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

GB/T 44367-2024

**Determination of restricted 2,4-diamino-pyrimidine-3-oxide in
cosmetics - High performance liquid chromatography**

化妆品中限用组分二氨基嘧啶氧化物的测定 高效液相色谱法

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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 is required. 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 China Light Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Flavors and Fragrances and Cosmetics (SAC/TC 257). This document was drafted by: Suzhou Shipu Testing Technology Co., Ltd., Sukoshipu Biotechnology (Suzhou) Co., Ltd., Suzhou Quality Inspection Institute of Testing Science, Suzhou Kernairui Testing Technology Co., Ltd., Jiangsu Qilikang Skin Pharmaceutical Co., Ltd., Guangzhou Quality Supervision and Testing Institute of Spices, Shanghai Institute of Spices, Jiangsu Product Quality Supervision and Inspection Institute, Perfect (Guangdong) Daily Necessities Co., Ltd., Jiangsu Provincial Food Inspection Institute, Jiangsu Provincial Food and Drug Supervision and Inspection Institute, Tsinghua University, Changzhou Food and Drug Fiber Quality

Supervision and Inspection Institute Center, Shenzhen Institute of Drug Inspection, Suzhou Drug Inspection and Testing Research Center, Soochow University, Changzhou University, Guangdong Youzhi Testing Technology Co., Ltd., Proya Cosmetics Co., Ltd., Meichulai (Hangzhou) Cosmetics Co., Ltd., Zhejiang Fangyuan Testing Group Co., Ltd. Co., Ltd., Shanghai Yongxi Information Technology Co., Ltd., and Shanghai Qiran Biotechnology Co., Ltd. The main drafters of this document are. He Shuang, Lu Jian, Zhu Dandan, Fang Fang, Li Jianxiang, Zhang Yan, Wu Ke, Dai Dan, Guo Yanhua, Jie Li, Kang Wei, Wang Yi, Zhang Yingyang, Ye Jiarong, Ye Zhuhong, Yang Bin, Liu Danyang, Xun Zhiqing, Song Shuwen, Wang Chenxia, Huang Hongxia, Li Shiwei, Sun Jingxia, Xiao Huizhen, Yang Ming, Sun Shurong, Yu Jing, Yuan Minjia, Lu Yinghong, Jiang Lei, Gao Long, Gu Pan, Liu Qunlin, Gao Hongying, Zhu Yirong. Diaminopyrimidine oxide, a restricted ingredient in cosmetics HPLC WARNING - Personnel using this document should have practical experience in formal laboratory work. This document does not purport to address all possible safety issues. The user is responsible for taking appropriate safety and health measures and ensuring that the conditions are in compliance with relevant national regulations.

1 Scope

GB/T 44367-2024 gives the high performance liquid chromatographic determination of diaminopyrimidine oxide in cosmetics. The compound is a restricted ingredient in the Chinese cosmetic safety rules, used in hair products for its claimed effect on hair growth, and restricted ingredients are exactly where enforcement testing concentrates, because the temptation to exceed the permitted level is commercial and the excess is invisible to the consumer. The standard sets the principle, the reagents and materials, the instruments and equipment, the sample preparation and test procedure - the reference chromatographic conditions, the construction of the standard curve, the measurement of the sample and the blank test - then the processing of the experimental data, the recovery and the precision, with an informative annex on the reference substance. It took effect on 23 August 2024.

This document describes the principle, reagents and materials, instrumental settings and methods of HPLC determination of diaminopyrimidine oxide in cosmetics. The contents include preparation, sample preparation and test steps, test data processing, recovery rate and precision, etc. This document is applicable to the determination of diaminopyrimidine oxide in hair cosmetics such as aqueous solutions, emulsions, creams, etc. The detection limit of the method in this document is

3.0 mg/kg and the quantification limit is

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. in this document.

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

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4 Principle

The sample was vortexed with 10% methanol, ultrasonically extracted, centrifuged, purified and filtered with n-hexane liquid-liquid extraction to obtain the target test solution. The target solution was injected into the HPLC and detected by diode array detector. The retention time and UV absorption spectrum were determined. Quantitative analysis by external standard method.

5 Reagents and Materials

Unless otherwise specified, only chromatographic grade reagents were used.

5.1 Water. GB/T 6682, Grade 1.

5.3 n-Hexane. 5.4 10% (volume fraction) methanol solution. Take 10 mL of methanol (5.2) and add 90 mL of water (5.1) and mix well.

5.5 Diaminopyrimidine oxide standard. purity not less than 98%, English name, CAS number, molecular formula, relative molecular mass The quantities and chemical structures are shown in Table A.1 in Appendix A.

5.6 Standard stock solution. Accurately weigh

0.01 g (accurate to 0.000 1

g) of the standard substance (5.5) into a 10 mL volumetric flask and (5.2) Dissolve and dilute to the mark to obtain a standard stock solution with a mass concentration of 1 000 µg/mL. Storage period. 2 °C ~ 8 °C, protected from light. Deposit, 6 months.