

化学

## N-甲基甲羟肟酸的合成及其与Np(IV)、Pu(IV)配合物稳定常数的测定

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**摘要** 以甲酸乙酯和N-甲基盐酸羟胺为主要原料, 在乙醇-水体系中合成N-甲基甲羟肟酸(NMFHA), 并通过元素分析、红外光谱、质谱分析和核磁共振波谱等方法对其结构进行表征。TTA萃取法测定结果表明, 在1.0 mol/L HNO<sub>3</sub>体系中, Np(IV)、Pu(IV)与NMFHA形成稳定的1:2的配合物, 其累积稳定常数分别为:  $\beta_1(\text{Np(IV)})=8.83 \times 10^9$ ,  $\beta_2(\text{Np(IV)})=1.01 \times 10^{19}$ ;  $\beta_1(\text{Pu(IV)})=7.78 \times 10^{10}$ ,  $\beta_2(\text{Pu(IV)})=5.80 \times 10^{19}$ 。

**关键词** [N-甲基甲羟肟酸](#) [合成](#); [Np\(IV\)](#) [Pu\(IV\)](#) [配合](#) [稳定常数](#)

分类号

## Synthesis of N-Methylformohydroxamic Acid and Determination of Stability Constants of Its Complexes With Pu(IV) and Np(IV)

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**Abstract** The title compound N-methylformohydroxamic acid (NMFHA) was synthesized by the reaction of N-methyl hydroxylamine hydrochloride with ethyl formate in alcohol medium. It was also characterized by element analysis, IR spectrum, mass spectrum and NMR spectrum. In 1.0 mol/L HNO<sub>3</sub> solution, stable 1:2 complexes of NMFHA complexes with Np(IV) or Pu(IV) were determined by TTA extraction method, and the stability constants are  $\beta_1(\text{Np(IV)})=8.83 \times 10^9$ ,  $\beta_2(\text{Np(IV)})=1.01 \times 10^{19}$ , and  $\beta_1(\text{Pu(IV)})=7.78 \times 10^{10}$ ,  $\beta_2(\text{Pu(IV)})=5.80 \times 10^{19}$ , respectively.

**Key words** [N-methylformohydroxamic acid](#) [synthesis](#) [Np\(IV\)](#) [Pu\(IV\)](#) [complex](#) [stability constant](#)

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