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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 34842-2017

Footwear - Chemical tests - Determination of formamide

鞋类 化学试验方法 甲酰胺的测定

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Standardization Administration of the PRC

Table of Contents

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. Please note that some of this document may be patentable. The release of this document The agency does not assume responsibility for identifying these patents. This standard proposed by the China Light Industry Federation. This standard by the National Standardization Technical Committee shoes (SAC/TC305) centralized. This standard drafting unit. Shenzhen Institute of Metrology and Quality Inspection, China Leather and Footwear Industry Research Institute, Dongguan City, New Tiger Industries have Limited company, Zhejiang everything Long Sporting Goods Co., Ltd. The main drafters of this standard.Lin Wei Wei, Chang Kai, Zhang Fu, Hu Ju You, Feng Xu root. Footwear chemical test method for the determination of formamide

1 Scope

China's national method for determining formamide in footwear and footwear components by gas chromatography-mass spectrometry. It applies to foamed materials in footwear and its parts. Formamide is there as a residue of manufacture rather than as an ingredient: it is used as a blowing agent in making the ethylene vinyl acetate foam that midsoles, sandals and the soft play mats sold as puzzle tiles are moulded from, and some of it stays in the foam and migrates out over the following weeks. It is classified as toxic for reproduction, and it was found at unexpected levels in children's foam products in Europe around 2010, which triggered recalls and then limits. Since the foam gives it off slowly, the exposure is by inhalation and by skin contact with a product a child may sit or lie on for hours. Measuring it needs GC-MS because the quantities are small and the matrix is a polymer full of other volatiles, and this method fixes the extraction, the separation and the confirmation.

This standard specifies the use of gas chromatography - mass spectrometry method for the determination of footwear and footwear components foam formamide method. This standard applies to the determination of foaming materials formamide in footwear and

footwear components.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 8170 rounded repair rules and limit values of the representation and judgment

3 Principle

Representative samples were extracted with methanol in a closed environment, the extract was filtered through a membrane filter and confirmed by gas chromatography-mass spectrometry, External standard method.

4 Reagent

4.1 methanol, chromatography pure.

4.2 formamide standard material, purity >= 99.0% (CAS.75-12-7).

4.3 formamide standard stock solution (100μg/mL) Accurately weigh 0.0100g formamide standard material (4.2) in 100mL volumetric flask , Dissolve with methanol (4.1) and dilute to volume.

4.4 formamide standard working solution were accurately Pipette 100μg/mL formamide standard stock solution (4.3) 0.00mL, 0.25mL, 2.00mL, 5.00mL, 10.00mL, 25.00mL in 50mL volumetric flask, diluted with methanol (4.1) to the mark, formulated at a concentration of 0μg/mL, 0.5μg/mL, 4μg/mL, 10μg/mL, 20μg/mL, 50μg/mL standard series of solutions.

5 Instruments and equipment

5.1 Gas Chromatography-Mass Spectrometer (GC-MS) with Electron Impact Ionization (EI).

5.2 Analysis of the balance, a sense of the amount of 0.1mg.

5.3 constant temperature water bath oscillator, temperature (60 ± 2) °C, oscillation frequency of about 150 times/min.

5.4 reaction bottle, with a screw cap, can be closed, the volume of about 22mL.

5.5 Pipettes or pipettes .1 mL, 2 mL and 10 mL.

5.6 organic filter, pore size of 0.45μm.

6 Analysis steps

6.1 Sampling and storage Samples taken should be representative, cut into any side no more than 3mm small pieces, sample sampling and transfer process should be as fast as possible