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

GB/T 36946-2018

**Determination of 16 polycyclic aromatic hydrocarbons in
leather - Gas chromatography-mass spectrometry**

皮革 化学试验 多环芳烃的测定 气相色谱-质谱法

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed by the China Light Industry Association. This standard is under the jurisdiction of the National Leather Industry Standardization Technical Committee (SAC/TC252). This standard was drafted. National Leather Quality Supervision and Inspection Center (Zhejiang), Pinghu City Product Quality Supervision and Inspection Institute, Zhejiang University, Hangzhou Zhonghao Applied Engineering Technology Research Institute Co., Ltd., Dongguan Weiside Technology Development Co., Ltd., China Leather and Footwear Industry Research Institute. The main drafters of this standard. Shen Yun, Huang Xinxia, Yu Fengping, Fu Zheng, Zhou Linxia, Chen Hongbo, Wu Qian, Zhang Qiongyang, Zhang Huimin, Zhao Ligu, Step by step. Determination of polycyclic aromatic hydrocarbons in leather chemistry Gas chromatography-mass spectrometry Caution - Personnel using this standard should have practical experience in formal laboratory work. This standard does not indicate all possible security questions. question. It is the responsibility of the user to take appropriate safety and health measures and to ensure compliance with the conditions set by the relevant national regulations.

1 Scope

China's national method for determining sixteen polycyclic aromatic hydrocarbons in leather by gas chromatography-mass spectrometry. The sixteen are the list the United States Environmental Protection Agency established decades ago as priority pollutants, and it has become the default set that regulations worldwide refer to. Their presence in leather comes from several directions: from the mineral oils and greases used in fatliquoring to make the leather supple, from carbon black pigments, from rubber components in footwear, and from smoke where hides were preserved traditionally. Several of the sixteen are carcinogenic, and leather is a material held against skin for hours at a time in shoes, gloves, watch straps and furniture, so the exposure route is real. GC-MS is required rather than a simpler

chromatographic method because the compounds must be identified individually - they differ in potency by orders of magnitude, and a total figure would say nothing useful.

This standard specifies the gas chromatography-mass spectrometry method for the determination of 16 polycyclic aromatic hydrocarbons in leather. This standard applies to the determination of 16 polycyclic aromatic hydrocarbons (see Appendix A) in leather and leather products.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document. QB/T 2706 leather chemical, physical, mechanical and color fastness test sampling site QB/T 2716 Preparation of leather chemical test samples

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Polycyclic aromatic hydrocarbons (polycyclicaromatichydrocarbons); PAHs a series of hydrocarbon compounds and their derivatives fused by two or more benzene rings, which may also have short alkyl or naphthenic rings. Base substituent. [GB/T 28189-2011, definition 2.1]

4 Principle

The sample is extracted by ultrasonic wave, and the extract is concentrated by rotary evaporation, and then purified by a solid phase extraction column on silica gel to determine the volume. Gas chromatograph (GC/MSD) was measured using a selective ion monitoring mode and quantified by external standard method.

5 Reagents and materials

5.1 Dichloromethane, chromatographically pure.

5.2 n-hexane, chromatographically pure.

5.3 Acetone, analytically pure.

5.4 Extract, n-hexane-acetone mixture (volume ratio 1.1).

5.5 Eluent, n-hexane-dichloromethane (

3.2 by volume). 5.6 16 polycyclic aromatic hydrocarbon reference materials. purity not less than 99.0% or known content, see Appendix A.