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# International Standard



# 5555

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## Animal and vegetable fats and oils — Sampling

*Corps gras d'origines animale et végétale — Échantillonnage*

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## Foreword

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

Australia	Iran	Poland
Brazil	Iraq	Romania
Canada	Ireland	South Africa, Rep. of
Chile	Israel	Tanzania
Czechoslovakia	Kenya	Thailand
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Ethiopia	Malaysia	United Kingdom
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

France  
Portugal

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# Animal and vegetable fats and oils — Sampling

## 0 Introduction

Correct sampling is a difficult process and one that requires most careful attention. Emphasis cannot therefore be too strongly laid on the necessity of obtaining properly representative samples of fats and oils for analysis.

Practically all fats and oils are sold on the basis of a sample and on the result of analysis of the sample, and disputes are invariably settled by reference to the sample, so that careless or inaccurate sampling could lead to misunderstanding, delay and unwarranted financial adjustments.

The procedures given in this International Standard are recognized as good practice and it is strongly recommended that they be followed whenever practicable. It is recognized that it is difficult to lay down fixed rules to be followed in every case, and particular circumstances may render some modification of the methods desirable.

## 1 Scope and field of application

This International Standard describes methods of sampling crude or processed animal and vegetable fats and oils. It also describes the apparatus used for this purpose.

### NOTES

- 1 Throughout this International Standard, the word "animal" is to be understood to include marine animals.
- 2 Methods of sampling milk and milk products, including milk fats, are specified in ISO 707, *Milk and milk products — Methods of sampling*.<sup>1)</sup>

## 2 Definitions

For the purpose of this International Standard, the following definitions apply :

**2.1 consignment** : The quantity of fat or oil dispatched at one time and covered by a particular contract or shipping document. It may be composed of one or more lots or parts of lots.

**2.2 lot** : A stated quantity of the consignment, presumed to be of uniform characteristics, and which will allow the quality to be assessed.

**2.3 increment; primary sample; sub-sample** : A quantity of fat or oil taken from one place in a lot.

**2.4 bulk sample** : The quantity of fat or oil 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.

**2.5 laboratory sample; contract sample** : The quantity of fat or oil, 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 weight per unit volume sample** : The quantity of fat or oil obtained from points where the weight of fat or oil is to be calculated from the volume.

## 3 General

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

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

- a) consignments in bulk, for example in land tanks, ships' tanks, tank wagons, tank cars;
- b) consignments consisting of a number of packages, for example barrels, drums, cases, tins, bags.

## 4 Apparatus

### 4.1 General

The choice of sampling instruments for a particular purpose, 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 weight per unit volume.

1) At present at the stage of draft. (Revision of ISO/R 707-1968.)

## 4.2 Materials

Sampling instruments shall be made of materials which are chemically inert to the fat or oil being sampled, and they shall not catalyse chemical reactions. Copper or alloys containing copper shall not be used. Stainless steel, aluminium, glass and some non-softening plastics materials are suitable; glass shall be used only if alternative materials are not acceptable.

**WARNING** — If glass apparatus is used, great care shall be taken to avoid breakages, due to the danger of contamination of the sample, and the bulk, with broken glass.

## 4.3 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, easily cleaned and relatively easy to manufacture. They can be used for all the sampling operations described in this International Standard with all the types of fats and oils commonly found in commerce. Many of the alternative designs of instruments available have been designed to meet the special requirements of individual users.

Certain basic requirements are common to all sampling instruments, for example to take a representative sample from a required level or area and to preserve 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.

The instruments mentioned in 4.3.2.1 to 4.3.2.4 are made in various convenient sizes, and those mentioned in 4.3.2.6 and 4.3.2.7 can be made with small diameters for use through small access holes.

The types of apparatus mentioned below are illustrated and described in annex B. Dimensions given in the illustrations are not mandatory, but are intended to serve as a guide to manufacturers.

### 4.3.2 Sampling instruments

**4.3.2.1 Sample bottle or can** (see annex B, clause B.1 and figure 4).

**4.3.2.2 Sampling tipping dipper** (see annex B, clause B.2 and figure 5).

**4.3.2.3 Valve sampling cylinder (sinker sampler)** (see annex B, clause B.3 and figure 6).

**4.3.2.4 Bottom samplers or zone samplers** (see annex B, clause B.4 and figures 7 and 8).

**4.3.2.5 Continuous average sampler** (see annex B, clause B.5 and figures 9 and 10).

**4.3.2.6 Sampling tubes** (see annex B, clause B.6 and figure 11).

**4.3.2.7 Valve sampling tube** (see annex B, clause B.7 and figure 12).

**4.3.2.8 Compartmented valve sampling cylinder** (see annex B, clause B.8 and figures 13 and 14).

**4.3.2.9 Sampling scoops** (see annex B, clause B.9 and figures 15 and 16).

## 4.4 Ancillary apparatus

**4.4.1 Water-finding instruments** (see annex B, clause B.10 and figures 17 and 18).

**4.4.2 Sampling tube withdrawal cleaner** (see annex B, clause B.11 and figure 19).

**4.4.3 Sample containers.**

**4.4.4 Adhesive and tie-on labels and sealing apparatus** (see also clause 7).

**4.4.5 Thermometers.**

**4.4.6 Measuring tape.**

## 5 Sampling technique

**5.1** All sampling operations shall be performed with clean hands or wearing gloves (clean plastic or cotton gloves may be used).

**5.2** Only clean, dry apparatus and sample containers shall be used. The sampling instruments shall be washed with a hot solution of soap or detergent, and afterwards rinsed thoroughly with clean hot water. Before use, the washed apparatus shall be carefully dried, for example in an oven. If a supply of steam is available, the washed apparatus shall be held in a jet of the steam for a short time.

**5.3** Sampling shall be carried out in such a manner as to protect the samples, the fat or oil being sampled, the sampling instruments and the containers in which the samples are placed, from adventitious contamination such as rain, dust, etc.

**5.4** All extraneous material shall be removed from the outside of the sampling instruments before the latter are emptied.

**5.5** It is important that fats and oils are not overheated. It is recommended, in accordance with standard practice, that the

temperature of a bulk of fat or oil in a large tank should not be raised by more than 5 °C per day.

**5.6** The temperature of the product during sampling shall be within the range indicated in annex A.

## 6 Methods of sampling

### 6.1 Types of container

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

- vertical cylindrical land tanks;
- ships' tanks;
- tank wagons or cars;
- horizontal land tanks;
- weigh tanks;
- pipelines;
- consignments in packages, for example barrels, drums, cases, tins, bags, bottles.

### 6.2 Sampling from vertical cylindrical land tanks

#### 6.2.1 Preliminary operations

##### 6.2.1.1 Presence of water

By means of a bottom sampler and a water-finding instrument, determine whether there is a sediment or a layer of oil of different composition, or a layer of water, at the bottom of the tank.

It is desirable, as far as possible, to remove any free water before sampling commences. This quantity of water shall be measured and reported to the buyer and seller or to their representatives.

##### 6.2.1.2 Homogenizing

Before sampling begins, it is essential that the whole of the product is as homogeneous and as nearly liquid as possible.

If the condition of the oil to be sampled (after any water has been removed) is not known, take a sample to provide this in-

formation using a continuous average sampler (4.3.2.5), or take an increment from the bottom of the tank, using a bottom sampler or zone sampler (4.3.2.4) or a valve sampling cylinder (4.3.2.3). Use this sample to ascertain whether the contents of the tank are homogeneous.

If oil layers of different composition are present, homogeneity can, in most cases, be obtained by heating; this shall be performed only when strictly necessary, and shall never take place by direct contact of steam with the product. It is recommended that the maximum temperature indicated in annex A should not be exceeded.

If heating is performed, it is preferable to use hot water passing through heating coils. If steam is used, the maximum steam pressure shall be 240 kPa gauge reading (138 °C).

If heating is not permissible because of the nature of the oil, or if it is not necessary, or if heating has to be avoided for any other reason, the oil can be made homogeneous by blowing nitrogen through it.<sup>1)</sup> Alternatively, it may be possible to cause mixing by transfer to another tank.

#### 6.2.2 Procedure

If the contents of the tank are not homogeneous, a valve sampling cylinder (4.3.2.3) is generally used, but a bottom sampler (4.3.2.4), used with a cord, is also suitable. Take increments at depths of every 300 mm, from top to bottom, until the layer of different composition is reached. In this layer, take more increments (for example at depths of every 100 mm) together with a bottom sample. Prepare three samples as follows :

- a) a sample of the clear oil;
- b) a sample of the separated layer;
- c) a bulk sample prepared by mixing samples a) and b) in proportion to the respective sizes of the two layers, taking care to ensure that the correct proportions are as exact as possible.

If the contents of the tank are homogeneous, use the same sampling instrument as before, but in this case take at least three increments, from 'top', 'middle' and 'bottom'.<sup>2)</sup> Prepare the bulk sample by mixing one part from each of the top and bottom increments with at least three parts from the middle.

### 6.3 Sampling from ships' tanks

The shape and disposition of ships' tanks make it difficult, if not impossible, to take samples properly. Usually, sampling is carried out during transfer as described in 6.6. If, however, samples are to be taken from ships' tanks, use as far as poss-

1) If an oil is known to be inhomogeneous and nitrogen is not available, the parties may agree to blowing dry air through the product, although this process is to be deprecated because it involves deterioration of the oil by oxidation. Details of such operations should be included in the sampling report sent to the laboratory.

2) The 'top' increment should be taken at a level of one-tenth of the total depth from the surface. The middle increment should be taken at a level of one-half of the total depth and the bottom increment should be taken at a level of nine-tenths of the total depth.

ible, the method described in 6.2, including the preliminary operations, such as heating.

Sample each tank separately. Take the number of bulk samples indicated in table 1. If preparing the bulk sample from increments taken from a tank, make allowance for the shape of the tank by mixing, as far as possible, the increments in the corresponding proportions. Barge tanks should preferably be sampled as soon as they have been filled.

**Table 1 — Number of bulk samples to be taken from each ship or land tank**

Mass of tank contents, t	Number of bulk samples to be taken
Up to and including 500	1
Over 500 up to and including 1 000	2
Over 1 000	1 for every 500 t or part thereof

**6.4 Sampling from tank wagons or cars and horizontal cylindrical tanks**

Samples should preferably be taken as soon as the tanks have been filled, i.e. before settling occurs leading to possible fractionating or layering.

Take the increments by means of the valve sampling tube (4.3.2.7). Insert this open (it shall be of sufficient length to touch the bottom of the tank) so that it takes a sample throughout the whole depth of the liquid. Alternatively, use the valve sampling cylinder (4.3.2.3) by the procedure described in 6.2.2.

If the increments cannot be taken immediately after the tanks have been filled, perform a preliminary test, if necessary, for the presence of free water. If free water is present in substantial quantities, remove it by opening the bottom tap, accurately determine the mass of water removed and report this to the buyer and seller or to their representatives. Then make the contents sufficiently homogeneous by blowing nitrogen<sup>1)</sup> through and/or by heating until they are entirely liquid, provided that the particular oil being sampled will not suffer from such treatment.

If circumstances require that static liquid has to be sampled in a tank wagon or horizontal cylindrical tank, without mixing as indicated above, the greatest care is necessary in taking the correct proportion of sample relative to the liquid depth. Whereas one dip of the valve sampling tube would give a correct sample for freshly filled tanks, a correction for tank shape is necessary for static liquids in tanks of circular or elliptical cross-section. Make this correction by taking a second dip, of only about one-third of the mass of the first dip, from the middle layers of the tank. Mix the two dips to form the bulk sample.

Figure 1 shows the cross-sections of typical tanks. These are drawn on squared paper and marked off at 300 mm levels. Comparisons of the areas, and hence the volumes, of each

300 mm depth can be made by counting the squares; approximate values of the comparative areas are shown at the right of each diagram.

If sampling with bottle samplers or zone samplers, take increments from each level in the proportions of the comparative areas in order to form the bulk sample.

One and one-third dips of the valve sampling tube are required for cylindrical tanks, whilst one and slightly less than one-third are required for tanks of elliptical cross-section. In practice, the proportion of one and one-third dips is used for both shapes of tanks as the difference is insignificant. The most convenient method of taking the "tank-shape-corrected" sample, mentioned above, is as follows.

Take three dips in all. It is essential that the first two are full dips, the sampling tube reaching to the bottom of the tank and showing the depth of oil on the tube markings. For the third dip insert the instrument only to two-thirds of the depth from the surface, so that it holds only two-thirds of the amount of either of the first two dips. In all three cases, insert the valve sampling tube open, first clearing away any scum at the surface of the oil. In the first two cases, lower the instrument slowly throughout the whole depth, and, in the third case, drop it very rapidly through the first third and slowly through the middle third. This ensures that the increments are taken where required. (Whilst it is appreciated that the third dip can be made with the tube closed until it reaches the middle layer, confusion may arise with the two different methods employed and the procedure described is the established practice of bulk sampling.) Prepare the bulk sample by thoroughly mixing the three dips.

If a valve sampling cylinder is used to sample every 300 mm of depth of the tank wagon, the column at the right of each diagram in figure 1 shows the proportions of the increments, from each 300 mm level, that should be mixed to form the bulk sample. This fairly simple method (of drawing to scale, on graph paper, the cross-section of tanks of any shape or size) can be used to indicate the proportions of increments for mixing. Inclined tanks shall be sampled by the methods described in 6.3 for ships' tanks. The tank-shape-corrections described above are not applicable to inclined or irregular tanks.

An alternative procedure is to use a compartmented valve sampling cylinder (4.3.2.8), as described in annex B, clause B.8, for tanks, wagons, cars, or horizontal cylindrical tanks. The volume of each compartment is proportional to the volume of liquid in the tank at the level of that compartment.

**6.5 Sampling from weigh tanks**

Weigh tanks shall be sampled immediately after they have been filled, before settling occurs. Take the sample by allowing the sampling instrument (for example a zone sampler) to sink to the middle and fill it. Should unavoidable delay occur, which may result in the settling of sediment at the bottom of the tank, agitate the contents before sampling, or carry out sampling at depths of every 300 mm. If the tank is closed, sample from a horizontal drip tap immediately after filling.

1) See the footnote to 6.2.1.



## 6.6 Sampling of oils during transfer

### 6.6.1 General

This method shall be used only if the product is entirely liquid, homogeneous and contains no components which could block the tap. Any water-containing emulsion, for example fore-pump oil, shall be drawn off, stored, sampled and weighed separately.

Samples from very large bulk quantities may be taken during transfer by means of frequent removals of material from the flow at regular intervals when the tank is being emptied; this method is particularly easy to apply if the oil is transferred from a tank fitted with a weigh tank meter.

Alternatively, sampling may be carried out by means of a side or secondary stream tapped from the main stream. Certain conditions, however, have to be carefully observed to ensure accurate sampling by this method, which is most suited to relatively homogeneous consignments of oil. The difficulties arising from the presence of free water and extraneous matter are obvious.

### 6.6.2 Taps or drip-cocks

The tap or drip-cock shall be fed from a nozzle of diameter not less than 9,5 mm, fixed in the centre of the main discharge pipeline and facing the flow of liquid. Taps let into the side or bottom of the pipeline are not acceptable. The tap or drip-cock shall be introduced, if possible, into a horizontal section of the main pipeline, as far from elbows and T-joints as possible, and preferably within 10 to 50 m of the pressure side of the pump. A pet-cock is not recommended. A suitable arrangement is shown in figure 2. The sampling line shall be of diameter not less than 9,5 mm and shall fall continuously to its outlet. The tap or drip-cock shall be of such design as to be easily and quickly cleaned in case of blockage.

### 6.6.3 Procedure

The rate of flow in the main pipeline shall be sufficient to ensure the turbulence necessary to effect complete mixing of the product in the pipeline and shall be maintained as constant as possible.

A cover shall be fitted over the whole apparatus and the sample containers to prevent adventitious contamination.

Carefully and immediately mix all the sample taken from the drip-cock, after completion of the discharge, to form the bulk sample, from which the laboratory samples are to be taken.

Figure 3 shows a suitable tank for the collection and mixing of the bulk sample.

In view of the possibility of blockage of the drip-cock etc., by pieces of dirt, and of variations that inevitably occur in the flow,

it is essential that an experienced sampler is present constantly throughout the sampling operation.

### 6.6.4 Minimum size of bulk sample

Bulk samples shall be taken during transfer from each tank, as indicated in table 2.

Table 2 — Minimum size of bulk sample

Mass of tank contents, t	Minimum size of bulk sample, litres
Up to and including 20	1
Over 20 up to and including 50	5
Over 50 up to and including 500	10

## 6.7 Sampling from tanks for determination of weight per unit volume

The mass of the contents of the tank can be determined from the product of volume and weight per unit volume of the contents of the tank.

Take a special sample for determining the weight per unit volume as follows.

For products which are not liquid, or are only partially liquid, slowly heat, before measuring and sampling, so that the contents of the tank are uniformly heated and local overheating is avoided.<sup>1)</sup>

Continue heating until the fat has completely melted. Avoid, however, heating to too high a temperature, as this may impair the quality of the fat. For the oils and fats listed in annex A, the temperature at the time of measurement and sampling should be kept within the limits indicated, unless otherwise agreed between the parties concerned.

After heating, allow the contents of the tank to stand until they are more or less free from air and there is little or no scum floating on the surface. Once these requirements are fulfilled the sample may be taken.

Take increments, preferably at several points, at three levels ('top', 'middle', 'bottom'), but not less than 100 mm from the bottom. Pour them into a sampling bucket and mix them to form the bulk sample. If there is a great deal of sediment in the contents of the tank, take the increments at depths of every 300 mm in accordance with 6.2.1. Determine the temperature and volume of the contents of the tank immediately before and after sampling.

Measure the temperature, preferably at several points, at each of three levels. Take the average of the values found as the temperature of the contents of the tank during sampling and measurement of volume.

1) It is recommended, in accordance with standard practice, that the temperature of a bulk of fat or oil in a large tank should not be raised by more than 5 °C per day.

**6.8 Sampling from packages (small packing units)**

**6.8.1 General**

If a consignment consists of a large number of separate units, for example barrels, drums, cases, tins (loose or in cartons), bottles or bags, it will often be difficult, if not impossible, to sample each separate unit.

In such cases, therefore, a suitable number of units shall be chosen entirely at random<sup>1)</sup> from the consignment to ensure as far as possible, that, together, they represent the average properties of the consignment.

It is impossible to give any hard and fast rule for the number of units to be sampled, as this depends to a large extent on the uniformity of the consignment.

It is therefore desirable that the parties concerned first agree on the number of units to be sampled. If there is no such prior agreement, a distinction shall be made between the following :

- a) consignments which may be assumed to be more or less uniform;
- b) consignments which are known not to be uniform;
- c) consignments about which nothing is known;
- d) consignments, the quality of which is suspect owing to the possible presence of foreign bodies in one or more of the units.

Treat each of these cases, respectively, as follows :

- a) treat the consignment as one lot;
- b) treat each quality, based on visual inspection, as one lot, the proportion of each lot being determined;
- c) carry out preliminary investigation and reclassify as a) or b);
- d) carry out an inspection to isolate the suspect packages and deal with these individually.

In the event of a single bulk sample representing the whole consignment being required, the increments taken from the different qualities shall be mixed together in the same proportions as exist between the masses of the different qualities.

If consignments can be assumed to be reasonably homogeneous, the packages shall be sampled at random. Recommendations for the number of packages to be selected for sampling are given in table 3.

**Table 3 — Number of packages to be sampled**

Size of package	Number of packages in the consignment	Number of packages to be sampled
Over 20 kg up to 5 t maximum	1 to 5	all
	6 to 50	6
	51 to 75	8
	76 to 100	10
Over 5 kg up to and including 20 kg	1 to 20	all
	21 to 200	20
	201 to 800	25
	801 to 1 600	35
	1 601 to 3 200	45
	3 201 to 8 000	60
	8 001 to 16 000	72
	16 001 to 24 000	84
	24 001 to 32 000	96
more than 32 000	108	
Up to and including 5 kg	1 to 20	all
	21 to 1 500	20
	1 501 to 5 000	25
	5 001 to 15 000	35
	15 001 to 35 000	45
	35 001 to 60 000	60
	60 001 to 90 000	72
	90 001 to 130 000	84
	130 001 to 170 000	96
more than 170 000	108	

**6.8.2 Consignments in small tanks, drums, barrels and other small packages**

**6.8.2.1 Procedure for packages containing solid or semi-liquid fats**

To obtain increments from solid fats in drums, insert a sampling scoop (4.3.2.9, see figure 16) through the opening of the drum, probing the whole depth of the contents in as many directions as possible. Withdraw the scoop with a twisting motion thus withdrawing a "cylinder" of fat. Mix the samples taken from each drum thoroughly in a stainless steel or aluminium bucket and place this mixed sample in sample containers.

If water is present, make a hole through the fat to the bottom of the container and remove the water by suitable means.

Sample soft pastes and semi-liquid products in drums in a similar manner, but using a sampling scoop (4.3.2.9, see figure 15) or a valve sampling tube (4.3.2.7). In this case, insert the scoop or tube open into the product, with the shutter closed, and withdraw the increment. Prepare a mixed sample in the same manner as described above.

**6.8.2.2 Procedure for packages containing liquid fats and oils**

Roll and turn over barrels and casks filled with liquid fat or oil and stir the contents well, by hand or mechanically, with a pad-

1) Tables of random numbers may be used, such as those described in clause 15 of ISO 2859/Add. 1, *Sampling procedures and tables for inspection by attributes — Addendum 1 : General information on sampling inspection, and guide to the use of the ISO 2859 tables.*

dle or stirrer. Take an increment from each container to be sampled using a suitable sampling instrument (see, for example, figures 11, 12 and 15), inserted through the bungholes of barrels or through convenient openings in other containers, in such a manner as to sample from as many parts of the contents as possible. Thoroughly mix equal portions of these increments to form the bulk sample.

### 6.8.3 Procedure for packages containing loose solid fats

If fats are in a loose lumpy condition, obtain a representative sample by collecting, from all different parts, sufficient amounts of all sizes of lumps, which may be broken into smaller pieces if necessary, and quarter the resultant sample to a suitable size.

By agreement between the parties concerned, the mixing and reduction of the increments to prepare the bulk sample may be carried out on a mixing table or bench proceeding as follows. (The mixing table or bench shall be at least 750 mm square and shall be covered with a sheet of plate glass, white tile or stainless steel.)

Empty the increments on to the mixing table and knead to a doughy homogeneous consistency. Mix with a large (250 mm) spatula so that any particles of dirt and/or globules of moisture are evenly distributed throughout the mass.

Reduce the resultant sample to the required size by quartering using the spatula.

If the increments of fat are too hard for hand kneading, allow them to stand in a warm place until sufficiently softened. On no account shall heat be applied as this may cause loss of moisture by evaporation.

### 6.9 Preparation of laboratory (contract) samples

One homogeneous bulk sample shall be prepared for every 500 t or part thereof of the consignment (see table 1). According to the agreement between the parties concerned, the laboratory (contract) samples shall be prepared

- a) either after a weighted average sample has been prepared from the bulk samples; or
- b) using each of the bulk samples (if agreed between the parties concerned, the laboratory may prepare a weighted average sample from the laboratory samples).

Whichever procedure [a) or b)] is followed, the prepared samples shall be divided in order to obtain at least four laboratory samples of minimum size 250 ml in the case of oils or 250 g in the case of fats. They shall be put into clean dry containers with lids (new corks or caps), sealed and labelled (see clause 7).

NOTE — For certain purposes, a sample of 500 ml or 500 g, or even more, may be required.

## 7 Packing and labelling of samples

### 7.1 Packing

The samples shall be packed in clean, dry, airtight containers made of glass or other material (for example tin-plated steel) which will have no harmful effect on the sample. The sample containers shall be almost, but not quite, filled; a little air space shall be allowed at the top for expansion. This space shall not be too large, however, as air exerts a detrimental action on most oils. Unless otherwise agreed, the containers shall be closed and sealed. Glass bottles are recommended for oils and glass jars for fats. Rubber and flexible PVC stoppers shall not be used to close the containers. For oils of acidic character, metal containers or closures shall not be used.

Plastics containers are not recommended as they may absorb fat or oil or soften when heated.

All samples shall be protected from light and heat.

When the sample is intended for particular tests, it may be necessary to take certain additional precautions in the choice of the method of packing to be used.

### 7.2 Information concerning samples

The full details of sampling, number of packages sampled etc., shall be recorded, and a label bearing the particulars of the sample shall be attached and sealed where required to every sample container. The sample shall not be accessible without breaking the seal.

The label shall carry all the information necessary for identification of the sample including the following :

- 1) Ship or vehicle
- 2) From
- 3) To
- 4) Arrived
- 5) Quantity
- 6) Bulk/containers
- 7) Goods and origin
- 8) Identification mark
- 9) Bill of lading No. and date, or contract No. and date
- 10) Sampled by
- 11) Method of sampling (for example tank sampling)
- 12) Date of sampling
- 13) Place and point of sampling
- 14) Name of organization responsible for the terms of the contract

The information on the label shall be recorded in indelible ink.

It is recommended that, if paper labels are used, they should be of a suitable quality and size for the purpose. The eyelet hole in the label should be reinforced.

## 8 Dispatch of samples

Laboratory samples shall be dispatched as soon as possible, and only in exceptional circumstances more than 48 h after sampling has been completed, non-business days excluded.

The samples shall be kept cool and away from light as far as possible, unless only the determination of weight per unit volume is required.

## 9 Sampling report

The sampling report shall give the information listed in 7.2 and shall make reference to the condition of the fat or oil sampled. It shall also refer to the technique applied, if this differs from that described in this International Standard, and to all the circumstances that may have influenced sampling.

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