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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 47085-2026

Determination of phenol in dye products

染料产品中苯酚的测定

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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. 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 Dye Standardization (SAC/TC134). This document was drafted by: Zhejiang Jihua Group Co., Ltd., Shenyang Chemical Research Institute Testing Technology Co., Ltd., and Shenyang Chemical Research Institute Co., Ltd. Limited Liability Company, Xiamen Hanjunke Testing Technology Co., Ltd. The main drafters of this document are. Shang Lijin, Hu Yanbing, Li Jingyi, Yan Shaode, Chen Meifen, Wang Ming, Zhao Zhimin, and Tao Shuaijiang. Determination of phenol in dye products

1 Scope

GB/T 47085-2026 is the Chinese national standard covering phenol in dyes - a residue of synthesis restricted in textiles, measured in the dye itself so that the mill knows before it dyes rather than after the garment is tested. First edition, published with GB/T 47088-2026 on hexavalent chromium in the same products. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the China Petroleum and Chemical Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the determination of dye products using gas chromatography-mass spectrometry (GC/MS) and high performance liquid chromatography

(HPLC). Methods for determining phenol content. This document applies to the determination of phenol in dye products.

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 6682-2008 Specifications and test methods for water used in analytical laboratories

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

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4 Test Methods

4.1 General Provisions Unless otherwise specified, only reagents confirmed to be of analytical grade and Grade III water as specified in GB/T 6682-2008 shall be used. Interpretation of test results... The rounding comparison method shall be performed in accordance with section

4.3.3 of GB/T 8170-2008.

4.2 Gas Chromatography-Mass Spectrometry (Arbitration Method)

4.2.1 Method Principle In an ultrasonic bath, phenol in the sample was extracted with potassium carbonate solution, acetylated with acetic anhydride to produce phenyl acetate, and then extracted by liquid-liquid extraction. Phenyl acetate was extracted into n-hexane, and then analyzed and identified by GC/MS, with quantification by external standard method based on peak area.

4.2.2 Reagents or materials

4.2.2.1 Phenol standard, purity >= 99.0%.

4.2.2.2 Anhydrous potassium carbonate.

4.2.2.3 Acetic anhydride.

4.2.2.4 Triethylamine.

4.2.2.5 Anhydrous sodium sulfate. Dry at 650°C for 4 hours, then remove and place in a desiccator for later use.

4.2.2.6 Potassium carbonate solution.

13.8 g/L aqueous solution. Weigh

13.8 g of anhydrous potassium carbonate, dissolve it in water, and make up to 1000 mL.

4.2.2.7 n-Hexane, chromatographic grade.