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

GB/T 46533-2025

**Textile floor coverings - Determination of total fluorine content -
Oxygen bomb combustion-ion chromatographic method**

地毯 总氟含量的测定 氧弹燃烧-离子色谱法

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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. 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 was proposed by the China National Light Industry Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Arts and Crafts (SAC/TC150). This document was drafted by: Shanghai Municipal Institute of Quality Supervision and Inspection Technology, Yangxin Ruixin Group Co., Ltd., and Binzhou Oriental Carpet Co., Ltd. Company, Dongsheng Carpet Group Co., Ltd., Qingdao Shenghan Chromatography Technology Co., Ltd., Metrohm China Ltd., Beijing China Light Industry Federation Certification Center Limited Liability Company. The main drafters of this document are: Zhao Hailang, Han Qi, Huang Tao, Han Yi, Fei Hongde, Tian Haifeng, Li You, and Zhang Xia. Determination of total fluoride content in carpets Oxygen bomb combustion-ion chromatography Warning. This document should be used by personnel with practical experience in formal laboratory work. This document does not address all potential safety issues. Users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations.

1 Scope

GB/T 46533-2025 is the Chinese national standard covering total fluorine in a carpet - burned in an oxygen bomb and measured by ion chromatography, which is the screening test for the PFAS stain repellents that regulators and buyers are now excluding. Total fluorine does not identify which PFAS is present, but a low result means none of them are. First edition. Issued on 31 October 2025, it has been in force since 31 October 2025.

This document describes a test method for determining the total fluorine content in carpets using oxygen bomb combustion-ion chromatography. This document applies to all types of carpet products.

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. This document.

GB/T 6682 Specifications and test methods for water used in analytical laboratories

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Total fluorine content The total content of organic and inorganic fluorine elements in the test material (calculated as fluorine).

Note. Total fluoride results are expressed as mass concentration.

4.Principles The sample is oxidized by combustion in the oxygen bomb combustion device, and the fluorine-containing compounds are converted into free fluorine and fluorides that can be absorbed by the solution. The absorbed solution was analyzed using ion chromatography, and quantification was performed using the external standard method.

5 Reagents

5.1 Water. Grade I water as specified in GB/T 6682.

5.2 Sodium carbonate. Superior grade.

5.3 Sodium bicarbonate. Superior grade.

5.4 Sodium fluoride. Superior grade.

5.5 Sodium carbonate and sodium bicarbonate mixed salt solution. Weigh

0.954 g of sodium carbonate (5.2) and

0.134 g of sodium bicarbonate (5.3) into a beaker, Dissolve and dilute to.2000 mL with water (5.1) to prepare a mixed salt solution of 0.0045 mol/L sodium carbonate and 0.0008 mol/L sodium bicarbonate.

5.6 Fluoride ion standard stock solution (1000 mg/L). Weigh

2.211 g of sodium fluoride (5.4) dried to constant weight at 100°C~105°C, and add water.

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