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

GB/T 27594-2025

Replacing GB/T 27594-2011

**Disperse dyestuffs - Determination of relative strength -
Spectrophotometer method**

分散染料 相对强度的测定 分光光度法

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Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document supersedes GB/T 27594-2011 "Determination of Relative Intensity of Disperse Dyes - Spectrophotometric Method", and is consistent with GB/T 27594- Compared to.2011, aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) The scope of application of the standard has been changed (see Chapter 1, Chapter 1 of the.2011 edition);
- b) Added terms and definitions (see Chapter 3);
- c) Reagents and materials have been changed (see Chapter 6, Chapter 5 in the.2011 edition);
- d) Added solvent selection (see 7.1);
- e) The requirements for solids content calculation results have been changed (see 7.2.1.2, 6.1.2 of the.2011 version);
- f) Added dye standards (see 7.2.2.1);
- g) The preparation method of the original dye sample solution has been modified (see 7.2.2.3, 6.2.2 in the.2011 version);
- h) The requirements for calculating the relative strength of the original dry dye have been changed (see 7.2.4.1,.2011 version 6.4.1);
- i) The formula for calculating the relative strength of trendy items has been changed (see 7.2.4.2, 6.4.2 in the.2011 version);

1 Scope

GB/T 27594-2025 is the Chinese national standard covering how strong a batch of disperse dye is against the reference - the dissolution and dilution, the absorbance at the maximum, and the relative strength percentage, which is the number the dye is actually priced and dosed on. Issued on 5 October 2025, it has been in force since 1 May 2026, replacing GB/T 27594-2011.

This document describes a spectrophotometric method for determining the relative intensity of disperse dyes. This document applies to the determination of the relative intensity of disperse dyes that conform to the Lambert-Beer law.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2374-2017 General conditions for dyeing determination

GB/T 6687 Dye Terminology

GB/T 8170-2008 Rules for rounding off numerical values and the representation and determination of limiting values

3 Terms and Definitions

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

4. Principles After dissolving the disperse dye sample and standard in a solvent, the absorbance at the maximum absorption wavelength was measured using a spectrophotometer. The relative intensity of the disperse dye sample was calculated using Lambert-Beer's law.

5. Instruments and Equipment The instruments and equipment used should meet the following requirements.

- a) Spectrophotometer. Operating wavelengths range from 380nm to 700nm; Cuvette optical path is 10mm.
- b) Electric drying oven. controllable temperature $\pm 2^{\circ}\text{C}$;
- c) Analytical balance. minimum scale division not greater than 0.0001g;
- d) Volumetric flasks. 500mL, 100mL;

e) Single-mark pipettes. 1mL, 2mL.

6.Reagents and Materials Reagents and materials shall comply with the relevant provisions of Chapter 3 of GB/T 2374-2007.

a) Acidic solution of dimethylformamide (DMF). Add 1 mL of concentrated sulfuric acid to each liter of DMF and mix thoroughly.

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