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

GB/T 38402-2019

**Leather and fur - Chemical tests - Determination of chromium
(VI) content: Chromatographic method**

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4.1 Water, test water shall meet the requirements of Grade III water in GB/T 6682.

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard uses the redrafting method to modify and adopt ISO 17075-2..2017
"Chemical Determination of Hexavalent Chromium Content in Leather

Section. Chromatography.

Compared with ISO 17075-2..2017, this standard has more structural
adjustments. Appendix A gives this standard and ISO 17075-2..2017.

List of chapter number comparisons.

There are technical differences between this standard and ISO 17075-2..2017. Appendix B
gives the corresponding technical differences and their causes.

List.

This standard also makes the following editorial changes.

--- The standard name was revised to `` Determination of hexavalent chromium content in
leather and fur chemical tests. chromatography ";

--- Modified the column models and specifications in Appendix B and Appendix C of ISO
17075-2..2017, and the instrument parameters have been changed accordingly.

Adjustment;

--- Change the verification data in Annex A of ISO 17075-2..2017 to the verification results
of domestic laboratories;

--- Modify the test data in ISO 17075-2..2017 Appendix D to laboratory test data in China.

This standard is proposed by the China Light Industry Federation.

This standard is under the jurisdiction of the National Leather Industry Standardization

Technical Committee (SAC/TC252).

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1 Scope

This standard specifies a method for the determination of hexavalent chromium in leather and fur by chromatography.

This standard applies to the determination of hexavalent chromium in various types of leather, fur and their products.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

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

GB/T 22807 Determination of hexavalent chromium in leather and fur chemical tests. spectrophotometric method (GB/T 22807-2019,

(ISO 17075-1..2017, MOD)

QB/T 1267 Sampling site for fur chemical, physical and mechanical, color fastness test (QB/T 1267-2012, ISO 2418.

2002, MOD)

Preparation of QB/T 1272 fur chemical test samples (QB/T 1272-2012, ISO 4044..2008, MOD)

QB/T 1273 Determination of volatiles in fur chemical test (QB/T 1273-2012, ISO 4684..2005, MOD)

QB/T 2706 Leather chemical, physical, mechanical and color fastness test samples (QB/T

2706-2005, ISO 2418.

2002, MOD)

QB/T 2716 Preparation of leather chemical test samples (QB/T 2716-2018, ISO 4044..2008, MOD)

QB/T 2717 Determination of volatiles in leather chemical test (QB/T 2717-2018, ISO 4684..2005, MOD)

3 Principle

Soluble hexavalent chromium in the sample was extracted with phosphate buffer solution, and filtered with ion exchange color with UV-VIS or DAD detector

Spectrophotometric determination of hexavalent chromium in the extract.

4 Reagents and materials

Unless otherwise stated, all reagents used are analytical grade.

4.1 Water, test water shall meet the requirements of Grade III water in GB/T 6682.

4.2 Phosphate buffer solution (0.1mol/L). Dissolve 22.8g of dipotassium hydrogen phosphate ($K_2HPO_4 \cdot 3H_2O$, relative molecular weight 228) in

1000mL distilled water, adjust the pH to 8.0 $\pm$ 0.1 with phosphoric acid solution (4.3), and discharge with argon or nitrogen (4.7) or ultrasonic water bath

air.

Note. Phosphate buffer solution is recommended to be used now. It can also be stored at 0 degrees C ~ 4 degrees C for one week. Return to room temperature before use and vent the air again.

4.3 Phosphoric acid (H_3PO_4) solution. Dilute 700mL phosphoric acid (85% mass fraction, density 1.71g/mL) with distilled water to

1000mL.

Note. First add 200mL distilled water to a 1000mL volumetric flask, then add 700mL phosphoric acid, and make up to volume with distilled water.