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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 2406.3-2022

Plastics - Determination of burning behaviour by oxygen index - Part 3: Elevated-temperature test

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules for Standardization Documents"

drafting.

This document is part 3 of GB/T 2406 "Determination of Combustion Behavior of Plastics by Oxygen Index Method". GB/T 2406 has issued the following

Lower part.

--- Part 1.Guidelines;

--- Part 2.Room temperature test;

--- Part 3.High temperature test.

This document is equivalent to ISO 4589-3.2017 "Determination of Combustion Behavior of Plastics by Oxygen Index Method - Part 3.High Temperature Test".

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

GB/T 2406 "Determination of Combustion Behavior of Plastics by Oxygen Index Method" aims to determine the combustion behavior of plastic materials and is intended to consist of 4 parts.

--- Part 1.Guidelines. The purpose of this document is to specify general requirements for carrying out oxygen index tests.

--- Part 2.Room temperature test. The purpose is to determine the oxygen index of the material at room temperature.

--- Part 3.High temperature test. The purpose is to determine the temperature index and

flammable temperature of materials in high temperature environment.

--- Part 4.High gas flow rate test. The purpose is to determine the oxygen index of the material at room temperature and high gas flow rate.

The results obtained from this document are not intended to describe or evaluate the fire risk of a specific material or a specific shape under actual fire conditions.

It can be used as an element of fire risk assessment, which includes all factors related to the actual application scenario of the material.

Determination of Combustion Behavior of Plastics by Oxygen Index Method

Part 3.High temperature test

1 Scope

This document describes the temperature range of 25°C to 150°C (typically 40°C to 150°C) under specified test conditions.

Test method for the minimum oxygen concentration required to maintain combustion of small upright specimens in a mixed flow of oxygen and nitrogen. The result is defined as the test temperature

The temperature index of the test temperature is a typical temperature that the plastic material may be in under the actual overheating condition.

This document is applicable to strip or sheet materials whose sample thickness is less than 10.5mm at the test temperature and can stand upright and self-supporting, but not for

Type V specimens that require a support frame in Table 2 of ISO 4589-2.2017.

This document applies to solid materials, laminated materials or foam materials with an apparent density greater than 100kg/m3, as well as some

Foam material at 100kg/m3.This document also provides vertical support methods for flexible sheets or films.

This document also describes the determination of the flammability temperature (FT) of small upright specimens under specified test conditions when the volume fraction of oxygen is 20.9%.

The method (see Appendix A) is limited to tests below 400°C, and is not applicable to materials with an oxygen index less than 20.9%.

Note 1.This document may not apply to materials that show strong shrinkage after heating, such as highly oriented films.

Note 2.Pay attention to the description in ISO 3582 about evaluating the flame propagation characteristics of foam materials with a density less than 100kg/m3.

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text. Among them, dated references

For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

this document.

ISO 4589-1 Determination of combustion behavior of plastics by oxygen index method - Part 1.General principles (Plastics-Determinationofburn-

Note. GB/T 2406.1-2008 Determination of Combustion Behavior of Plastics by Oxygen Index Method Part 1.Guidelines (ISO 4589-1.1996, IDT)

ISO 4589-2.2017 Determination of combustion behavior of plastics by oxygen index method - Part 2.Room temperature test (Plastics-

Note. GB/T 2406.2-2009 Determination of combustion behavior of plastics by oxygen index method Part 2.Room temperature test (ISO 4589-2.1996, IDT)

ISO 13943.2008 Fire safety terminology (Firesafety-Vocabulary)

3 Terms and Definitions

The following terms and definitions apply to this document as defined in ISO 4589-1 and ISO 13943.2008.

3.1

The temperature at which the material supports combustion in air with an oxygen volume fraction of 20.9%.

3.2

temperature index temperature index; TI

Under the specified test conditions, the minimum volume fraction of oxygen in the mixture of oxygen and nitrogen at the test temperature supporting the combustion of the material.

Note. The typical test temperature range is 40°C~150°C.