

研究论文

固相萃取净化-正相高效液相色谱测定纺织品中残留的烷基酚和烷基酚聚氧乙烯醚

吕春华*, 陈笑梅, 刘海山

浙江出入境检验检疫局, 浙江 杭州 310012

收稿日期 2009-2-5 修回日期 2009-4-3 网络版发布日期 2009-7-28 接受日期 2009-5-4

摘要 建立了测定纺织品中烷基酚(AP)和烷基酚聚氧乙烯醚(APnEO) (n2~16)的正相高效液相色谱法。以甲醇为提取溶剂,用索氏抽提法提取纺织品中的AP和APnEO,用正相高效液相色谱法测定,并对提取溶剂、提取方式和净化条件等前处理条件进行优化。该方法的检出限为1.0 mg/kg,回收率为90.4%~104.1%,相对标准偏差为0.64%~4.21%。采用该方法对多种基质纺织品进行检测,可满足残留检测要求。

关键词 [正相高效液相色谱法](#) [烷基酚](#) [烷基酚聚氧乙烯醚](#) [纺织品](#)

Determination of alkylphenols and alkylphenol polyethoxylates in textiles by normal-phase high performance liquid chromatography and solid-phase extraction

Lv Chunhua*, CHEN Xiaomei, LIU Haishan

Zhejiang Entry-Exit Inspection and Quarantine Bureau, Hangzhou 310012, China

Abstract

A method for the simultaneous determination of alkylphenols (AP) and alkylphenol polyethoxylates (APnEO)(n2~16) in textiles was developed by normal-phase high performance liquid chromatography (NP-HPLC). The residues of AP and APnEO in the samples were extracted with methanol by Soxhlet extraction. The pretreatment conditions such as extraction solvents, extraction methods and clean-up methods were optimized. The sample was purified by an HLB solid-phase extraction column and separated on an amino column (250 mm×4.6 mm, 5 μm) with hexane-isopropanol (90:10, v/v) and isopropanol-water (90:10, v/v) as mobile phases at a flow rate of 1.0 mL/min and determined by a fluorescence detector. AP and each APnEO oligomer were separated successfully within a reasonable time with gradient elution, which are difficult to be separated by using conventional reversed-phase high performance liquid chromatography (RP-HPLC). The detection limit was 1.0 mg/kg for each analyte. The recoveries ranged from 90.4% to 104.1% with the relative standard deviations (RSDs) ranged from 0.64% to 4.21%. This method is suitable for the determination of alkylphenols and alkylphenol polyethoxylates in textiles.

Key words [normal-phase high performance liquid chromatography \(NP-HPLC\)](#) [alkylphenols](#) [alkylphenol polyethoxylates](#) [textiles](#)

DOI:

通讯作者 吕春华 lvch@ziq.gov.cn

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(492KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)

相关信息

- ▶ [本刊中 包含 “正相高效液相色谱法” 的相关文章](#)
- ▶ [本文作者相关文章](#)

- [吕春华](#)
- [陈笑梅](#)
- [刘海山](#)