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Determination of amylocaine, butanilicaine and pramocaine in cosmetics - Liquid chromatography-tandem mass spectrometry

化妆品中阿米卡因、布坦卡因、普莫卡因的测定 液相色谱-串联质谱法

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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.

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/TC257).

This document was drafted by: Tianjin Customs Animal, Plant and Food Inspection Center.

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Introduction

The substances tested in this document are prohibited raw materials as stipulated in China's "Technical Specifications for Safety of Cosmetics (2015 Edition)".

Prohibited raw materials refer to substances that cannot be used as cosmetic raw materials. The "Cosmetic Safety Technical Specifications (2015 Edition)" stipulates. If the technical When it is unavoidable to introduce prohibited substances into cosmetics as impurities, the national limit should be followed; if no limit is set, Safety risk assessment to ensure that no harm to human health occurs under normal, reasonable and foreseeable conditions of use.

At present, China has not yet stipulated the limit values of these substances. The

formulation of this document only provides detection methods for the determination of these substances in cosmetics.

Amicaine, Butancaine, and Pramocaine in Cosmetics Determination of HPLC-MS/MS Warning---People who use this document should have practical experience in formal laboratory work. This document does not address all possible safety issues.

The user is responsible for taking appropriate safety and health measures and ensuring that the conditions are met in accordance with relevant national regulations.

1 Scope

This document describes the determination of three caine-like substances, amicaine, butancaine and pramoxine, in cosmetics by liquid chromatography-tandem mass spectrometry.

The content includes the principle of the method, reagents and materials, instruments and equipment, sample preparation and test steps, test data processing, recovery rate and precision, etc.

This document applies to amicaine, butancaine, pramoxine and 3 in aqueous, liquid oil, cream, emulsion and powder cosmetics.

Determination of caine-like substances.

The detection limit and quantification limit of the method in this document are. the detection limit of amicaine is 1μg/kg, and the quantification limit is 3μg/kg; the detection limit of butancaine is The detection limit of pramoxine was 0.3 μg/kg, and the limit of quantification was 1 μg/kg.

2 Normative references

GB/T 6682

3 Terms and definitions

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

4 Principle

The samples of water-based preparations, creams, lotions, and powders were vortexed with methanol (the samples of liquid oils were vortexed with tetrahydrofuran), and the methanol was used for determination.

The target solution was injected into a liquid chromatography-tandem mass spectrometer and the target solution was centrifuged and filtered.

Phase chromatography separation, mass spectrometry detection, retention time and relative ion abundance of mass spectrum for qualitative analysis, external standard method for quantitative analysis.

5 Reagents and Materials

Unless otherwise specified, only analytical grade reagents were used.

5.1 Water. GB/T 6682, Grade 1.

5.2 Methanol. chromatographic grade.

5.3 Acetonitrile. chromatographic grade.

5.4 Tetrahydrofuran. chromatographically pure.

5.5 Formic acid. chromatographic grade.

5.6 Standard substance/standard sample. purity not less than 96%. English name, CAS number, molecular weight of amicaine, butancaine, and pramoxine