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

GB/T 47331-2026

**Determination of hydroxypyridinone in cosmetics - High
performance liquid chromatography**

化妆品中羟吡啶酮的测定 高效液相色谱法

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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 National Light Industry Council. This document is under the jurisdiction of the National Technical Committee on Standardization of Fragrance, Flavor and Cosmetic Products (SAC/TC257). This document was drafted by: Guangzhou Institute of Quality Inspection (Guangzhou Medical Device Testing Center, Guangzhou Fiber Quality Monitoring Center), Shanghai Xiang Materials Research Institute Co., Ltd., China National Institutes for Food and Drug Control, Perfect (Guangdong) Daily Necessities Co., Ltd., Shuiyang Group Co., Ltd. Guangdong Kangaroo Mommy Group Co., Ltd., Fujian Pien Tze Huang Cosmetics Co., Ltd., Liuzhou Quality Inspection and Testing Research Center, Guangzhou Li Bai Technology Group Co., Ltd., Jinan University, Guangzhou Jintong Biotechnology Co., Ltd., Shenzhen Weiqi Technology Co., Ltd., Shandong Huawu Tang Biotechnology Co., Ltd. The main drafters of this document are. Li Xinyu, Yang Bin, Wang Gangli, He Guoshan, Wang Yi, Wang Haiyan, Yu Xiaoyi, Liu Xiaoying, Dai Yuefeng, and Nie Mingxia. Huang Minhan, Yan Erping, Kong Lingchao, Xie Agui, Song Yinyin, Liu Zhong, Gong Xinling, Feng Minxian, Liu Zijian, Xia Zemin, Tan Jianhua, Xi Shaofeng Guo Shentao.

The substances tested in this document are prohibited ingredients as stipulated in my country's "Cosmetic Safety Technical Specifications (2015 Edition)". Prohibited ingredients refer to substances that are not permitted to be used as ingredients in cosmetics. The "Cosmetic Safety Technical Specifications (2015 Edition)" stipulates that if the technology... When it is unavoidable that prohibited substances may be introduced into cosmetics as impurities, those with national limits should comply with those limits; if no limits are specified, further investigation is required. Safety risk assessment to ensure that it will not cause harm to human health under normal, reasonable and foreseeable use conditions. Currently, my country has not set a limit for this substance. This document is only intended

to provide a detection method for determining this substance in cosmetics. Determination of hydroxypyridinone in cosmetics High performance liquid chromatography 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 47331-2026 is the Chinese national standard covering hydroxypyridinone in a cosmetic - a class used in whitening and anti-ageing products and restricted in China, which makes an official method necessary for enforcement. First edition, in force since 1 October 2026. It was issued on 31 March 2026 and takes effect on 1 October 2026, as a first edition. The document is under the responsibility of the China National Light Industry Council. 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 principle, reagents and materials, instruments and equipment, and sample preparation for the high-performance liquid chromatography (HPLC) determination of hydroxypyridinone in cosmetics. The test procedures, data processing, recovery rate, precision, and test report are included. This document applies to the determination of hydroxypyridinone in aqueous, cream, and lotion cosmetics. The limit of detection for this method is 8.0 µg/g, and the limit of quantitation is 20.0 µg/g.

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

3 Terms and Definitions

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

4.Principles The sample was extracted with acetonitrile and detected by high-performance liquid chromatography (HPLC) with a diode array detector. Determination was based on retention time and ultraviolet absorption spectroscopy. Sex, quantified using the external standard method.

5 Reagents and Materials

5.1 Water. Grade I water as specified in GB/T 6682.

5.2 Hydroxypyridone standard samples/substances. purity not less than 95%, English name, CAS number, molecular weight of the standard sample/substance. The formula, chemical structural formula and relative molecular mass are shown in Table A.1 of Appendix A.

5.3 Acetonitrile. chromatographic grade.

5.4 Dimethyl sulfate. analytical grade.

5.5 Phosphoric acid. analytical grade.

5.6 Triethylamine. analytical grade.

5.7 Sodium hydroxide solution ($c=0.3\text{mol/L}$). Accurately weigh 12.0g of sodium hydroxide, dissolve it in an appropriate amount of water, and then dilute it with water to 1L.

5.8 Hydroxypyridone Standard Stock Solution ($\rho=1000\mu\text{g/mL}$). Accurately weigh an appropriate amount (precipitated) of hydroxypyridone standard sample/standard substance (5.2). Add

0.01 mg of the solution to a 10 mL brown volumetric flask and dilute to the mark with acetonitrile (5.3). Mix well.