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

GB/T 2406.2-2009

**Plastics -- Determination of burning behaviour by oxygen index
-- Part 2: Ambient-temperature test
(English Translation)**

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Foreword

GB/T 2406 Plastics - Determination of burning behaviour by oxygen index consists of three parts.

- Part 1.Guidance;
- Part 2.Ambient-temperature test;
- Part 3.High-temperature test.

This Part is the 2nd Part of GB/T 2406.It identically adopts the International Standard ISO 4589-2.1996 Plastics - Determination of burning behaviour by oxygen index - Part 2.Ambient-temperature test (English version), as well as the Amendment 1 to ISO 4589-2.1996 issued by ISO on January 15, 2005.This Part is an identical translation version of ISO 4589-2.1996 and the Amendment

1 to ISO 4589-2.1996 issued by ISO on January 15, 2005.They are identical in

technical content. For easy use, this Part made the following editorial modifications to ISO 4589-2.1996.

- modified "this Part of ISO 4589" to "this Part of GB/T 2406" or "this Part";

- deleted the Foreword and Contents of ISO 4589-2.1996;
- added the Foreword and Table of Contents in GB/T 2406;
- directly used Chinese national standards to replace corresponding International references in ISO 4589-2.1996 which have been identically adopted as the Chinese national standards; other International references which are not identically adopted as Chinese national standards are directly cited in this Part;
- deleted serial numbers in NOTES of ISO 4589; used the notes by adding the serial number required by national standards;
- modified the contents of the ISO Amendment for clause 9 Precision as the informative Annex NA.

Annex A, Annex B of this Part are normative; Annex C, Annex D, Annex E, Annex NA are informative.

This Part was proposed by China Petroleum and Chemical Industry Association. This Part shall be under the jurisdiction of Sub-committee on General Methods and Products for Plastic Resins, National Technical Committee on Plastics of Standardization Administration of China (SAC/TC 15/SC 4).

Responsible drafting organization of this Part. National Synthetic Resin Quality Supervision and Inspection Center.

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Plastics - Determination of burning behaviour by
oxygen index - Part 2.Ambient-temperature test

1 Scope

This Part of GB/T 2406 specifies methods for determining the minimum concentration of oxygen, in admixture with nitrogen, that will support combustion of test specimens under specified test conditions. The results are defined as oxygen index values.

2 Normative references

The following documents contain the provisions which, through reference in this Part of GB/T 2406, constitute the provisions of this Part. For dated references, subsequent amendments (excluding corrections) or revisions do not apply to this Part. However, the parties who enter into agreement based on this Part are encouraged to investigate whether the latest versions of these documents are applicable.

3 Terms and definitions

For the purposes of this Part of GB/T 2406, the following definition applies.

The minimum concentration of oxygen, by volume percentage, in a mixture of oxygen and nitrogen introduced at $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ that will just support combustion of a material.

4 Principle

A test specimen is supported vertically in a mixture of oxygen and nitrogen flowing upwards through a transparent chimney.

5 Apparatus

It is suitable for supporting a specimen vertically in the centre of the chimney. For self-supporting materials, the specimen shall be held by a clamp which is

at least 15 mm away from the nearest point at which the specimen may burn before the extent-of-burning criterion is exceeded.

6 Calibration of equipment

For compliance with this method, calibrate the equipment periodically in accordance with the instructions given in annex A so that the maximum interval between recalibration and use complies with the periods stated in table 1.

7 Preparation of test specimens

Using, if applicable, procedures that comply with the appropriate material specification (see note 1) or methods (see note 2) for specimen preparation, mould or cut test specimens that satisfy the dimensions specified for the most appropriate specimen form given in table 2.

8 Procedure for determination of oxygen index

NOTE For comparison with a specified minimum value of the oxygen index, without determining the actual oxygen index of the material under test, a shortened procedure shall be used.

Select one of two alternative ignition procedures which are dependent upon the specimen form as follows.

9 Calculations and expression of results

The value and sign of k are dependent upon the pattern of the responses of specimens tested in accordance with 8.6, and may be determined from table 4 as follows.

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