



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 40905.1-2021

**Textiles - Quantitative analysis of cashmere, wool, other
specialty animal fibres and their blends - Part 1: Light
microscopy method**

Issued on: October 11, 2021

Implemented on: May 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is part of GB/T 40905 "Quantitative Analysis of Textile Cashmere, Sheep

Wool, Other Special Animal Fibers and Their Mixtures"

part 1.GB/T 40905 has released the following parts.

---Part 1.Optical microscopy.

This document uses the redrafting law to amend and adopt ISO 17751-1.2016 "Textile Cashmere, Sheep Wool, Other Special Animal Fibers"

Quantitative analysis of its mixture. Part 1.Optical microscopy.

Compared with ISO 17751-1.2016, this document has some structural adjustments, as follows.

---Adjust the content related to sample pretreatment in 7.2.5.2 of ISO 17751-1.2016 to 7.3;

---Adjust all the contents of 9.2 of ISO 17751-1.2016 to 9.1;

--- Chapter 10 has been added.

The technical differences between this document and ISO 17751-1.2016 and the reasons are as follows.

---Regarding normative reference documents, this document has made adjustments with technical differences to adapt to China's technical conditions and adjustments.

The situation is collectively reflected in Chapter 2 "Normative Reference Documents", and the specific adjustments are as follows.

* Replace ISO 139 (see 6.2) with GB/T 6529 modified to adopt international standards;

* Added reference to GB/T 10685-2007 (see 8.2.1.1, 8.2.1.2);

* Added reference to GSB02-2769 (see 8.2.2.1).

--- The micrometer scale has been added to ensure that the detection errors caused by the detection instrument are reduced as much as possible (see 5.1.1, 5.1.2).

--- Increased the number of samples to improve the accuracy of the test results (see 7.1).

---The preparation steps of the sample have been refined, and the relevant description of the preparation method of the test sample that can meet the testing requirements has been added to provide achievable

Other options with the same result (see 7.2.1.3).

---According to the actual testing and calculation requirements, the relevant regulations for woven fabric samples with different warp and weft yarns should be taken, weighed and recorded respectively.

To make relevant regulations more complete (see 7.2.4.1).

--- The extraction step in 7.2.5.2 is adjusted to 7.3, and the operations of the same category

are unified and classified.

--- Increase the requirements and instructions for instrument calibration to reduce the risk of differences in test results (see 8.2.2.1).

---Added 9.2 "Expression of test results" to make the classification more reasonable and the expression more comprehensive (see 9.2).

--- Added a chapter "Test Report" to make the content of the file more complete (see Chapter 10).

---Adjust the nature of Appendix A from "informative" to "normative" so that it can be used in conjunction with the actual testing.

---Adjust and increase the density value of some fibers to meet the needs of daily testing (see Appendix D).

The following editorial changes have been made to this document.

---Added 3.1 note;

---The article number 5.3.1 in ISO 17751-1:2016 is deleted;

---Adjust the note of 9.1 in ISO 17751-1:2016 into paragraphs to modify the expression form of the normative appendix in the text;

---The decolorization method in Appendix B has been re-adjusted to the actual operation sequence and related description;

---Adjusted the presentation order of B.1 and added the article number of B.1.4;

---References have been deleted.

Introduction

Cashmere fiber is good in quality and expensive, but cashmere and other animal hair fibers such as sheep wool, yak wool, camel wool, etc. have similarities

Because of its physical and chemical properties, early mixtures of them could not be accurately quantified by mechanical or chemical methods. And the appearance of these fibers

The states are relatively close, and optical microscopes have always been used for identification.

Research work on the correct identification of cashmere fibers has been ongoing. At present, the more widely used and mature technology is the microscope identification

Methods, including optical microscope (LM) method and scanning electron microscope (SEM) method. SEM method and LM method have their own advantages.

---The advantage of the LM method is that the fiber medulla layer and pigment distribution can be observed. The disadvantage of the LM method is that it cannot clearly present one

Some subtle surface structures; black samples need to be decolorized; improper decolorization will affect the identification of fibers.

---SEM method and LM method have complementary advantages and disadvantages, so some special types of fibers need to be identified by SEM method.

For some samples that are difficult to determine, it is necessary to combine optical microscopy and scanning electron microscopy, and use their respective advantages to perform

Identify.

Practice has proved that the accuracy of the quantitative analysis of the content using this method and the rich detection experience of the inspectors, that is, the appearance of various animal fibers

The understanding and familiarity of morphology have a lot to do with it. Therefore, in addition to the text description, this document also gives details of the different types of animal fibers.

The picture of the surface morphology is for the reference of the inspector.

GB/T 40905 "Textile cashmere, sheep wool, other special animal fibers and their mixtures quantitative analysis" is cashmere, sheep

The quantitative analysis standards for wool, other special animal fibers and their mixtures are planned to consist of two parts.

---Part 1. Optical microscope method;

---Part 2. Scanning electron microscopy.

Textile cashmere, sheep wool, other special animals

Quantitative analysis of fibers and their mixtures

Part 1. Optical Microscopy

1 Scope

This document specifies the qualitative and quantitative analysis of cashmere, sheep wool, other special animal fibers and their mixtures using an optical microscope.

Analysis method.

This document applies to cashmere, sheep wool, other special animal fibers and their mixtures, including loose fibers, semi-finished products and finished products.