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

**GB/T 2378-2025**

Replacing GB/T 2378-2012

**Acid dyes - Determination of shade and relative strength**

酸性染料 色光和强度的测定

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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 replaces GB/T 2378-2012 "Acid dyes - Determination of color and strength" and GB/T 33421-2016 "Liquid Acid dyes - Determination of color and intensity. This document is based on GB/T 2378-2012 and integrates the content of GB/T 33421-2016.

Compared with GB/T 2378-2012, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope of application of this document has been changed (see Chapter 1, Chapter 1 of the 2012 edition);
- b) Added a chapter on terms and definitions (see Chapter 3);
- c) Added the principle and test method of solution colorimetry (see 4.2 and 7.2);
- d) The dyebath formula for nylon dyeing has been changed (see 7.1.2.3, 6.2.3 of the 2012 edition).

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Petroleum and Chemical Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Dyes (SAC/TC134).

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The previous versions of this document and the documents it replaces are as follows.

- First issued as GB/T 2378-1980 in 1980, first revised in 2003, second revised in 2012;
- This is the third revision and incorporates the content of GB/T 33421-2016 "Liquid acid dyes - Determination of shade and intensity".

## 1 Scope

This document describes methods for the determination of the shade and intensity of acid dyes by staining and solution colorimetry.

This document applies to the determination of the color and intensity of acid dyes. The dyeing method is applicable to acid dyes used to dye textiles.

The color method is suitable for acid dyes with higher purity or used in daily chemicals.

## 2 Normative references

GB/T 2374-2017

GB/T 6687

## 3 Terms and Definitions

The terms and definitions defined in GB/T 6687 apply to this document.

### 4.1 Staining method

Use the acid dye sample and the standard sample of the same type to dye on appropriate fibers (wool, nylon) under the same conditions.

Take the color intensity of the standard sample as 100 points and the color as the standard, and make a visual comparison to evaluate the color and intensity of the sample.

Measure the color and then calculate the color and intensity of the sample.

### 4.2 Solution colorimetry

When the dye solution complies with the Lambert-Beer law, the acid dye sample and the

standard sample are diluted with water and measured with a spectrophotometer.

The intensity of the dye sample can be calculated by determining the absorbance value at the maximum absorption wavelength.

The color of the sample can be evaluated by comparing the color difference between the standard sample and the test sample.

## **5 Reagents and Materials**

Reagents and materials should comply with the relevant provisions of Chapter 3 of GB/T 2374-2017.

## **6 Instruments and Equipment**

Instruments and equipment should comply with the relevant provisions of Chapter 4 of GB/T 2374-2017.