离子色谱氢化物发生原子荧光法测定地下水中砷形态

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摘 要：采用离子色谱氢化物发生原子荧光联用法（IC HGAFS）测定四种砷形态，并优化了各种实验参数。整套分析系统的最小检出量为As(III) 0.020ng，MMA 0.045ng，DMA 0.043ng，As(V) 0.166ng，相对标准偏差（n=6）小于3%，在10～200 ng/mL的浓度范围内线性关系均大于0.999。用此方法测量地下水的4种砷形态加和的总量与用HG AFS测得的总砷值相一致，表明本方法切实可行。本系统结构简单、稳定性好，非常适合用于检测砷形态。

关键词：

Determination of arsenic species in groundwater by Ion chromatography-hydridegeneration-atomic...

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Abstract：The determination of arsenite (As(III)), arsenate (As(V)), monomethylarsonic (MMA) and dimethylarsinic acid (DMA) was performed with ion chromatography-hydride generation-atomic fluorescence spectrometry (IC-HG-AFS). Various experimental parameters were optimized, such as parameters of chromatography, hydride generation and atomic fluorescence spectrometry. With a sample loading volume of 20 microliter, the measurable minimum for As (III), DMA, MMA and As (V) were 0.02ng, 0.045ng, 0.043ng, 0.166ng, respectively, and relative standard deviations were less than 3%(n=6). Correlation coefficients were greater than 0.999 in the range of 10～200ng/mL. The present procedure was applied for the speciation of arsenic in underground water, and the sum of the four arsenic species by IC-HG-AFS was in good agreement with the total value by HG-AFS. This simple system is very suitable for the detection of arsenic species.

Key words：