

研究论文

基于2,3-丁二酮双缩氨基硫脲为中性载体的新型银离子选择性电极的研究

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摘要 研究了基于2,3-丁二酮双缩氨基硫脲为中性载体的聚氯乙烯(PVC)膜电极, 该电极对银离子(Ag<sup>+</sup>)

具有优良的电位响应性能. 在pH=3.0的NaOH-HNO<sub>3</sub>体系中, 该电极对Ag<sup>+</sup>电极电位呈现近能斯特响应,

线性响应范围为3.0×10<sup>-6</sup>~1.0×10<sup>-2</sup> mol/L, 斜率为52.6 mV/decade (20 °C), 检测下限为1.0×10<sup>-6</sup> mol/L.

相对于常见的阳离子, 该电极对Ag<sup>+</sup>表现出良好的选择性. 采用交流阻抗技术研究了电极响应机理,

并将电极初步应用于回收率实验, 结果令人满意.

关键词 [2,3-丁二酮双缩氨基硫脲](#) [离子选择性电极](#) [中性载体](#)

分类号

### Study of a New Selective Silver Electrode Based on 2,3-Butanedione-thiosemicarbazid as a Neutral Carrier

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**Abstract** A polyvinyl chloride (PVC) electrode based on 2,3-butanedione-thiosemicarbazid had been explored as a membrane carrier with good selectivity toward silver ion. The line range of the electrode which displays linear response with a near Nernstian is 3.0×10<sup>-6</sup>~1.0×10<sup>-2</sup> mol/L for silver ions and the slope is 52.6 mV/decade with a detection limit 1.0×10<sup>-6</sup> mol/L in pH 3.0 at 20 °C. The electrode exhibited good selectivity toward silver ion with respect to the familiar cations. The response mechanism was discussed in view of the AC impedance technique. The electrode can be applied to the recovery of determination with satisfactory results.

**Key words** [2,3-butanedione-thiosemicarbazide](#) [ion-selective electrode](#) [neutral carrier](#)

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