

研究论文

U(IV)配合物 $\text{UNa}_2(\text{pdc})_3 \cdot 6\text{H}_2\text{O}$ 的合成、结构及磁性研究

姜雨生, 毕明辉, 李国栋, 陈接胜

吉林大学化学学院, 无机合成与制备化学国家重点实验室, 长春 130012

收稿日期 2006-4-10 修回日期 网络版发布日期 2006-11-2 接受日期

摘要 合成了一种含有+4价铀的配合物 $\text{UNa}_2(\text{pdc})_3 \cdot 6\text{H}_2\text{O}$ (H_2pdc =吡啶-2,6-二羧酸), 并详细研究了其晶体结构和磁学性质. 晶体属于单斜晶系, $P2_1/n$ 空间群, 晶胞参数 $a=1.0205(2)$ nm, $b=2.2221(4)$ nm, $c=1.2537(3)$ nm, $\beta=94.98(3)^\circ$, $V=2.8323(10)$ nm³, $Z=4$. 化合物的中心铀原子为九配位, π - π 相互作用和氢键使得该化合物形成了三维立体结构.

关键词 [配合物](#) [铀系元素](#) [晶体结构](#) [磁性](#) [铀](#)

分类号 [O614](#)

DOI:

Synthesis, Structure and Magnetic Property of a Novel U(IV) Coordination Compound: $\text{UNa}_2(\text{pdc})_3 \cdot 6\text{H}_2\text{O}$

JIANG Yu-Sheng, BI Ming-Hui, LI Guo-Dong, CHEN Jie-Sheng

State Key Laboratory of Inorganic Synthesis and Preparative Chemistry, College of Chemistry, Jilin University, Changchun 130012, China

Received 2006-4-10 Revised Online 2006-11-2 Accepted

Abstract Uranium is the most extensively studied element in actinide chemistry. In the past few years, many uranyl coordination compounds had been synthesized, whereas the report on the U(IV) coordination compounds is much less. Here we reported the synthesis, crystal structure and magnetic property of a novel U(IV) coordination compound $\text{UNa}_2(\text{pdc})_3 \cdot 6\text{H}_2\text{O}$ (H_2pdc =pyridine-2,6-dicarboxylic acid). The title compound crystallized in the monoclinic space group $P2_1/n$, with unit cell parameters $a=1.0205(2)$ nm, $b=2.2221(4)$ nm, $c=1.2537(3)$ nm, $\beta=94.98(3)^\circ$, $V=2.8323(10)$ nm³, $Z=4$. The centered uranium atom is bonded to three pdc ligands *via* three nitrogen atoms and six oxygen atoms in a tricapped trigonal prismatic coordination. The temperature dependence of magnetic susceptibility reciprocal curve shows that the title compound has a paramagnetic behavior which obey to Curie-Weiss equation above 50 K ($C=1.01$ cm³·K·mol⁻¹, $\theta=-63.21$ K).

Key words [Coordination compound](#); [Actinide element](#); [Cryst al structure](#); [Magnetic property](#); [Uranium](#)

通讯作者:

陈接胜 chemcj@mail.jlu.edu.cn

作者个人主页: 姜雨生; 毕明辉; 李国栋; 陈接胜

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF](#) (370KB)

▶ [\[HTML全文\]](#) (0KB)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [引用本文](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“配合物”的 相关文章](#)

▶ 本文作者相关文章

· [姜雨生](#)

· [毕明辉](#)

· [李国栋](#)

· [陈接胜](#)