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

GB/T 36929.1-2026

Replacing GB/T 36929-2018

**Leather and fur - Determination of per-and polyfluoroalkyl
substances - Part 1: Determination of non-volatile compounds
by liquid chromatography**

皮革和毛皮 全氟和多氟烷基化合物的测定 第1部分：液相色谱法测定非挥发性化合物

(English Translation)

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Foreword

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

Drafting.

This document is Part 1 of GB/T 36929, "Determination of per- and polyfluoroalkyl compounds in leather and fur".

The following sections have been released.

---Part 1: Determination of nonvolatile compounds by liquid chromatography this document replaces GB/T 36929-2018 "Chemical Testing of Leather and Fur - Perfluorooctane sulfonyl compounds (PFOS) and perfluorocarbons (PFOCs)".

The main technical changes in "Determination of PFOA (Potassium-Octobic Oxide)" compared to GB/T 36929-2018, aside from structural adjustments and editorial modifications, are as follows.

as follows.

---The section on "Reagents and Materials" has been revised (see Chapter 5, Chapter 4 in the 2018 edition);

---The section on "Instruments and Equipment" has been amended (see Chapter 6, Chapter 5 of the 2018 edition);

---Added instructions for sampling multi-component samples and coated leather specimens (see 7.1);

---The "Experimental Procedure" has been revised (see Chapter 8, Chapter 6 of the 2018 edition);

---The "Result Calculation" section has been changed (see Chapter 9, 6.7 of the 2018

edition);

---The limits of quantitation and precision have been changed (see Chapter 10, Chapter 7 of the 2018 edition);

---The "Test Report" has been amended (see Chapter 11, Chapter 8 of the 2018 edition).

This document is modified to adopt ISO 23702-1:2023 "Determination of per- and polyfluoroalkyl compounds in leather - Part 1: Liquid chromatography".

Determination of non-volatile compounds.

This document has undergone significant structural adjustments compared to ISO 23702-1:2023. A summary table comparing the structural changes between the two documents can be found here.

Appendix A.

This document differs significantly from ISO 23702-1:2023. The relevant clauses are indicated in vertical margins.

Straight lines (|) are marked. A summary of these technical differences and their reasons can be found in Appendix B.

The following editorial changes have been made to this document.

---The standard name has been changed;

---The explanatory note regarding coating inspection has been removed;

---Informative Appendix B containing information on foreign control of substances has been removed;

---References have been removed.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document is under the jurisdiction of the National Technical Committee on Standardization of Leather Industry (SAC/TC252).

Introduction

Perfluorinated and polyfluoroalkyl compounds (PFAS) refer to compounds containing at least one fully fluorinated methyl group (-CF₃) or fluorinated methylene group (-CF₂-).

Fluorides (where the carbon atom is not bonded to H/Cl/Br/I atoms) are used. Due to the presence of extremely stable carbon-fluorine bonds, PFAS can impart fluorine properties to products.

It possesses properties such as oil resistance, water resistance, stain resistance, dust

resistance, chemical resistance, high temperature resistance, reduced surface friction, and surface activity, and is therefore widely used in leather, etc.

Fur production industry. See Appendix C for the types and applications of PFAS substances.

PFAS are among the most recalcitrant organic pollutants discovered in the world, and they can spread through the food chain, becoming ingested by organisms.

After binding to proteins, they exist in the blood and accumulate in the liver, kidneys, muscles, and other sites, exhibiting significant bioaccumulation. Therefore, this type of...

The substance has certain reproductive toxicity, which seriously threatens the human living environment and physical health, and has been restricted and controlled by many countries at home and abroad.

This document aims to provide a basis for the determination of per- and polyfluoroalkyl substances (PFAS) in leather and fur, and is proposed to consist of two parts.

constitute.

---Part 1: Determination of Non-volatile Compounds by Liquid Chromatography, aiming to establish a liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for the determination of...

Test method for determining the content of non-volatile PFAS in leather and fur;

Test method for volatile PFAS content in skin.

Currently, the determination of PFAS content in leather and fur in my country mainly follows the national standard GB/T 36929-2018 "Leather and Fur".

The standard, "Determination of Perfluorooctane Sulfonyl Compounds (PFOS) and Perfluorooctanoic Acids (PFOA) in Chemical Testing of Skin," only specifies...

Methods for the determination of PFOS and PFOA, two perfluorinated compounds, in leather and fur, and significant technical differences compared to current international standards.

The existing testing methods are no longer sufficient to meet the current testing needs of the industry, posing certain challenges to quality control in the production and trade of related products.

It's difficult and urgently needs revision.

Per- and polyfluoroalkyl materials for leather and fur Determination of Compounds, Part 1.

Determination of Non-volatile Compounds by Liquid Chromatography Warning---This document pertains to the use of hazardous materials and does not address all associated safety and environmental concerns. This document is intended to inform you of the use of

hazardous materials.

Users are responsible for taking appropriate measures to ensure the safety and health of people and the environment, and to meet relevant requirements.

1 Scope

This document describes a liquid chromatography-tandem mass spectrometry (LC-MS/MS) method for the determination of extractable non-volatile perfluorinated and polyfluorinated compounds in leather and fur.

Test methods for fluoroalkyl compounds (PFAS).

This document applies to the determination of non-volatile PFAS content in various types of leather, fur and their products.

Note: See Appendix D for the types of PFAS substances.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

GB/T 6682 Specifications and test methods for water used in analytical laboratories (GB/T 6682-2008, ISO 3696:1987, MOD) GB/T 39364 Sampling sites for testing the chemical, physical, mechanical and color fastness of leather (GB/T 39364-2020, ISO 2418.

2017, MOD)

QB/T 1267 Sampling sites for chemical, physical and mechanical, and color fastness tests on fur QB/T 1272 Preparation of samples for chemical testing of fur QB/T 2262 Leather Industry Terminology QB/T 2716 Preparation of samples for chemical testing of leather

3 Terms and Definitions

The terms and definitions defined in QB/T 2262 apply to this document.

4 Principles

In an ultrasonic generator, leather or fur samples were extracted with methanol under specified conditions, and the extract was analyzed by LC-MS/MS.

The PFAS content in the sample was analyzed and determined.

Note 1: If the sample contains a perfluorinated polymer that releases fluorinated polyol (FTOH) due