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

GB/T 44009-2024

Green product assessment - Dyes

绿色产品评价 染料

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Foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting: Please note that some of the contents of this document may involve patents: The issuing organization of this document does not assume the 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: Shenyang Shenyang Institute of Chemical Technology Testing Technology Co., Ltd., China National Institute of Standardization, Zhejiang Longsheng Group Co., Ltd., Zhejiang Runtu Co., Ltd., Zhejiang Jihua Group Co., Ltd., Zhejiang Boao New Materials Co., Ltd., Shanghai Yayun New Materials Co., Ltd., Jinhua Shuanghong Chemical Co., Ltd., Jiangsu Demei Chemical Co., Ltd., Jiangsu Shenxin Dye Chemical Co., Ltd., Jiangsu Ya Bang Dyestuff Co., Ltd., Hubei Liyuan Technology Co., Ltd., Jiangsu Taifeng Chemical Co., Ltd., Jiangsu Longchang Chemical Co., Ltd., Shenyang Chemical Research Institute Co., Ltd., Zhejiang Xinhaitian Biotechnology Co., Ltd., Zhejiang Hailian New Materials Technology Co., Ltd., Wanlong Chemical Co., Ltd.: Ltd., Shandong Zhongkang Guochuang Advanced Printing and Dyeing Technology Research Institute Co., Ltd., Huzhou Standardization Research Institute, Shaoxing Quality and Technical Supervision Inspection Testing institute: The main drafters of this document are: Lü Shuang, Zhu Yi, Zhao Guangming, Ding Xingcheng, Sun Yanfeng, Xu Jianguo, Jiang Xiaofeng, Liu Zixuan, Xu Jiancheng, Wang Xiaojun, Wang Jiangang, Zhang Rui, Zhou Jiayi, Wang Dengbing, Luan Minhong, Zhang Jianyu, Tao Shuaijiang, Liang Weiyang, Lu Liang, Hu Haoli, Lv Yan, Gong Guoliang, Chen Meifen, Xu Liang, Li Yongge, Ji Shuliang, Shang Aiguo, Jiang Donglan, Wu Chunjiang, Wang Ming, Chen Ruibin, Mao Zhiping, Guan Jinxin, Wu Wei, Yu Qingjie, Chen Sujuan, Lin Haoxin, Zou Xinqiang, Zhang Xuchuan, Yang Zhenmei, Li Jingyi, Shao Zhao:

This document is compiled in accordance with GB/T 33761 "General Principles for Green Product Evaluation" and is based on the characteristics of dye products to establish a green product evaluation system for dyes: Evaluation methods and indicator systems: Guide dye

production enterprises to implement green production, improve product quality, and lead the consumption upgrade of green dye products: This document does not serve as an entry requirement for the industry: Green Product Evaluation Dyes

1 Scope

GB/T 44009-2024 is the Chinese green product assessment standard for dyes. Dye manufacture is one of the most polluting parts of the chemical industry, its effluent is coloured, saline and hard to treat, its intermediates include some of the most hazardous aromatic compounds in commerce, and China makes the majority of the world's dyestuff, so the environmental performance of Chinese dye production is a question that reaches every textile supply chain. The standard sets the basic requirements a product and its producer must satisfy before assessment and then the evaluation indicators grouped as resource attributes, energy attributes covering the synthesis and drying energy, environmental attributes covering the wastewater, the salt load, the solvent recovery and the emissions of the works, and quality and safety attributes covering the strength and fastness of the dye, the fixation rate that determines how much of it ends up in the effluent rather than on the fibre, and the restricted substances including the banned amines, heavy metals and formaldehyde. It takes effect on 1 November 2024.

This document specifies the product classification, evaluation requirements, and evaluation methods for dye green product evaluation: This document is applicable to the green product evaluation of dyes:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document:

GB/T 2391 Determination of fixation rate of reactive dyes

GB/T 2589 General rules for calculation of comprehensive energy consumption

GB/T 3920 Textiles - Tests for colour fastness - Colour fastness to rubbing

GB/T 3921 Textiles - Tests for colour fastness - Colour fastness to washing with soap

GB/T 3922 Textiles - Tests for colour fastness - Colour fastness to perspiration

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

GB/T 6686 Classification of dyes

GB/T 6687 Terminology of dyes

GB/T 8170-2008 Rules for rounding off values and expression and determination of limit values

GB/T 9337 Determination of color uptake of disperse dyes at high temperature

GB/T 18886 Textiles - Tests for colour fastness - Colour fastness to saliva

GB/T 19001 Quality Management System Requirements

GB 19601 Limits and determination of 23 harmful aromatic amines in dye products

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