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

GB/T 47088-2026

Determination of hexavalent chromium in dye products

染料产品中六价铬的测定

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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 Standardization of Dyes (SAC/TC134). This document was drafted by: Ningxia Baolong Technology Co., Ltd., Shenzhen Biao Se Dye Technology Co., Ltd., and Shenyang Shenhua Institute of Chemical Technology Testing Co., Ltd. Limited Liability Company, Shenyang Chemical Research Institute Co., Ltd., and Xiamen Hanjunke Testing Technology Co., Ltd. The main drafters of this document are. Ji Ping, Liang Peiji, Hu Yanbing, Wang Ming, Zhang Fan, Mao Jiale, Yang Lan, Lü Shuang, Zhao Zhimin, and Yu Jianing. Determination of hexavalent chromium in dye products
Warning

---Personnel using this document should have practical experience working in a formal laboratory. This document does not address all possible safety issues. Users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations.

1 Scope

GB/T 47088-2026 is the Chinese national standard covering hexavalent chromium in dyes - a carcinogen restricted in textiles and leather, which arrives with chromium-containing dye intermediates and mordants and has to be measured in the dye before it reaches the fabric. First edition. 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 specifies a high-performance liquid chromatography (HPLC) method for determining extractable hexavalent chromium in dye products. This document applies to the determination of extractable hexavalent chromium content in various categories of 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 listed below. 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. Method Principles Extractable hexavalent chromium in the dye sample was extracted using phosphate buffer, and the extract was purified using solid-phase extraction (C18 SPE column). Hexavalent oxygen in the extract was determined using a high-performance liquid chromatograph equipped with a UV-Vis (UV-VIS) or diode array (DAD) detector. Chromium was quantified using the external standard method based on peak area.

5 Reagents and Materials

5.1 General provisions. Unless otherwise specified, use only reagents that have been confirmed to be of analytical grade and Grade III water as specified in GB/T 6682-2008.

5.2 Phosphoric acid.

5.3 Phosphate buffer solution. Weigh

22.8 g of dipotassium hydrogen phosphate ($K_2HPO_4 \cdot 3H_2O$, relative molecular mass 228) and dissolve it in... Adjust the pH to $8.0 \pm$

0.1 in 1000 mL of water with phosphate, and degas in an ultrasonic generator. Prepare the phosphate buffer solution fresh before use, or... Store in the refrigerator at $0^{\circ}C \sim 4^{\circ}C$. Shelf life is 7 days. Before use, restore to room temperature and degas.

5.4 Hexavalent chromium standard solution. 1000 mg/L, commercially available certified standard substance.

5.5 Anhydrous ammonium sulfate.

5.6 Ammonia water.

5.7 Methanol, chromatographic grade.

5.8 Microporous filtration membrane (aqueous phase). pore size is 0.45 μm .