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

GB/T 46301-2025

**Determination of atranol and chloroatranol in cosmetics -
Liquid chromatography-tandem mass spectrometry**

化妆品中荅黑醛和氯化荅黑醛的测定 液相色谱-串联质谱法

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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: Suzhou Customs Comprehensive Technology Center, Suzhou Soochow University Institute of Health and Environmental Technology Co., Ltd., and Proya Cosmetics. Product Co., Ltd., Suzhou World Standard Testing Technology Co., Ltd., Suzhou World Spectrum Testing Technology Co., Ltd., Kashgar Customs Technology Center, Shanghai Qi Ran Biotechnology Co., Ltd. The main drafters of this document are. Xu Zhendong, Chen Jun, Sun Shurong, Wang Jieying, Zhai Wenjing, Chen Ni, Song Xingxing, Dai Dan, Zhou Jun, Zhang Qin, and Fan Jipeng. Gu Juanhong, Yang Tianyu, Jiang Luyan, Yuan Minjia, Li Qi, Bao Yaofei, Zhang Sufang.

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. A safety risk assessment is conducted to ensure that no harm to human health will occur under normal, reasonable, and foreseeable conditions of use. 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 mossinaldehyde and chlorinated mossinaldehyde in cosmetics Liquid chromatography-tandem mass spectrometry 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 46301-2025 is the Chinese national standard covering two potent allergens from oakmoss and treemoss extracts - the extraction from a cosmetic matrix, the chromatographic separation and the tandem mass detection, and the quantification at the parts-per-million level the restriction is set at. These two compounds are why oakmoss absolute is now restricted in perfumery. First edition, under the China National Light Industry Council. In force from 1 May 2026. Issued on 5 October 2025, it has been in force since 1 May 2026.

This document describes the principle, reagents, and materials for the liquid chromatography-tandem mass spectrometry determination of phytochrome and chlorinated phytochrome in cosmetics. The content includes instruments and equipment, sample preparation and test procedures, test data processing, recovery rate, precision and test report. This document applies to the determination of temocarboxaldehyde and chlorinated temocarboxaldehyde in perfumes and creams/lotions. This document does not apply to cleansing cosmetics. The limit of detection for the method described in this document is 5.0 µg/kg, and the limit of quantitation is 15 µg/kg.

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 subjected to vortexing in acetonitrile solution, ultrasonic extraction, centrifugation and filtration to obtain the target analyte solution. The target analyte solution was then injected into the liquid. Phase chromatography-tandem mass spectrometry was used for qualitative analysis based on retention time and relative ion abundance, and for quantitative analysis using the external standard method.

5.Reagents and Materials Unless otherwise specified, use only analytical grade reagents.

5.1 Water, GB/T 6682, Grade 1.

5.2 Acetonitrile. chromatographic grade.

5.3 Methanol. chromatographic grade.

5.4 Standard samples/representations of moss black aldehyde and chlorinated moss black aldehyde. Moss black aldehyde purity greater than 99.0% (mass fraction), chlorinated moss black aldehyde purity greater than 99.0%. At 98.0% (mass fraction), the chemical name, English name, CAS number, molecular formula, relative molecular mass, and chemical composition of the standard sample/reference material are as follows: The structural formula can be found in Table A.1 of Appendix A.

5.5 Standard stock solution (1000 mg/L). Accurately weigh

0.025 g of each of the standard samples/standard substances (5.4) of mossinaldehyde and chlorinated mossinaldehyde.