



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

GB/T 40166-2021

**Paper and board - Accelerated ageing(exposure to nitrogen
dioxide)**

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Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard uses the redraft law to modify and adopt ISO 5630-6:2009

"Paper and board - Accelerated ageing - Part 6: Exposure to atmospheric pollution (nitrogen dioxide)".

This Standard has made the following structural adjustment:

- Adjust the position of "WARNING", to meet the requirements for drafting of national standards.

Compared with ISO 5630-6:2009, the main technical differences and their reasons for this Standard are as follows:

- As for the normative references, this Standard has made adjustments with technical differences, to adapt to the technical conditions of China. The adjustments are mainly reflected in Clause 2 "Normative references". The specific adjustments are as follows:

? Replace ISO 186 with GB/T 450, which modifies and adopts the international standard;

? Replace ISO 187 with GB/T 10739, which is equivalent to the international standard;

? Replace ISO 5626 with GB/T 457, which modifies and adopts the international standard;

? Delete ISO 5631-1; add reference to GB/T 21245, which is identical to the international standard.

- Delete "pollutant gas" in terms and definitions. This term is not involved in the main technical content of this Standard.

- Modify the description of nitrogen dioxide, to quantify the requirements for nitrogen dioxide purity (see 5.2).

This Standard has made the following editorial changes:

- Change the standard name.

- Delete the informative Annexes A and B. Annex A is mainly for the description and explanation of all accelerated ageing research. Annex B is mainly for the description of the copyright of the accuracy data. Both are Paper and board - Accelerated ageing (exposure to nitrogen dioxide)

WARNING - Nitrogen dioxide is a highly toxic gas at the concentrations specified in this test method. Follow the manufacturer's safety data sheets for the safety of personnel performing this test.

1 Scope

This Standard specifies a method for accelerating the ageing of printing and writing papers through exposure to nitrogen dioxide gas and assessing the effect on mechanical and optical properties for the purpose of predicting stability to long-term natural ageing that occurs due to exposure to polluted air.

This Standard is applicable to all printing and writing papers, including coated

papers and filled papers.

2 Normative references

GB/T 450 Paper and board - Sampling for testing and identification of machine and cross direction, wire side and felt side (GB/T 450-2008, ISO 186:2002, MOD)

GB/T 457 Paper and board - Determination of folding endurance (GB/T 457-2008, ISO 5626:1993, MOD)

GB/T 10739 Paper, board and pulps - Standard atmosphere for conditioning and testing (GB/T 10739-2002, eqv ISO 187:1990)

GB/T 21245 Paper and board - Determination of color (C/2-degree diffuse reflectance method) (GB/T 21245-2007, ISO 5631:2000, IDT)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

Polluted air

Mixture of dry air and a volume fraction of 0.0050 % +/- 0.0002 % of nitrogen

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