



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

中华人民共和国国家标准

GB/T 5454-1997
Replace GB/T 5454-1985

**Textiles—Burning behaviour—Oxygen index
method**

纺织品 燃烧性能试验 氧指数法

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Foreword

This Standard is not equivalent to ISO 4589: 1984 *Determination of flammability by oxygen index*, combine with characteristic of textile and revise for the GB 5454-85, main technical contents, test method and process is accordance with International Standard.

This Standard carried on main technical contents of previous edition and proceeds complement and change for name, clause & articles as well as technical contents, added "foreword", cancelled additional explanation and merged into foreword.

Title of this Standard changed as *Textiles—Burning behaviour—Oxygen index method*.

This standard carries on the main technical content of the last version, and makes supplementary and editorial alteration to the name of standard, arrangement and technical content of clauses, adds "forward", deletes additional explanation and incorporates its content into forward.

The name of the standard is changed into *Textile Combustibility Test Oxygen Index Method*.

Clause 1 Scope adds the conditions and ways in which the sample is tested provided by this standard, "including single and multiple components" is added to the determination scope.

Clause 2 "Quotation method" is added to this standard, three nouns and corresponding foreign words of four nouns are added to Clause 3, Clause 5 "health and safety of experimenters" is added.

In Clause 6, "instrument" is changed into "equipment and material", its content undergoes editorial alteration, and section "gas decometer" is added.

In Clause 7, "sample" is changed into "sample and thermoregulation", sampling number is changed into "at least take 15 samples in the direction of longitude and latitude for general textiles", the sampling test method of "when testing textiles made with melting fiber, sew on three pieces of glass fibers of 8-11 Nm....." is deleted. "The sample is balanced for over 24h" is changed into "humidify the sample for 8-24h according to its thickness, until moisture absorption is balanced".

"Determination of initial oxygen concentration" and "up-and-down method" is added to Clause 8, "determination of limited oxygen index" replaces 6.7 of the original standard.

In oxygen index calculation of Clause 9 of this standard, "determination table of K value coefficient", "verification of oxygen concentration interval" and "precision" are added.

This Standard was first issued on 1985, revised on 1995.

Annex A of this Standard is normative annex.

Annex B, C and D of this Standard is suggestive annex.

Since implementation date, this Standard will replace GB 5454-85.

This Standard is proposed by China Textile Association.

This Standard is under the jurisdiction of Standardization Research Institute of China Textile Association.

Chief draft unit of this Standard: Standardization Research Institute of China Textile Association.

Chief drafters of this Standard: Jin Chunxiu and Zhao Shuqing.

Textiles—Burning behaviour—Oxygen index method

1 Scope

This Standard specifies the test method to place the sample under the vertical test conditions, that is, in the oxygen and nitrogen mixed airflow to measure the minimum oxygen concentration (also called limit oxygen index) for the sample to maintain the burning.

This Standard applies to the measurement of the burning behavior of various textiles (including single –component or multicomponent) such as the woven fabric, knitted fabric, non-woven, coating fabric, laminated fabric, compound fabric, carpets (including the carpets that have withstood the flame retardant treatment and the untreated carpets) and others.

This Standard is only applicable to the measurement of the burning behavior of the textiles under the laboratory conditions, to control the product quality, rather than the basis for the evaluation of the burning risk in actual operation conditions, or as one of the factors used for analysis on one special material when it burns.

2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB 6529-86 Standard atmospheres for textiles conditioning and testing

3 Terms and Definitions

For the purpose of this Standard, the following definition applies.

3.1

Afterflame time

The duration when the materials continues to burn with flame after the fire (ignition) source is removed under the specified test conditions.

3.2

Afterglow time

The duration when the material continues to burn without flame after the fire (ignition) source is removed after the flame combustion is ended under the specified test conditions.

3.3

Damaged length

The maximum length at the specified direction on the damaged area of the material under the specified test conditions.

3.4

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