

ICS 59.140.30

CCS Y 46



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

GB/T 38403.2-2024

**Leather and fur - Determination of the preservative content -
Part 2: Liquid chromatography method(artificial perspiration
extraction)**

(English Translation)

Issued on: March 15, 2024

Implemented on: October 1, 2024

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

Table of Contents

- Foreword
- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Principle
- 5 Reagents and Materials

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 2 of GB/T 38403 "Determination of mildew inhibitors for leather and fur". GB/T 38403 has been published for the following part.

--- Chemical tests for leather and fur - Determination of mildew inhibitors (TCMTB, PCMC, OPP, OIT). Liquid chromatography method (GB/T 38403-2019);

--- Part 2: Liquid chromatography (artificial sweat extraction).

This document is modified to adopt ISO 13365-2:2020 "Determination of fungicide (TCMTB, PCMC, OPP, OIT) in leather by liquid chromatography" Content of Part 2: Artificial sweat extraction method.

Compared with ISO 13365-2:2020, this document has many structural adjustments. A comparison of the structural number changes between the two documents See Appendix A for the table.

This document has many technical differences compared to ISO 13365-2:2020.

A list of these technical differences and their reasons is given in Appendix B.

The following editorial changes were made to this document.

--- The name of the standard was changed to "Determination of mildew inhibitors on leather and fur - Part 2: Liquid chromatography (artificial sweat extraction)";

--- The description of reagents and materials is changed from table form to chapter form;

- The composition of acid artificial sweat is changed to a table form;
- Deleted the concentration dilution examples when preparing standard working solutions, and added the dilution concentration range when analyzing using different instruments;
- Changed the letter code in formula (2);
- Added the number of formula (3);
- Added material information of 4 kinds of antifungal agents;
- Added chromatograms and spectra of 4 kinds of mildew inhibitors;
- Added the content of method quantitative limit.

Introduction

Leather and fur are prone to mold due to the presence of collagen, protein, oil and other ingredients. Adding mold inhibitors is to prevent leather and fur products from mold.

The most effective means to prevent leather from getting moldy, so mildew inhibitors are common additives in leather and fur.

It will bring different degrees of negative impact on humans and the environment, especially when the content of mildew inhibitors in leather and fur is high, it is very easy to cause human body the detection of the content of mildew inhibitors in leather is currently a very important issue for leather (fur) products (such as clothing, shoes, bags, sofas, etc.) companies.

Therefore, the determination of the content of mildew inhibitors in leather and fur has attracted more and more attention from the society.

It provides a basis for the determination of mildew inhibitor content in leather and fur and is intended to consist of three parts.

--- Part 1: Liquid chromatography (acetonitrile extraction). The purpose is to establish the determination of leather and wool by liquid chromatography after acetonitrile extraction.

Test method for antifungal agent content in leather.

--- Part 2: Liquid chromatography (artificial sweat extraction). The purpose is to establish the determination of Test method for mildew inhibitor content in leather and fur.

--- Part 3: Gas chromatography-mass spectrometry (methanol extraction). The purpose is to establish the gas chromatography-mass spectrometry method after methanol extraction.

Test method for determining the content of mildew inhibitors in leather and fur (not applicable to the determination of TCMTB).

Antifungal agents used in leather and fur processing include thiocyanate (TCMTB),

4-chloro-3-methoxyphenol (PCMC), o-phenyl Products with phenol (OPP) and N-octylisothiazolinone (OIT) as active ingredients are the most widely used. Some foreign leather buyers have the requirements for the content of four substances in leather are put forward. At present, the determination of the content of mildew inhibitors in leather and fur in my country mainly adopts liquid chromatography.

(Acetonitrile extraction), that is, the mildew inhibitor in the sample is extracted with acetonitrile under the action of ultrasound, and then the sample is purified and tested by liquid chromatography.

In addition to liquid chromatography (acetonitrile extraction), ISO 13365-2:2020 has also been published internationally to provide a method for the determination of mildew inhibitors in leather.

A new method was developed to simulate the determination of antifungal agents in leather and fur during actual wearing, which is particularly suitable for evaluating the in actual use, there is a potential release of mildew inhibitors, but my country has not yet established a standard for this method. In view of this, it is necessary to transform it to continuously Adapt to new changes in domestic and foreign products, meet new requirements for product testing under different conditions, improve consistency with international standards, and ensure Coordinate with industry development.

This document is Part 2 of GB/T 38403; GB/T 38403-2019 is intended to be Part 1 of GB/T 38403 when it is revised.

and changed the name of the standard to "Determination of mildew inhibitors for leather and fur - Part 1: Liquid chromatography (acetonitrile extraction)";

Determination of antifungal agents on leather - Part 3: Gas chromatography-mass spectrometry (methanol extraction) is currently in the process of being formulated.

Determination of antifungal agents for leather and fur Part 2: Liquid chromatography (artificial sweat extraction)

1 Scope

This document describes a test method for the determination of antifungal agents in leather and fur by liquid chromatography after extraction with artificial sweat.

This document applies to thiocyanate (TCMTB), 4-chloro-3-methylphenol (PCMC), o-phenylphenol in leather, fur and their products it is also suitable for the determination of semi-finished leathers such as wet blue leather and wet white leather.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

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 locations for chemical, physical, mechanical and colour fastness tests on leather (GB/T 39364-2020, ISO 2418.

2017,MOD)

QB/T 1267 Sampling Locations for Chemical, Physical, Mechanical and Color Fastness Tests on Fur (QB/T 1267-2012, ISO 2418.

2002, MOD)

QB/T 1272 Preparation of fur chemical test samples (QB/T 1272-2012, ISO 4044:2008, MOD) QB/T 1273 Chemical testing of fur - Determination of volatile matter (QB/T 1273-2012, ISO 4684:2005, MOD) QB/T 2716 Preparation of leather chemical test samples (QB/T 2716-2018, ISO 4044:2008, MOD) QB/T 2717 Leather chemical test - Determination of volatile matter (QB/T 2717-2018, ISO 4684:2005, MOD)

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Principle

Under constant temperature and oscillation conditions, the leather/fur is extracted with artificial sweat, and the extract is filtered and then tested with ultraviolet (UV) the samples were analyzed by high performance liquid chromatography (HPLC) with a mass spectrometer (MS).

NOTE: The test method specified in this document is used to evaluate the potential release of mildew inhibitors from leather and fur during use.

5 Reagents and Materials

5.1

Unless otherwise specified, all reagents used are of analytical grade. The water used for HPLC testing should comply with the requirements of Grade 1 water in GB/T 6682.