ICS 59.060.01 SLOVENSKÁ TECHNICKÁ NORMA November 2018

STN	**Textílie** **Kvalitatívna a kvantitatívna proteomická analýza niektorých vlákien zo zvieracích chlpov** **Časť 1: Detekcia peptidov použitím LC-ESI-MS s redukciou proteínov**	**STN** **EN ISO 20418-1** 80 8931

Textiles - Qualitative and quantitative proteomic analysis of some animal hair fibres - Part 1: Peptide detection using LC-ESI-MS with protein reduction (ISO 20418-1:2018)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 10/18

Obsahuje: EN ISO 20418-1:2018, ISO 20418-1:2018

127220

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 20418-1

May 2018

ICS 59.060.01

English Version

Textiles - Qualitative and quantitative proteomic analysis of some animal hair fibres - Part 1: Peptide detection using LC-ESI-MS with protein reduction (ISO 20418-1:2018)

Textiles - Analyse protéomique qualitative et quantitative de certaines fibres animales - Partie 1: Détection des peptides par LC-ESI-MS avec réduction protéique (ISO 20418-1:2018)

Textilien - Qualitative und quantitative Proteomanalyse einiger Tierhaarfasern - Teil 1: Peptiddetektion mittels LC-ESI-MS mit Proteinreduktion (ISO 20418-1:2018)

This European Standard was approved by CEN on 16 March 2018.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN ISO 20418-1:2018 E

Contents

Page

European foreword

This document (EN ISO 20418-1:2018) has been prepared by Technical Committee ISO/TC 38 “Textiles” in collaboration with Technical Committee CEN/TC 248 “Textiles and textile products” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2018, and conflicting national standards shall be withdrawn at the latest by November 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 20418-1:2018 has been approved by CEN as EN ISO 20418-1:2018 without any modification.

INTERNATIONAL STANDARD

ISO 20418-1

First edition
2018-03

Textiles — Qualitative and quantitative proteomic analysis of some animal hair fibres —

Part 1: Peptide detection using LC-ESI-MS with protein reduction

Textiles — Analyse protéomique qualitative et quantitative de certaines fibres animales —

Partie 1: Détection des peptides par LC-ESI-MS avec réduction protéique

Reference number
ISO 20418-1:2018(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

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. Each 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 38, *Textiles.*

A list of all parts in the ISO 20418 series can be found on the ISO website.

Introduction

International producers of textiles in cashmere and other speciality fibres have to be aware of and be able to guarantee the fibre content in order to protect consumers and defend themselves from common frauds. Therefore, it is important to have a harmonized method of analysis at an international level to avoid different interpretations of the results and related conflicts between stakeholders.

The innovations in the method described in this document are

— objective qualitative determination of the presence of fibres derived from animal species and

— quantitative assessment of the relative percentages present in blends.

INTERNATIONAL STANDARD **ISO 20418-1:2018(E)**

Textiles — Qualitative and quantitative proteomic analysis of some animal hair fibres —

Part 1:
Peptide detection using LC-ESI-MS with protein reduction

1 Scope

This document specifies a qualitative and quantitative testing method to determine the content of wool, cashmere, yak fibres and their blends in textiles by microscope preliminary screening, protein extraction, enzymatic digestion and specific peptides detection using a liquid chromatography-mass spectrometer equipped with electrospray ionization source (LCI-ESI-MC).

This method can be applied to relevant textile products at each process stage (i.e. from raw material to garment) with a homogeneous distribution of the components. It can be applied to different types of textile materials (e.g. staples, tops, yarns and fabrics) that contain wool, cashmere or yak fibres and their blends. The method is based on a preliminary identification of all fibres in the blend on the basis of their morphology, by light microscopy. The proteins are then extracted by a thiourea/urea/dithiothreitol (DTT) solution. An enzymatic digestion by trypsin of the protein extracted from the fibres is carried out. Analysis of the specific markers is performed by LC-MS and the percent composition is calculated.

This method is applicable to samples containing other kinds of fibres than wool, cashmere and yak, by combining its results with the results obtained using the ISO 1833 series and/or the ISO 17751 series.

This document does not apply if fibres of the same animal species are present (e.g. blends of cashmere and mohair); in this case, the quantitative analysis can be performed using microscopic analysis (e.g. ISO 17751 series).

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 137:2015, *Wool — Determination of fibre diameter — Projection microscope method*

ISO 1833 (all parts), *Textiles — Quantitative chemical analysis*

ISO 17751 (all parts), *Textiles — Quantitative analysis of cashmere, wool, other specialty animal fibers and their blends*

