International Standard 7516

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Instant tea in solid form — Sampling

Thé soluble sous forme solide — Échantillonnage

First edition — 1984-11-15

UDC 663.958 : 620.11 **Ref. No. ISO 7516-1984 (E)**

Descriptors : agricultural products, tea, sampling.

Price based on 4 pages

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. Every 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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7516 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Printed in Switzerland

Instant tea in solid form — Sampling

0 Introduction

Being a natural product, instant tea may exhibit variable characteristics associated with the season of manufacture and/or the source of leaf material. In addition, variable manufacturing characteristics, such as bulk density, powder flowability and particle size, are critically important. For these reasons, it is desirable that a sample of any lot or consignment is prepared at the factory and forwarded to the customer for approval prior to the instant tea being dispatched from the factory.

In order to confirm that a given consignment of instant tea conforms to a contract specification, a buyer may wish to sample a representative number of boxes on arrival at his premises. However, instant tea in solid form is generally packed and transported in bulk in sealed bags of moisture-resistant material (i.e. an immediate container), protected by an outer container. Owing to the hygroscopic nature and friability of the product, special precautions need to be taken in order to ensure that the taking of samples does not adversely affect the sample itself or the remainder of the lot.

1 Scope and field of application

This International Standard specifies methods of sampling instant tea in solid form (hereinafter referred to as "instant tea").

It applies to sampling from containers of all sizes.

Separate methods are described for sampling at the point of manufacture, sampling at subsequent stages in the distribution chain and sampling of retail packs.

In addition, for sampling at some of these locations, different procedures or special precautions are specified depending on whether the samples are to be used for examination of particle characteristics (for example bulk density, flowability, particle size) or compositional characteristics (for example moisture content, ash).

2 Definitions

For the purpose of this International Standard, the following definitions apply.[1)]

2.1 consignment: The quantity of instant tea dispatched or received at one time and covered by a particular contract or shipping document. The consignment may be made up of one or more lots or parts of lots.

2.2 lot; break: A defined quantity of instant tea, presumed to be of uniform characteristics, taken from a consignment and allowing the quality to be assessed.

2.3 primary sample[2)]: A small quantity of instant tea, taken at one time from one point in a single immediate container, or, where appropriate, the whole contents of one immediate container in the lot [in the case of containers containing less than 1 kg of instant tea (see 4.3.5)].

NOTE — A series of primary samples is taken from different positions in the lot.

2.4 bulk sample: The quantity of instant tea obtained by bringing together the primary samples taken from different positions in the lot and which is representative of the quality of the lot.

2.5 laboratory sample: A prescribed quantity of instant tea taken from the bulk sample, representative of the quality of the lot and intended for analysis or other examination.

2.6 point of manufacture: The point in the factory at which the instant tea is being poured into its first immediate container up to the time when the immediate container is sealed.

2.7 immediate container: The container that is in contact with the instant tea; it may be surrounded by an outer container or outer containers.

Examples of immediate containers are:

a) a sealed bag in which tea is transported in bulk, protected by an outer container such as a fibreboard box;

b) a glass jar or sealed bag in a box in which the instant tea is packed usually for retail sale.

1) The terms and definitions in this clause take cognizance of, but are not identical with, those in ISO 3534, *Statistics — Vocabulary and symbols*.

2) In ISO 3534, the term "increment" is used for this concept, but this term is not used in sampling in the tea trade.

2.8 retail pack: Any package in which the immediate container contains less than 1 kg of instant tea.

3 General conditions of sampling

3.1 Sampling shall be carried out by persons appointed by buyers and/or sellers and, if desired, in the presence of the buyer (or his representatives) and the seller (or his representatives).

3.2 Sampling shall be carried out in a covered place, in such a manner that the samples of instant tea, the sampling apparatus and the sample containers are protected from adventitious contamination and other factors likely to affect the samples, for example moisture, dust, etc.

Special care is necessary to ensure that the sampling instruments are clean and dry, and do not impart any taint or contamination to the sample.

3.3 Handling of the sample (for example combining of primary samples into the bulk sample, packaging of the sample) shall be carried out with care in order to avoid changing the original characteristics of the instant tea.

3.4 If it is obvious from the visual appearance of the primary samples that the lot is not uniform within the definition of "lot" (see 2.2), the sampling shall be discontinued and reference made back to the person who ordered the sampling to be carried out.

4 Sampling from immediate containers

4.1 Number of immediate containers to be sampled

Unless otherwise specified in 4.3 or in a contract, the number of immediate containers to be sampled shall be as given in 4.1.1 to 4.1.3.

4.1.1 Immediate containers containing more than 20 kg of instant tea

In the case of immediate containers containing more than 20 kg of loose instant tea, the minimum number of containers to be sampled from a lot shall be as shown in table 1.

Table 1

Number of immediate containers in lot	Number of immediate containers to be sampled
2 to 10	2
11 to 25	3
26 to 100	5
101 and over	7

4.1.2 Immediate containers containing not more than 1 kg of instant tea

In the case of immediate containers containing not more than 1 kg of loose instant tea, the minimum number of containers to be sampled from a lot shall be as shown in table 2, provided that the mass specified for each laboratory sample is obtained.

Table 2

Number of immediate containers in lot	Number of immediate containers to be sampled
up to 25	3
26 to 100	5
101 to 300	7
301 to 500	10
501 to 1 000	15
1 001 to 3 000	20
3 001 and over	25

4.1.3 Immediate containers containing 1 to 20 kg of instant tea

The minimum number of immediate containers to be sampled from a lot shall be that shown in table 1 or table 2, according to agreement between the interested parties.

4.2 Procedure for random sampling

The containers to be sampled shall be taken at random, and, for this purpose, use should be made of random number tables. If such tables are not available, the following procedure may be used:

Let N be the number of immediate containers in the lot and n be the number of immediate containers to be taken. Starting from any immediate container, count the immediate containers in order as 1, 2, etc., up to r, where $r = N/n$ (If N/n is not a whole number, take r as the integral part of it). Select the rth immediate container, until the required number of immediate containers has been taken.

In the case of immediate containers containing not more than 1 kg of instant tea, if the containers are packed in outer cases, cartons or crates containing a convenient number of units, approximately 20 % (but, not fewer than two) of these outer packages shall be taken at random. From these, immediate containers shall be taken in equal numbers, at random, so as to make up the required number of immediate containers to be sampled, as specified in 4.1.2.

4.3 Primary samples

4.3.1 General

The method of taking primary samples depends on the point in the manufacturing and distribution chain at which sampling is to be undertaken and can depend on the methods of analysis that will be made on the samples.

When sampling at the point of manufacture, method A (see 4.3.2) shall be used. The samples so obtained may be used for any determination.

When sampling at any point after the point of manufacture, provided that the instant tea is not packed in retail packages

— method B (see 4.3.3) shall be used when the samples are required for determinations of bulk density, flowability and particle size. The samples shall not be used for the determination of moisture content but may be used for any other determinations.

— method C (see 4.3.4) shall be used when the samples are required for the determination of moisture content. The samples shall not be used for determinations of bulk density, flowability and particle size but may be used for any other determinations.

When sampling retail packs, method D (see 4.3.5) shall be used. The samples so obtained may be used for any determination.

4.3.2 Method A

4.3.2.1 Apparatus

The following apparatus is required:

— powder scoop

— polyethylene bag (large enough to hold all primary samples)

4.3.2.2 Procedure

Using the scoop, take a primary sample from each immediate container (in the lot) as it is being filled or when filled but before it is sealed. Place the primary samples in the polyethylene bag.

Minimize the risk of take up or loss of moisture by keeping the polyethylene bag holding the primary samples closed except when inserting further samples, and with as little air inside as possible.

Use the primary samples to obtain a bulk sample (see 4.4).

4.3.3 Method B

4.3.3.1 Apparatus

The following apparatus is required:

— polyethylene bags at least equal in volume to those in which the instant tea is received from the manufacturer

— powder scoop

— poyethylene bag (large enough to hold all the primary samples)

— polyethylene heat sealer (optional)

4.3.3.2 Procedure

The number of immediate containers to be sampled from a given lot or consignment shall either be subject to prior agreement between the interested parties, or, in the absence of such agreement, in accordance with 4.1.

The required number of immediate containers shall be withdrawn from the lot or consignment according to a system of random numbers.

Operating preferably in an air-conditioned room, open completely one of the outer containers and the immediate container inside it. Gently pour at full flow the entire contents of the immediate container into a polyethylene bag so that the contents are mixed and any layers destroyed.

Using the scoop, take a primary sample from the top surface of this bag and place it in another polyethylene bag (i.e. the bag which will contain the bulk sample). Place the filled bag in its outer container and seal it using the heat sealer or other effective method of sealing.

Repeat the procedure on all the other immediate containers to be sampled.

Use the primary samples to obtain a bulk sample (see 4.4).

4.3.4 Method C

4.3.4.1 Apparatus

The following apparatus is required:

— a suitable trier

— poyethylene bag (large enough to hold all the primary samples)

— polyethylene heat sealer (optional)

4.3.4.2 Procedure

The number of immediate containers to be sampled from a given lot or consignment shall either be subject to prior agreement between the interested parties, or, in the absence of such agreement, in accordance with 4.1.

The required number of immediate containers shall be withdrawn from the lot or consignment according to a system of random numbers.

Open each outer container and its immediate container, causing as little damage as possible. Using the trier, take a primary sample from the immediate container and place it in the polyethylene bag. Reseal the immediate container using the heat sealer or other effective method of sealing and reseal the outer container.

Minimize the risk of take up or loss of moisture by keeping the polyethylene bag holding the primary samples closed except when inserting further samples, and with as little air inside as possible.

Repeat the procedure on all the other immediate containers to be sampled.

Use the primary samples to obtain a bulk sample (see 4.4).

4.3.5 Method D

4.3.5.1 Apparatus

The following apparatus is required:

— polyethylene bag (large enough to hold all the primary samples)

4.3.5.2 Procedure

The number of immediate containers to be sampled from a given lot or consignment shall be subject to prior agreement between the interested parties, or, in the absence of such agreement, in accordance with 4.1.

The required number of immediate containers shall be withdrawn from the lot or consignment according to a system of random numbers.

If the amount of instant tea in each immediate container does not exceed 50 g, each container shall constitute a primary sample. (The containers shall be opened and their contents collected together and treated as the bulk sample.)

If the amount of instant tea in each immediate container exceeds 50 g, invert the container several times to mix the contents. Open the container and pour out about 50 g of instant tea into the polyethylene bag. Minimize the risk of take up or loss of moisture by keeping the polyethylene bag holding the primary samples closed except when inserting further samples, and with as little air inside as possible.

Repeat the procedure on all other immediate containers to be sampled.

Use the primary samples to obtain a bulk sample (see 4.4).

4.4 Bulk sample and laboratory samples

4.4.1 The bulk sample, formed by combining primary samples of loose material, shall be well mixed and shall then be divided rapidly into the required number of laboratory samples, taking precautions to avoid mechanical damage to, and take up or loss of moisture by, the samples.

NOTE — Replicate samples will be often required, for example as duplicate or reference samples, and, in general, the number and size of the laboratory samples to be taken for examination and arbitration should conform to recognized trade practices, unless otherwise agreed.

4.4.2 The size of each laboratory sample shall be not less than 1 litre, unless otherwise agreed.

NOTE — 1 litre of low density instant tea weighs about 100 g and 1 litre of high density instant tea weighs about 500 g.

4.4.3 Each laboratory sample shall be packed in a polyethylene bag which shall be sealed using a heat sealer or other effective method of sealing, with as little air inside as possible.

NOTE — Owing to the hygroscopic character of instant tea as well as its ability to pick up taint, it is essential that the laboratory samples be transferred to their polyethylene bags as promptly as possible.

5 Packaging and labelling of laboratory sample

5.1 Packaging of samples

The laboratory samples contained in sealed polyethylene bags shall be packed in clean, dry, odour-free, opaque, rigid moisture-resistant containers with close-fitting lids, of such a size that they are almost completely filled by the sample.

5.2 Labelling of samples

Each sample container shall carry a label marked with full details of the place and date of sampling, the name of the manufacturer or marketer, the invoice and lot number, the name of the sampler and any other important particulars relating to the consignment, together with a statement of the sampling method (A, B, C or D).

6 Dispatch of laboratory samples

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.

7 Sampling report

If a sampling report is prepared, it is recommended that reference should be made to any unusual appearance of the containers or product, and all the circumstances that may have influenced sampling. It shall include the following details:

a) place of sampling;

b) date of sampling;

c) time of sampling, and time of subsequent sealing of sample containers;

d) names and descriptions of sampling personnel and witnesses;

e) identification of the method used (i.e. A, B, C or D), and any modifications to the technique described; together with a note of any restrictions concerning any determinations which shall not be made on the sample;

f) nature and number of units constituting the lot, and reference to relevant documents and details of marking;

g) number of samples and their identification (markings, batch number, etc.);

h) destination of samples;

j) condition of packages and surroundings;

k) whether the premises were air-conditioned during sampling and, if required, the atmospheric conditions during sampling, including relative humidity.