee CEN/TC 307 "Oilseeds, vegetable and animal fats and oils and their by-products - Methods of sampling and analysis", the secretariat of which is held by AFNOR.

This document supersedes EN ISO 5555:1995.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2002, and conflicting national standards shall be withdrawn at the latest by June 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Endorsement notice

The text of the International Standard ISO 5555:2001 has been approved by CEN as a European Standard without any modifications.

INTERNATIONAL STANDARD

**ISO
5555**

Third edition
2001-12-15

Animal and vegetable fats and oils — Sampling

Corps gras d'origines animale et végétale — Échantillonnage

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ISO 5555:2001(E)**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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 5555 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 11, *Animal and vegetable fats and oils*.

This third edition cancels and replaces the second edition (ISO 5555:1991), which has been technically revised.

Annexes A and B of this International Standard are for information only.

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Animal and vegetable fats and oils — Sampling

1 Scope

This International Standard describes methods of sampling crude or processed animal and vegetable fats and oils (referred to as fats hereafter), whatever the origin and whether liquid or solid. It also describes the apparatus used for this process.

NOTE Methods of sampling milk and milk products, including milk fats, are specified in ISO 707.

2 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

2.1

consignment

quantity of fat delivered at one time and covered by a particular contract or shipping document

NOTE It may be composed of one or more lots or parts of lots.

2.2

lot

identified quantity of fat, presumed to have uniform characteristics

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2.3

increment

quantity of fat taken at one time from one place in a lot

2.4

bulk sample

quantity of fat obtained by combining the various increments from a lot in amounts proportional to the quantities they represent

NOTE The bulk sample should be representative of the lot and should take account of any contractual requirements.

2.5

laboratory sample

quantity of fat, obtained from the bulk sample after suitable homogenization and reduction in size, which is representative of the lot and intended for laboratory examination

2.6

conventional mass per volume sample

“litre weight in air” sample

quantity of fat taken for the mass of fat to be calculated from the volume

3 General principles

The object of sampling and of preparing samples is to obtain from a consignment (which may be in lots) a manageable quantity of the fat, the properties of which correspond as closely as possible to the properties of the consignment sampled.

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The methods of taking samples described below are intended for the guidance of experts and may be used for

- a) consignments in bulk, e.g. in land tanks, ships' tanks, tank wagons, tank cars and tank containers, and
- b) consignments consisting of a number of packages, e.g. barrels, drums, cases, tins, bags and bottles.

4 Requirements for apparatus

4.1 General

For a particular purpose, the choice of sampling instruments and their suitability depend on the skill of the sampler in following the recommended procedures.

In all circumstances, it shall be borne in mind whether the sample is intended for preliminary inspection, for analysis, or for the determination of conventional mass per volume ("litre weight in air").

4.2 Materials

Sampling instruments, ancillary apparatus and sample containers shall be made of materials which are chemically inert to the fat being sampled and they shall not catalyse chemical reactions.

For sampling instruments, stainless steel is the most suitable material. Aluminium may be used only when the acidity is low but not for the storage of samples.

Only plastics which meet the requirements of the first paragraph above, at the operating temperature conditions, may be used; polyethylene terephthalate (PET) satisfying food contact requirements is recommended.

Copper and copper alloys shall not be used nor any toxic material.

WARNING — If glass apparatus is used for a particular reason, great care shall be taken to avoid breakages. Under no circumstances is glass permitted inside tanks containing oils and fats.

4.3 Examples of types of sampling instruments

4.3.1 General

Many forms and types of sampling instruments exist, and the instruments described in this International Standard are only examples of those commonly used.

The instruments are all simple, robust and easily cleaned. They may be used for all the sampling operations described in this International Standard with all types of fats commonly found in commerce.

Certain basic requirements are common to all sampling instruments; for example they shall be capable of taking a representative sample from a required level or area, and of preserving the integrity of the sample until it can be transferred to a sample container. Ease of cleaning, practical size and ability to withstand rough usage are other essential characteristics.

Alternative designs of instruments to those described in this International Standard may be used, for example to meet the needs of individual users.

The instruments may be of various sizes according to the quantity of sample required and the accessibility of the fat.

4.3.2 Sampling instruments

The following types may be used.

- a) Simple weighted sample can, see B.1 and Figure B.1.
- b) Weighted cage for sample bottle, see B.2 and Figure B.2.
- c) Valve sampling cylinder (sinker sampler), see B.3 and Figure B.3.
- d) Bottom samplers, see B.4 and Figure B.4.
- e) Sampling tubes, see B.5 and Figure B.5.
- f) Sampling scoops, see B.6 and Figure B.6.

4.4 Ancillary apparatus

The following may also be required.

- a) Water-finding rule, see B.7 and Figure B.7.
- b) Ullage rule, see B.8 and Figure B.8.
- c) Labels, adhesive or tie-on, and sealing apparatus; see also clause 7.
- d) Thermometers, see B.9.
- e) Measuring tape and weight, see B.10.

4.5 Sample containers

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Sample containers shall be made of the materials specified in 4.2.

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5 Sampling technique

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- 5.1** All sampling operations shall be performed by an operator with clean hands or wearing gloves (clean plastics or cotton gloves may be used).
- 5.2** The apparatus and sample containers shall be clean and dry prior to use.
- 5.3** Sampling shall be carried out in such a manner as to protect the samples, the fat being sampled, the sampling instruments and the sample containers from adventitious contamination with rain, dust, etc.
- 5.4** All extraneous material shall be removed from the outside of the sampling instruments before the instruments are emptied.
- 5.5** If heating is necessary to facilitate sampling, it is important that fats are not overheated. It is recommended, in accordance with usual practice, that the temperature of a bulk of fat in a storage tank should not be raised by more than 5 °C per day.

The area of heating coils should be large in relation to the volume of fat and their temperature should be kept as low as possible to avoid local overheating. Steam, at a maximum pressure of 150 kPa (1,5 bar) gauge reading (128 °C) or hot water (only if the heating coils are self-draining) should be used. Care is required to prevent contamination of the fat by steam or water.

The temperature of the fat during sampling should be within the range indicated in annex A.

- 5.6** After samples have been taken as specified in 6.1 to 6.8, as appropriate, laboratory samples shall be prepared as specified in 6.9.

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6 Methods of sampling

6.1 General

6.1.1 Containers for transport and storage of fats

A distinction is made between the following types of containers from which samples are taken and which might affect the method of sampling to be used:

- a) vertical cylindrical land tanks (see 6.2);
- b) ships' tanks (see 6.3);
- c) tank wagons or cars (see 6.4);
- d) horizontal cylindrical tanks including tank containers (see 6.4);
- e) weigh tanks (see 6.5);
- f) pipelines during transfer (see 6.6);
- g) packages, e.g. barrels, drums, cases, tins, bags and bottles (see 6.8).

The procedure is also given for sampling for the determination of conventional mass per volume ("litre weight in air") (see 6.7).

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6.1.2 Water

Water may be present as free water at the bottom (i.e. separated water), as an emulsion layer or as water in suspension in the fat in any of the containers described in 6.1.1. However, during usual operations the fat is unlikely to remain static for sufficient time in weigh tanks and pipelines for the water to settle to the bottom.

Measurement of water is mostly conducted in vertical storage tanks (see 6.2), but the same principles apply to the containers listed other than pipelines.

The presence of water may be detected with a bottom sampler (B.4) and free water may be measured with a water-finding rule (B.7) and water-finding paste or paper, or by electronic means.

Whichever method is used, accurate determination of water content is often difficult because of the indistinct separation of free water and the emulsion layer and water in suspension, in the lower layers of the fat.

It can also be useful to determine whether the water is fresh or sea water.

6.2 Sampling from vertical cylindrical land tanks

6.2.1 Preliminary operations

6.2.1.1 Sediment, emulsion and free water

Determine whether there is sediment or an emulsion layer or free water at the bottom of the tank by means of a bottom sampler and/or water detectors as described in 6.1.2.

The careful application of heat followed by standing assists the water in suspension to settle out (see 5.5).

It is desirable, so far as possible, to run off free water before sampling, subject to contractual requirements and the agreement of contract parties, and to measure the amount removed.