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

GB/T 41434-2022

Paper, board and pulps - Basic terms for optical properties

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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 of Standardization Documents" drafted.

The modification of this document adopts ISO /T R10688.2015 "Basic Terms and Formulas for Optical Properties of Paper, Paperboard and Pulp", the document type is from

The technical report of ISO is adjusted to the national standard of our country.

Compared with ISO /T R10688.2015, the following structural adjustments have been made in this document.

a) Chapter 2 "Normative References" is added, and the serial numbers of other chapters are deferred.

b) Added 3.5.1 to avoid overhanging segments. 3.5.2~3.5.5 correspond to 2.5.1~2.5.4 in ISO /T R10688.2015.

The technical differences between this document and ISO /T R10688.2015 and their reasons are as follows.

a) the way the scope is expressed in accordance with the terminology standard writing rules (see Chapter 1);

b) Changed the symbols of the terms ISO brightness and D65 brightness (see 3.1.1 and 3.1.2), which are consistent with the symbols in the current national standards of our country.

be consistent;

c) Change the notation R_{λ} to ??? The original ISO text editorial error;

d) CIE Illuminator D65 was added to the definitions in 3.12 and 3.15, the "(c)" in the terms

of 3.17, 3.18 and 3.19 was deleted, and

In the definition of 3.17, the CIE standard illuminator D65 is added, and $Y(C/2^\circ)$ is included in the note to conform to the actual use of our country.

usage;

e) The definitions of the terms "spectral optical efficiency", "metameric stimulus", "metameric index" and "dominant wavelength" were changed (see 3.20,

3.21, 3.22, 3.33), consistent with the terms and definitions in the relevant standards of my country's color system;

f) The symbol $Op(3.24)$ of the term opacity is added to facilitate its use in related formulas;

g) The expressions in 4.1, 4.6, 4.7 and 4.8 have been changed to be consistent with the calculation formulas in the relevant standards of my country's color system;

h) The expressions about the conditions of use of the formula in 4.2.3 and 4.2.4 have been deleted to conform to the actual use in my country;

i) Added the value range of Tw_{10} (see 4.9), which is consistent with the given calculation formula;

j) Replace "brightness" in formula (13) with the corresponding symbol to meet the writing rules of my country's national standards.

The following editorial changes have been made to this document.

--- Change the standard name to "Basic Terms for Optical Properties of Paper, Paperboard and Pulp".

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

1 Scope

This document defines the terminology and calculation formulas used when testing the optical properties of paper, board and pulp.

This document applies to all types of paper, board and pulp.

2 Normative references

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

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to

this document.

GB/T 2679.1 Determination of paper transparency Diffuse reflectance method (GB/T 2679.1-2020, ISO 22891.2013, MOD)

GB/T 3978 Standard Illuminator and Geometric Conditions

GB/T 3979 Measurement method of object color

GB/T 7922 Method for measuring the color of lighting sources

GB/T 10339 Determination of light scattering and light absorption coefficient of paper, board and pulp (Kubelka-Munk method) (GB/T 10339-2018, ISO 9416.2017, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Brightness

3.1.1

ISO brightness ISO brightness

R457

Blue light diffuse reflectance factor at UV class C.

Use a filter with a dominant wavelength of 457 nm and a half-wave width of 44 nm or a reflectance luminosity of the corresponding function as specified in ISO 2469

The internal reflection factor measured under the condition of light source whose UV content is adjusted to be consistent with CIE Illuminator C.

Note. The weight function factors given in Appendix A of GB/T 40277-2021 describe the function of the filter more completely.

[Source. GB/T 40277-2021, 3.3, with modifications]

3.1.2

D65 brightness D65 brightness

R457, D65

Blue light diffuse reflectance factor at UV class D65.

Use a filter with a dominant wavelength of 457 nm and a half-wave width of 44 nm or a reflectance luminosity of the corresponding function as specified in ISO 2469

The internal reflection factor measured under the condition of light source whose UV content is adjusted to be consistent with CIE standard illuminator D65.

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