



Technical Specification

ISO/TS 6818

Traditional Chinese medicine — Test method for moxa floss quality — Concentration of waste particles

*Médecine traditionnelle chinoise — Méthode d'essai pour
l'évaluation de la qualité des moxas — Concentration de
particules de déchets*

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Foreword

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This document was prepared by Technical Committee ISO/TC 249, *Traditional Chinese medicine*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Moxa floss is a main combustion material of the moxibustion devices. The manufacturing process of moxa floss involves the repeated pounding of dried mugwort in a mortar and sifting ground mugwort in a fine sieve. Based on the products traditionally selected from the manufacturing process, the green part (waste particle) should be sifted out and the white or light-yellow part should be used.

Traditionally, the quality assessment of the moxa floss has depended on the human sensory evaluation, however, the global market requires the quantitative measurement of the quality of moxa floss for fair trade.

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Traditional Chinese medicine — Test method for moxa floss quality — Concentration of waste particles

1 Scope

This document specifies test methods for the quality assessment of moxa floss. It covers sample preparation, measurement and calculation of the concentration of waste particle, and delivery of moxa floss quality information.

This document is applicable to any moxa floss products and moxa floss used in the moxibustion devices. It is not applicable to the moxa floss which is hardened with chemical ingredients or high pressure, or both, and carbonized moxa floss which is used for smokeless moxibustion devices.

Classification of quality grade of moxa floss is not specified in this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 9284, *Abrasive grains — Test-sieving machines*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

moxa floss

cotton-like material for moxibustion made from mugwort leaves

[SOURCE: ISO 18666:2021, 3.5]

3.2

waste particle

impurity, other than the fibres in the *moxa floss* (3.1), that is generated following the moxa floss manufacturing process of grinding and mostly removed in the manufacturing process of *sieving* (3.6)

Note 1 to entry: The waste particles include broken branch of mugwort and green crystal formed materials which are generated during the manufacturing process of the moxa floss.

Note 2 to entry: Traditionally and commonly, lower waste particles are considered as higher quality. Thus, reduction of waste particle is required during the manufacturing process of the moxa floss.

Note 3 to entry: A high *concentration of waste particle* (3.4) decreases the structural strength of moxa floss.

3.3

moxibustion device

apparatus that uses *moxa floss* (3.1) as the main combustion material and is intended for single or repeated usage

[SOURCE: ISO 18666:2021, 3.1, modified — EXAMPLE and note 1 to entry have been removed.]

3.4

concentration of waste particle

quality parameter of *moxa floss* (3.1) which shows how much the moxa floss contains *waste particle* (3.2), and indicated by both of *waste particle rate* (3.9) and *unseparation rate* (3.10)

3.5

test sieve

sieve, satisfying the requirements of ISO 3310-1 (metal wire cloth) or ISO 3310-2 (perforated metal plate), used for screening tests of powdery or granular matter

[SOURCE: ISO 11323:2010, 6.11]

3.6

sieving

process of separating a mixture of particles according to their sizes by one or more sieves

[SOURCE: ISO 8157:2022, 3.3.5]

3.7

test sieving

sieving (3.6) with one or more *test sieves* (3.5)

[SOURCE: ISO 8157:2022, 3.3.5.1]

3.8

sieving machine

machine designed to simulate the hand shaking procedure specified in the method for carrying out a size analysis

[SOURCE: ISO 1213-2:2024, 3.203, modified — The term has been changed from "sieving test machine" to "sieving machine".]

3.9

waste particle rate

ratio of residues remaining in the sieves below 300 µm

3.10

unseparation rate

ratio of residues remaining in the 850 µm sieves

Note 1 to entry: The term of 'unseparated' means that the *moxa floss* (3.1) is remaining in the 850 µm sieves because it has not separated yet due to the size of the fibres while it may contain waste particles.

3.11

quality of moxa floss

complex assessment of a variety of parameters for *moxa floss* (3.1)

Note 1 to entry: Ratio of fibres and *waste particles* (3.2), chemical characteristics, yield, colour and etc. can be the parameters for assess the quality of moxa floss.

3.12

grade of moxa floss

ordinal class or scale indicating the *quality of moxa floss* (3.11)

Note 1 to entry: For example, commonly, the grade of moxa floss is divided into two classes: for direct moxibustion and for indirect moxibustion.

Note 2 to entry: The quality of moxa floss means measurement value from the test, while the grade means classification in accordance with the quality value and national regulation.

4 Sampling

4.1 General

The sampling shall be performed in a random manner. Unpredicted deformation shall not appear in the sampling procedure.

The sampling mass shall be 3,0 g, with a tolerance of $\pm 10\%$.

More than 3 units of the specimen shall be prepared.

4.2 Sampling methods

4.2.1 Moxa floss products

Sampling of the specimen shall be performed from mass of moxa floss. Only one specimen shall be collected from one primary package.

The mass of moxa floss shall be mixed well before sampling of the specimen because the waste particles can be sedimented and the concentration can be different between the top and the bottom in the package.

4.2.2 Moxa floss in the moxibustion devices

A specimen from the moxa floss contained in the moxibustion device shall be collected from the final product of the moxibustion device.

Each specimen may contain moxa floss from various units collected randomly from a different primary package.

Sampling of the specimen shall be performed with an understanding of the structure of the devices. The specimen shall not be deformed or contaminated under the sampling process.

4.3 Sample storage

The specimens shall be stored in the desiccator for more than 48 h to remove the humidity. Sulfuric acid or other reactive materials shall not be used as desiccants. Desiccator using silica gel or electrical device may be used. The humidity in the desiccator shall be under $11\% \pm 1\%$ and the temperature shall be $25\text{ °C} \pm 2\text{ °C}$.

During the storage periods, the specimen shall not be exposed to the direct light or air flow.

5 Measurement of concentration of waste particle

5.1 General

The concentration of waste particle, which is generated in the grinding process, is the traditional indication of the moxa floss quality and can be measured by separating waste particles from moxa floss throughout the test method using the standard sieves.

The test shall be performed in an air-conditioned room with closed air circulation. Any artificial airflow shall not be allowed during the test.

5.2 Test instruments

5.2.1 General

The test instruments shall consist of the sieve part and the sieving machine part.

5.2.2 Test sieves

The standard test sieves specified in ISO 3310-1 shall apply.

The size of the test sieves shall be 850 μm , 600 μm , 425 μm , 300 μm , 200 μm , 150 μm , 100 μm and 75 μm .

The diameter of the test sieves shall be 200 mm at minimum and 450 mm at maximum.

5.2.3 Sieving machine

For the test sieving, the sieving machine specified in ISO 9284 shall apply.

5.2.4 Test instruments organization

The test sieves shall be stacked on the sieving machine in the order of sieve sizes from 850 μm to 75 μm , from the top to the bottom. The top sieve (850 μm) shall be covered with the lid; a base plate shall be placed under the 75 μm size sieve (between the 75 μm size sieve and the sieving machine).

The sieves shall be fixed tightly with the sieving machine. For the fixation of the sieves, belts and buckles or metal rods and screws may be used. See [Annex A](#) for examples of test instruments.

5.3 Test procedure

5.3.1 General

The prepared specimen shall be tested in accordance with the following procedure of sieving weighing and calculation.

The test shall be performed at least four times for each product.

See [Annex B](#) for additional information on the test result of the concentration of waste particle in moxa floss ([Table B.1](#)).

5.3.2 Sieving

The prepared specimen shall be located in the top sieve (850 μm) and shall be sieved for 10 h.

The cover lid on the top sieve shall not be open until the end of the test to prevent loss of the specimen.

5.3.3 Weighing

After 10 h of the sieving, the residues in each sieve shall be collected and weighed.

The residue shall be fully collected by brushing the residue caught in the mesh of the test sieves with a fine brush.

The residue collected from each sieve shall be weighed in the accuracy of 0,001 g.

6 Calculation of concentration of waste particle

6.1 Total mass of specimen

The total mass of the specimen shall be calculated by adding the mass of the residue from every sieve. See [Formula \(1\)](#).

$$m_t = m_{850} + m_{600} + m_{425} + m_{300} + m_{200} + m_{150} + m_{100} + m_{75} + m_{bp} \quad (1)$$

where

- m_t is the total mass of the specimen;
- m_{850} is the mass of the residue in the 850 μm sieve;
- m_{600} is the mass of the residue in the 600 μm sieve;
- m_{425} is the mass of the residue in the 425 μm sieve;
- m_{300} is the mass of the residue in the 300 μm sieve;
- m_{200} is the mass of the residue in the 200 μm sieve;
- m_{150} is the mass of the residue in the 150 μm sieve;
- m_{100} is the mass of the residue in the 100 μm sieve;
- m_{75} is the mass of the residue in the 75 μm sieve;
- m_{bp} is the mass of the residue in the base plate.

NOTE The mass of the specimen can change due to the insufficient loss during the sieving procedure.

6.2 Waste particle rate

The concentration of the waste particle shall be calculated as the ratio of the residues in the sieves below 300 μm to the total mass of specimen. See [Formula \(2\)](#).

$$C_{wp} = \frac{(m_{300} + m_{200} + m_{150} + m_{100} + m_{75} + m_{bp})}{m_t} \quad (2)$$

where

- C_{wp} is the waste particle rate;
- m_t is the total mass of the specimen;
- m_{300} is the mass of the residue in the 300 μm sieve;
- m_{200} is the mass of the residue in the 200 μm sieve;
- m_{150} is the mass of the residue in the 150 μm sieve;
- m_{100} is the mass of the residue in the 100 μm sieve;
- m_{75} is the mass of the residue in the 75 μm sieve;
- m_{bp} is the mass of the residue in the base plate.

6.3 Unseparation rate

The unseparation rate shall be calculated as the ratio of the residues in the top sieve to the total mass of the specimen. See [Formula \(3\)](#).

$$S = \frac{m_{850}}{m_t} \quad (3)$$

where

- S is the unseparation rate;
- m_{850} is the mass of the residue in the 850 μm sieve;
- m_t is the total mass of the specimen.

7 Delivery of the moxa floss quality information

7.1 General

The manufacturer should test the moxa floss quality and document the following in the test report:

- sample information (date of manufacture, sampling methods, storage of samples);
- test report reference number;
- test results;
- test environments;
- any unusual features observed during the test;
- date of the test.

The quality information should be provided as a quality certificate in the primary package in accordance with the test report.

NOTE The quality test can be performed by reputable institute when the manufacturer does not provide the quality information.

7.2 Indication

The concentration of waste particle of moxa floss shall be indicated by both parameters of waste particle rate ([6.2](#)) and unseparation rate ([6.3](#)).

NOTE This document requires indication of the quality information of the moxa floss but not the grade of moxa floss.

Annex A
(informative)

Example of test instruments

A.1 Sieving machine

The sieving machine in accordance with ISO 9284 is used for test sieving. The sieving machine works for maximum 30 min at once; and the sieving is processed 20 times.

A.2 Sieves

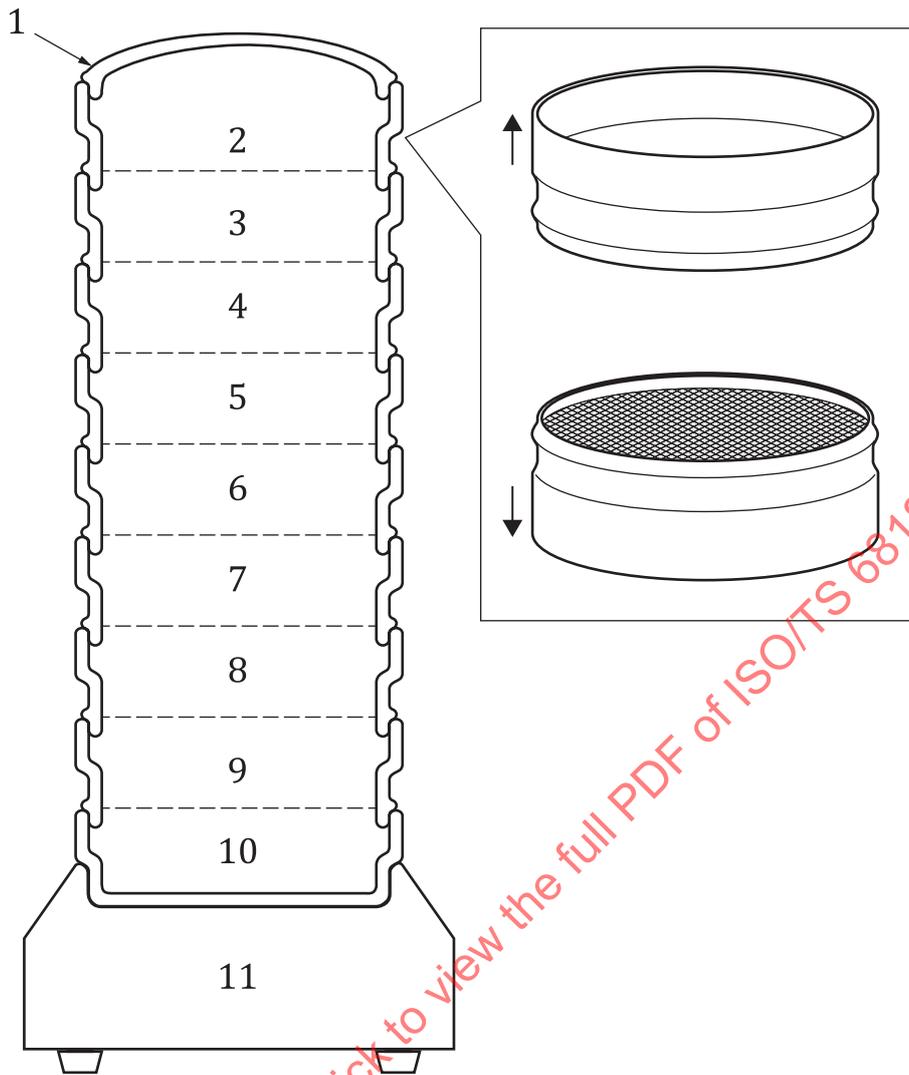
The diameter of the test sieves is 305 mm; and the height is 100 mm. The frame is made of brass; and the screen is made with stainless steel.

A.3 Sieving machine and sieves

The test sieves are stacked on the sieving machine in the order of sieve sizes from 850 μm to 75 μm , from the top to the bottom. The top sieve (850 μm) is covered with the cover lid; and the base plate is placed under the 75 μm size sieve (see [Figure A.1](#)).

The sieves are fixed tightly with the belt and buckle to the sieving machine.

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Key

- | | | | |
|---|--------------------------------|-------|--------------------------------|
| 1 | cover lid | 7 | top sieve (150 μm) |
| 2 | top sieve (850 μm) | 8 | top sieve (100 μm) |
| 3 | top sieve (600 μm) | 9 | top sieve (75 μm) |
| 4 | top sieve (425 μm) | 10 | base plate |
| 5 | top sieve (300 μm) | 11 | sieving machine |
| 6 | top sieve (200 μm) | arrow | upside of the sieve |

Figure A.1 — Test instrument setting