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研究论文

离子色谱法同时测定化妆品中的铵和6种烷基胺

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Simultaneous determination of ammonium and six alkylamine chromatography

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摘要 参考文献 相关文章

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摘要 建立同时测定化妆品中铵和6种烷基胺的离子色谱(IC)分析方法。优化了色谱条件和样品前处理方法,样品经100 mmol/L乙酸乙腈溶液浸提,固相萃取(SPE)柱去除阴离子、中和氢离子后进样测定。考察了提取溶液的pH、有机溶剂和共存离子对测定结果的影的线性范围为0.3～15 mg/L,检出限为2.1～7.9 mg/kg,定量限为7～26 mg/kg。采用建立的分析方法测定了清洗、柔肤、祛斑、发、染发和育发类化妆品的加标回收率的范围在80.2%～109.2%之间,相对标准偏差(RSD)的范围为0.5%～3.1%。方法选择性抗干扰强,用于实际样品测定结果准确。

关键词： 离子色谱法 铵 烷基胺 化妆品

Abstract： A method for the simultaneous determination of ammonium and six alkylamines in cosmetic produc chromatography (IC) was developed. The sample pretreatment process and the separation resolution of chromatography were investigated. The samples were extracted by 100 mmol/L acetic acid-20%(v/v) acetonit solution at room temperature, and then solid phase extraction (SPE) column was used to eliminate the interfe The influences of pH value, organic solvent and coexisted ions were investigated. The separation was carried IonPac CS17 (250 mm×4 mm)analytical column and IonPac CG17 (50 mm×4 mm)guard column using 1.5~ methanesulfonic acid and 0.5%~5%(v/v) acetonitrile gradient elution at a flow rate of 1.0 mL/min at 24 ℃, co suppressed conductivity detector. Under the optimum conditions, a measurement could be completed less tha The linearity ranged from 0.3 to 15 mg/L, the detection limits and the quantification limits were in the ranges c mg/kg and 7~26 mg/kg, respectively. The method was successfully employed for the determination of ammoni methylamine, dimethylamine, trimethylamine, ethylamine, propylamine and butylamine in samples including cle body lotion, skin-bleaching, sun block, marcel, hair dye and pilatory cosmetics with the recoveries of 80.2%~1 the relative standard deviations (RSDs) of 0.5%~3.1%. The method offered high selectivity, sensitivity, and g satisfactory results for real sample analysis.

Keywords： ion chromatography (IC) ammonium alkylamine cosmetic products

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