INTERNATIONAL STANDARD

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Tea — Classification of grades by particle size analysis

Thé — Classification par catégories par analyse granulométrique

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Foreword

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ISO 11286 was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 8, *Tea*.

This second edition cancels and replaces the first edition (ISO 11286:1997), of which it constitutes a minor revision. The Scope has been modified to exclude large leafy grades of tea.

Introduction

For many years the tea trade has used various systems for the grading nomenclature of teas according to the sieves used for sorting the teas. However, a designation given in one country does not always have the same meaning in another and it was considered by some countries, in particular tea-producing countries, that a single, international method of classifying tea grades according to their particle size distributions would facilitate international trade.

The method given in this International Standard provides such a system to supplement the existing traditional systems.

Tea — Classification of grades by particle size analysis

1 Scope

This International Standard specifies a method for the classification of grades of tea according to an analysis of their particle size. It is not applicable to large, leafy grades of tea.

This method may not be suitable for blends of tea.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3310-1:1990, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

3 Principle

The tea is separated into different size fractions using a series of sieves on a shaker. The tea particles retained on each sieve are weighed and the percentage by mass retained on each sieve is calculated.

4 Apparatus

Usual laboratory apparatus and, in particular, the following.

4.1 Sieve shaker, capable of a vibration rate of 3 000 per minute, a vibration stroke of up to 3 mm and a vibration angle of 30°, with automatic timer [1)].

4.2 Test sieves, conforming to ISO 3310-1, of nominal diameter 200 mm and of nominal apertures sizes 2 mm, 1,4 mm, 1 mm, 710 µm, 355 µm, 250 µm, 150 µm and 75 µm, together with a base pan (less than 75 µm) and a clamp.

5 Sampling

Sampling is not part of the method specified in this International Standard. A recommended sampling method is given in ISO 1839 [2)].

1) Endecotts Octagon 200 and Endecotts EFC Mark 1 are examples of suitable shakers available commercially. This information is given for the convenience of users of this International Standard and does not constitute an endorsement by ISO of the these products.

2) ISO 1839:1980, *Tea — Sampling*.

It is important that the laboratory receive a sample which is truly representative and has not been damaged or changed during transport or storage.

6 Procedure

6.1 If sufficient of the sample is available, it is recommended that the analysis be carried out in duplicate.

6.2 Arrange the test sieves (4.2) in descending order of mesh size and fit them together.

6.3 Weigh 100 g $\pm$ 1 g of the laboratory sample into a 400 ml beaker. Transfer the tea quantitatively to the top sieve and fit the cover.

6.4 Place the sieves onto the sieve shaker (4.1) and secure them using the clamp provided.

Set an automatic timer to 10 min and start the shaker.

6.5 When the shaker stops, remove the test sieves and carefully separate them.

6.6 Transfer quantitatively the tea that has been retained on each sieve into a series of beakers, previously weighed to the nearest 0,01 g, and weigh to the nearest 0,01 g.

6.7 It is recommended that an appropriate brush be used to aid the transfer of the tea from the test sieves to the beakers.

7 Calculation

Determine the percentage of tea retained on each test sieve and note the mesh sizes of the test sieves on which the largest amount (the peak) and the second largest amounts of tea were retained.

8 Classification

Classify the tea into one of the grades listed in Table 1 in accordance with the definitions given.

Each of the grades 1 to 6 in Table 1 may be divided into subgrades A, B and C, as follows:

A: up to 2,0 % passing 355 µm;
B: more than 2,0 % passing 355 µm;
C: more than 5,0 % passing 355 µm.

Each of the grades 7 to 10 in Table 1 may be divided into subgrades A, B and C, as follows:

A: up to 2,0 % passing 250 µm;
B: more than 2,0 % passing 250 µm;
C: more than 5,0 % passing 250 µm.

Each of the grades 11 to 15 in Table 1 may be divided into subgrades A, B and C, as follows:

A: up to 2,0 % passing 150 µm;
B: more than 2,0 % and up to 5,0 % passing 150 µm;
C: more than 5,0 % passing 150 µm.

9 Test report

The test report shall specify:

a) all information necessary for the complete identification of the sample;

b) the sampling method used, if known;

c) the test method used, with reference to this International Standard;

d) all operating details not specified in this International Standard, or regarded as optional, together with details of any incidents which may have influenced the test result(s);

e) the test results obtained.

Table 1 — Grade designations

Grade	Definition
1	Peak in 2 mm
2	Peak in 1,4 mm and second highest peak in 2 mm
3	Peak in 1,4 mm and second highest peak in 1 mm
4	Peak in 1 mm and second highest peak in 1,4 mm
4.5	Peak in 1 mm and second highest peak in 2 mm
5	Peak in 1 mm and second highest peak in 710 µm, and number of sieves retaining $>$ 25 % $=$ 1
6	Peak in 1 mm and second highest peak in 710 µm, and number of sieves retaining $>$ 25 % $=$ 2 or more
7	Peak in 710 µm and second highest peak in 1 mm
8	Peak in 710 µm and second highest peak in 355 µm
9	Peak in 355 µm and second highest peak in 710 µm, and number of sieves retaining $>$ 25 % $=$ 2 or more
9.5	Peak in 355 µm and second highest peak in 1 mm
10	Peak in 355 µm and second highest peak in 710 µm, and number of sieves retaining $>$ 25 % $=$ 1
11	Peak in 355 µm and second highest peak in 250 µm, and number of sieves retaining $<$ 25 % $=$ 1
12	Peak in 355 µm and second highest peak in 250 µm, and number of sieves retaining $<$ 25 % $=$ 2 or more
12.5	Peak in 355 µm and second highest peak in 150 µm
13	Peak in 250 µm and second highest peak in 355 µm
14	Peak in 150 µm or peak in 250 µm and second highest peak in 150 µm, and number of sieves retaining $<$ 50 % $=$ 1
15	Peak in 150 µm or peak in 250 µm and second highest peak in 150 µm, and number of sieves retaining $<$ 50 % $=$ 0
NOTE $>$ means greater than; $<$ means less than.	

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