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研究论文

全二维气相色谱用于轻质石油馏分中芳烃含量的测定

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摘要 建立了采用全二维气相色谱(GC×GC)技术一次进样完成轻质石油馏分中非芳烃、一环芳烃和二环芳烃的分离、定性和定量。通过对柱系统 的选择和色谱条件的优化,实现了一次全二维气相色谱分析即完成轻质石油馏分的族组成分离以及目标化合物的分离。方法的加标回收率为89.5 %～106 1%;样品中各组分含量重复测定的相对标准偏差均不大于5 8%,能够满足样品测定的精密度和准确性要求，且完成1次分析最多只需要3 0 min。

关键词 全二维气相色谱；芳烃；萘系物；喷气燃料油；溶剂油

分类号

Determination of Aromatics in Light Petroleum Products by Comprehensive Two-Dimensional Gas Chromatography

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Abstract

In recent years, comprehensive two-dimensional gas chromatography （GC×GC） have been used widely, and the applications of this technique to many fields have already been reported. In the standard method of oil analysis, the concentrations of aromatics and naphthalene hydrocarbons in light petroleum products must be detected by more than two methods. Mono-aromatics, di-aromatics etc. in light petroleum products were detected only by comprehensive two-dimensional gas chromatography. After the proper selection of column system and optimization of chromatographic conditions, the method can achieve the group separations of paraffins, olefins, naphthenes, aromatics with 1 to 2 rings and some target components in light petroleum products with good reproducibility and good precision. The recoveries of standard compounds were 89.5%-106.1%, and the relative standard deviations of repeatedly detecting the components were all lower than 5.8%. It took only 30 min to finish a determination.

Key words

comprehensive two-dimensional gas chromatography （GC×GC） aromatics naphthalene hydrocarbons jet fuel solvent oil

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