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便携式气相色谱-质谱仪测定空气中挥发性有机污染物的准确性

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Veracity on determination of volatile organic compounds in th chromatography-mass spectrometry

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摘要 便携式气相色谱-质谱仪(便携式GC-MS)能同时对多组分复杂有机物进行定性定量分析,在环境监测尤其是事故现场应急监测中要的作用。本文比较了便携式GC-MS与EPA TO-14A方法分析测定环境空气中低浓度挥发性有机物(VOCs)的性能,并探讨了利用定环)模式测定高浓度VOCs的准确度。结果表明,采用内标标准曲线定量,HAPSITE便携式GC-MS测定空气中VOCs的检出限与EPA T相当,准确度和精密度略低,但均符合环境监测分析的要求。利用loop环可对大部分10~6级的高浓度VOCs样品进行较为准确的测定境污染事故中可以得到基本准确的结果。

关键词： 便携式气相色谱-质谱仪 loop环 定量方法 准确度 应急监测 挥发性有机物

Abstract： Portable gas chromatography-mass spectrometry (GC-MS) can simultaneously carry out qualitative quantitative analysis of multi-component complex organic compounds. Because of its characteristics, portable plays an increasingly important role in environmental monitoring, especially in the spot emergent monitoring. study, performance of portable GC-MS on determination of low concentration of volatile organic compounds (V ambient air was compared with EPA TO-14A method, and the accuracy of high concentrations of VOCs determ loop ring model was examined. Results indicated that detection limits of VOCs in air HAPSITE portable GC-MS equivalent to that of EPA TO-14A method, while accuracy and precision is slightly lower, but all accord with the requirements of environmental monitoring and analysis. The loop ring can be used in the emergent pollution a for it can accurately analyze samples in high concentration of VOCs in the grade of 10-6.

Keywords： portable gas chromatography-mass spectrometry (GC-MS) loop ring quantitative methods ac emergency monitoring volatile organic compounds

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