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

GB/T 47125-2026

**General rules for photoelectric colorimetric analysis in
continuous flow analysis**

连续流动分析光电比色法分析通则

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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 Ministry of Science and Technology of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Standardization of Instrument Analysis and Testing (SAC/TC481). This document was drafted by: Tianjin Zhongtong Technology Development Co., Ltd., Shanghai Tobacco Group Beijing Cigarette Factory Co., Ltd., and China National Institute of Metrology. Research Institute, Tsinghua University, National Tobacco Quality Supervision and Inspection Center, Yunnan Provincial Tobacco Agricultural Science Research Institute, Beijing Haiguang Instrument Co., Ltd. The main drafters of this document are. Ma Yanjun, Zhang Keping, Ma Li, Song Dewei, Zhou Zhaojuan, Xing Zhi, Zhang Wei, Wu Yuping, Xue Hui, Fan Bowen, and Du Guorong. He Shengbao, Kong Guanghui, Zhang Jie, Guo Biqiang, Xu Tongguang, Shi Sujuan, Huang Xiu, Liu Nan, Liang Jing, Shi Junli, Liu Deshui, Zhang Guanghai, Jiao Zhen. General Rules for Continuous Flow Analysis by Photoelectric Colorimetric Method

1 Scope

GB/T 47125-2026 is the Chinese national standard covering continuous flow analysis - samples and reagents flowing through a manifold separated by air bubbles, with the colour developed and read photometrically, which is how a laboratory runs hundreds of nutrient or

water analyses a day. First edition, in force since 1 June 2026, under the Ministry of Science and Technology. It was issued on 27 February 2026 and has been in force since 1 June 2026, as a first edition. 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 the general rules for quantitative analysis using photoelectric colorimetry in continuous flow analysis. This document applies to test solutions that, in a continuous flow manner, generate stable, non-precipitating colorimetric compounds or decolorizing compounds through chemical reactions. Photoelectric colorimetric quantitative analysis of substances.

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 Specifications and test methods for water used in analytical laboratories

GB/T 14666-2025 Analytical Chemistry Terminology

GB 18597 Standard for Pollution Control of Hazardous Waste Storage

GB/T 27411 Commonly Used Uncertainty Evaluation Methods and Expressions in Testing Laboratories

GB/T 27412 Detection of laboratory bias based on single measurement results of verified samples

GB/T 27417-2017 Guidelines for Conformity Assessment of Chemical Analysis Methods

GB/T 27476.5 Laboratory Safety - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 14666-2025, GB/T 27411, GB/T 27417-2017, and JJF1568, as well as the following terms and definitions, apply. In this document.

3.1 Segmentflow In a continuous flow through a pipe, the liquid is divided into adjacent, uniform segments by air bubbles.

3.2 Dialyzer A device with filtration properties such as a semi-permeable membrane, used to separate specific components of different particle sizes.

4. Principles of the Analytical Method Following a predetermined combination sequence and proportion, a multi-channel peristaltic pump compresses pump tubes of different diameters to deliver the reaction reagents, air, standard solutions, and... The test solution is injected into a closed, continuous flow carrier. Each solution is divided into continuous, uniform flow segments by air bubbles, within a set... In the chemical reaction module, stable colored or fading compounds without precipitate are generated, following the Lambert-Beer law. The maximum signal value of color development (or fading) at a relatively steady state, measured by a photoelectric colorimetric detector, is taken as the test result, and the linearity is calculated according to the standard curve.

5 Chemical Factors

GB/T 31190 Technical Specification for Collection of Laboratory Waste Chemicals

JJF1568 Calibration Specification for Spectrophotometric Flow Analyzer