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

GB/T 42699.1-2023

**Textiles - Qualitative and quantitative proteomic analysis of
some animal hair fibres - Part 1: Peptide detection using
LC-ESI-MS with protein reduction**

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Standardization Administration**

Table of Contents

foreword

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

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 for Standardization Documents"

drafting:

This document is part 1 of GB/T 42699 "Qualitative and quantitative analysis of the proteome of certain animal hair fibers in textiles":

GB/T 42699 has issued the following parts:

--- Part 1: Reduced protein peptide analysis liquid chromatography-mass spectrometry (LC-ESI-MS) method:

This document is modified to adopt ISO 20418-1:2018 "Qualitative and quantitative analysis of the proteome of certain animal hair fibers in textiles - Part 1

Sub: Reduced Protein Peptide Analysis Liquid Chromatography-Mass Spectrometry (LC-ESI-MS) Method:

Compared with ISO 20418-1:2018, this document has made the following structural adjustments:

--- Deleted Chapter 4 "Abbreviations" of ISO 20418-1:2018;

--- Added "principle" as Chapter 4 of this document;

--- Added Chapter 8 "Precision";

--- Adjust 7:8 "Test Report" of ISO 20418-1:2018 to Chapter 9 of this document;

--- Deleted the informative Appendix C in ISO 20418-1;

--- An informative appendix A has been added:

The technical differences between this document and ISO 20418-1:2018 and their reasons are as follows:

--- Simplified the scope and adjusted the content of the principle to Chapter 4 "Principle" to make the structure and content of the chapters clearer and more standardized

(see Clause 1, Clause 1 of ISO 20418-1:2018);

--- Replaced ISO 1833 (all parts) with the normatively quoted GB/T 2910 (all parts) to adapt to the technical conditions of our country

(see 7:7, 7:7 of ISO 20418-1:2018);

--- Replaced ISO 17751 (all parts) with normatively quoted GB/T 40905 (all parts) to adapt to my country's technical regulations

Parts (see 7:7, 7:7 of ISO 20418-1:2018);

--- Replaced ISO 137 with normatively quoted GB/T 40905:1 to adapt to my country's technical conditions (see 6:3, ISO 20418-

1:6:3 of:2018);

--- Added normative references GB/T 6682, GSB16-2262-2008 and GB/T 6529 to adapt to my country's technical conditions (see

5:8, 7:2 and 7:3:1);

--- Improve the definition of peptides to adapt to my country's technical conditions (see 3:5);

--- Petroleum ether, extraction buffer and eluent A have been added to adapt to the technical conditions of our country (see Chapter 5);

---The title of Chapter 6 was changed to "Instruments and Materials", and double blades, ultrasonic generators, ovens, balances, centrifuge tubes, EP tubes,

The filter screen and its parameters are adapted to the technical conditions of our country (see Chapter 6);

--- Added "precision" and related instructions to provide more reference information for experimental operations (see Chapter 8);

---Added the requirements of "date of test" and "departures from this document such as abnormal conditions during test operation" (see Section

Chapter 9):

The following editorial changes have been made to this document:

---The content of different types of fibers in the formulas in Chapter 7: Subscript fiber names are replaced by their English initials;

--- In 7:3~7:6, the number of subsections is added to each paragraph;

--- In 7:4:2, "two days" is described as "48h", which makes the expression more

standardized;

--- Added Appendix A "The degree of consistency between the various parts of GB/T 2910 and ISO 1833";

--- Modified and perfected the parameters of Appendix B, and supplemented the introductory words to make it more referential;

---Modified the references:

Please note that some contents of this document may refer to patents: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

For the test methods of qualitative and quantitative analysis of certain animal hair fiber proteomes in textiles, for the convenience of use, according to different test principles

Theories and methods are divided into multiple parts: GB/T 42699 "Qualitative and quantitative analysis of the proteome of certain animal hair fibers in textiles" is proposed to be composed of the following two parts:

consists of parts:

--- Part 1: Reduced protein peptide analysis liquid chromatography-mass spectrometry (LC-ESI-MS) method;

--- Part 2: Reduced protein peptide analysis Matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI-TOF-MS) method:

Textiles Certain animal hair fibers Proteins

Group Qualitative and Quantitative Analysis

Part 1: Reduced Protein Peptides

Analytical liquid chromatography-mass spectrometry (LC-ESI-MS) method

1 Scope

This document describes the determination of sheep wool, cashmere, yak wool and their blends in textiles by liquid chromatography-mass spectrometry (LC-ESI-MS):

Qualitative and quantitative analysis methods of substance content:

This document applies to all kinds of textile products containing animal hair fibers and their mixtures:

This document does not apply to the identification of mixtures of animal fibers of the same species (such as mixtures of cashmere and mohair):

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document:

GB/T 2910 (all parts) Quantitative chemical analysis of textiles [ISO 1833 (all parts)]

Note: See Appendix A for the degree of consistency between the various parts of GB/T 2910 and ISO 1833:

GB/T 6529 Standard atmosphere for conditioning and testing textiles (GB/T 6529-2008, ISO 139:2005, MOD)

GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696:1987, MOD)

GB/T 40905 (all parts) Quantitative analysis of textile cashmere, sheep wool, other special animal fibers and their mixtures

[ISO 17751 (all parts)]

Note: GB/T 40905:1-2021 Quantitative analysis of cashmere, sheep wool, other special animal fibers and their mixtures in textiles - Part 1: Optical microscopy

Microscope method (ISO 17751-1:2016, MOD);

GB/T 40905:2-2022 Quantitative analysis of cashmere, sheep wool, other special animal fibers and their mixtures in textiles - Part 2: Scanning Electron

Mirror method (ISO 17751-2:2016, MOD):

GSB16-2262-2008 Cashmere appearance map

3 Terms and Definitions

The following terms and definitions apply to this document:

3:1

animal hair fiber animalhairfibre

Animal hair follicles grow fibers that have a multicellular structure and are composed of keratin:

Examples: cashmere, sheep wool, yak wool, etc: