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Determination of Trace Gold in Geochemical Exploration Samples by Z-2000 Polarized Zeeman Graphite Furnace Atomic Absorption Spectrophotometry

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中文关键词：[偏振塞曼](#) [石墨炉原子吸收分光光度法](#) [金](#) [地球化学样品](#) [聚氨酯泡沫塑料](#)

英文关键词：[polarized Zeeman](#) [graphite furnace atomic absorption spectrophotometry](#) [gold](#) [geochemical exploration sample](#) [polyurethane foam plastic](#)

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中文摘要:

用 $\psi=50\%$ 的王水分解样品,聚氨酯泡沫塑料吸附富集金,10 g/L硫脲为解脱剂,偏振塞曼石墨炉原子吸收分光光度计测定痕量金.对干燥、灰化、原子化、净化温度和时间,以及载气流量和灯电流强度进行了讨论;对影响金吸附效果的泡塑载体和王水浓度等因素进行了研究.通过实验得到了Z-2000偏振塞曼原子吸收分光光度计最佳石墨炉分析测试条件.方法检出限为0.3 ng/g,回收率为95.0%~101.0%,精密度(RSD,n=12)低于8.0%,经国家一级标准物质(GBW 07243~GBW 07245)分析验证,结果与标准值相符.

英文摘要:

A method for the determination of trace gold in geochemical exploration samples by Z2000 polarized Zeeman graphite furnace atomic absorption spectrophotometer (GFAAS) was reported in this paper. The sample was dissolved with 50% aqua regia and the gold in the sample solution was then concentrated with polyurethane foam plastic and using 10 g/L thiourea solution as release agent. The factors influencing Au adsorption, such as physical properties of polyurethane foam plastic and concentration of aqua regia were studied. And GFAAS determination parameters including temperature and time in ashing, atomization and cleaning steps, carrier gas flow rate, lamp current intensity were also optimized. The detection limit of the method is 0.3 ng/g for gold and the recovery is 95.0% ~ 101.0% with precision of less than 8.0%RSD (n = 12). The method has been applied to the determination of trace Au in National Standard Reference Materials (GBW 07243~GBW 07245) and the results were in agreement with certified values.

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