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

GB/T 5542-2025

Replacing GB/T 5542-2016

**Dyestuffs - Determination of large particles - Filter method of
single layer filter cloth**

染料 大颗粒的测定 单层滤布过滤法

(English Translation)

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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 replaces GB/T 5542-2016 "Determination of Large Particles of Dyes - Single-Layer Filter Cloth Filtration Method" and is consistent with GB/T 5542-2016.

Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) A new chapter on "Terms and Definitions" has been added (see Chapter 3);
- b) A new chapter on "Reagents" has been added (see Chapter 5);
- c) The specifications for the suction flasks have been changed [see Chapter 6, b), Chapter 4, b) in the 2016 edition];
- d) The specifications for polyethylene film have been changed [see Chapter 6, c), and Chapter 4, d) in the 2016 edition];
- e) The requirements for agitators and ovens have been changed [see d) and i) of Chapter 6, and e) and i) of Chapter 4 in the 2016 edition];
- f) The precision of the balance was changed [see g in Chapter 6, h in Chapter 4 of the 2016 edition];
- g) Laboratory steam generators have been removed [see j) in Chapter 4 of the 2016 edition];
- h) An evaporating dish and a soldering iron or a plastic sealer were added [see h) and j) in Chapter 6];
- i) The specifications of the polyester-cotton fabric in the filter cloth were changed [see

Chapter 6, k), Chapter 4, c) in the 2016 edition];

j) The method for preparing the dye suspension has been modified (see 7.1.1, 7.2.1, and 5.1.1 and 5.2.1 in the 2016 version);

k) The method for filtering dye suspensions has been changed (see 7.1.2, 7.2.2, and 5.1.2 and 5.2.2 in the 2016 version);

l) The post-treatment method for the filter cloth has been changed (see 7.1.3, 5.1.3 in the 2016 version);

m) The configuration of the reducing solution has been changed (see 7.2.3.2.1, 5.2.3.2.1 in the 2016 version);

(n) The impregnation requirements in the post-treatment of vat dye filter cloth have been changed (see 7.2.3.2.2, 5.2.3.2.2 in the 2016 version);

o) The soap boiling procedure has been changed (see 7.2.3.5, 5.2.3.5 in the 2016 version).

This document is modified to adopt ISO 105-Z11.1998 "Textiles - Tests for color fastness - Z11 part. Evaluation of spots of colorant dispersions".

Compared with ISO 105-Z11.1998, this document has undergone many structural adjustments. A comparison of the structural numbering changes between the two documents is provided below.

See Appendix A for the table.

This document differs significantly from ISO 105-Z11.1998. The relevant clauses are indicated in vertical margins.

The straight lines (|) are marked. A summary of these technical differences and their reasons can be found in Appendix B.

The following editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Determination of Large Dye Particles by Single-Layer Filter Cloth Filtration Method";

---Note 7.1 has been deleted;

---Notes in paragraphs 4 and 15 of Chapter 9 have been deleted;

---The note for Chapter 11 has been deleted.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no 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).

1 Scope

This document describes a method for determining large particles in disperse and vat dyes-the single-layer filter cloth filtration method.

This document applies to the determination of large particles in disperse dyes and vat dyes.

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

3 Terms and Definitions

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

large particles

Large dye particles in dye powder or large dye polymers formed by the aggregation of dyes after they are made into a suspension.

Note: These particles can easily cause dark spots to appear on fabrics after dyeing.

4 Principles

Disperse or vat dyes are prepared into suspensions, then filtered through a single-layer filter cloth. The filtered filter cloth is then treated and dried according to prescribed methods.

The dried filter cloth was then compared and rated with the rating sample card.

5 Reagents

Reagents and test water shall comply with the provisions of 3.1 and 3.2 in GB/T 2374-2017.

- a) Sodium hydroxide;
- b) Sodium dithionite (sodium hydrosulfite);
- c) Sodium chloride;

- d) Sodium perborate;
- e) Glacial acetic acid;
- f) Sodium carbonate;
- g) Neutral soap flakes.