

苯并18-冠-6与M₂[Pt(SCN)₆](M=Na,K)配合物的合成、结构

李大成, 窦建民, 丁科英, 王大奇, 牛梅菊, 刘颖

聊城大学化学化工学院, 聊城(252000)

收稿日期 修回日期 网络版发布日期 接受日期

摘要 合成了苯并18-冠-6(B18C6)与M₂[Pt(SCN)₆](M=Na,K)的配合物: {[Na(B18C6)]₆[Pt(SCN)₆]}[Pt(SCN)₆](SCN)₂(1), [K(B18C6)]₂[Pt(SCN)₆]·4H₂O(2). 通过元素分析、红外光谱、单晶X射线衍射进行了表征. 1 为单斜晶系、空间群R3^h, a=b=1.9933(3)nm, c=2.9760(6)nm, α=β=90°, γ=120°, V=10.240(3)nm³, Z=3, D_{calcd}=1.564g/cm³, F(000)=4908, R₁=0.0535, wR₂=0.1030. 2 为三斜晶系、空间群 P1^h, a=1.1692(3)nm, b=1.1853(4)nm, c=1.2381(5)nm, α=61.419(5)°, β=80.757(8)°, γ=89.003(5)°, V=1.4836(9)nm³, Z=1, D_{calcd}=1.476g/cm³, F(000)=666, R₁=0.0696, wR₂=0.1346. 1 由 {[Na(B18C6)]₆[Pt(SCN)₆]}⁴⁺ 配阳离子、[Pt(SCN)₆]²⁻ 配阴离子和 SCN⁻ 阴离子组成. 相邻 {[Na(B18C6)]₆[Pt(SCN)₆]}⁴⁺ 通过 Na-O 键 形成三维网状结构. [Pt(SCN)₆]²⁻ 和 SCN⁻ 仅起平衡电荷的作用. 2 由两个 [K(B18C6)]⁺ 配阳离子和一个 [Pt(SCN)₆]²⁻ 配阴离子组成. 相邻 [K(B18C6)]₂[Pt(SCN)₆] 离子通过对 K-O 键 形成一维链状结构.

关键词 [固态配合物](#) [苯并](#) [合成](#) [结构](#) [钠](#) [钾](#) [铂](#) [碱金属](#) [X-射线衍射分析](#) [红外光谱学](#) [元素分析](#)

分类号 [0614](#)

Synthesis and Crystal Structure of B18C6 Complexes with M₂[Pt(SCN)₆] (m=Na, K)

Li DaCheng, Dou JianMin, Ding KeYing, Wang DaQi, Niu MeiJu, Liu Ying

Department of Chemistry, Liaocheng University, Liaocheng(252000); Department of Chemistry, Liaocheng University (252000)

Abstract Novel benzo-18-crown-6 (B18C6)₆ [Pt(SCN)₆](SCN)₂ (1) and [K(B18C6)]₂[Pt(SCN)₆]·H₂O (2) were synthesized and characterized by elemental analysis, IR spectra and X-ray diffraction analysis. 1 belongs to rhombohedral, space group R3 with cell dimensions: a=b=1.9933(3)nm, c=2.9760(6)nm, α=β=90°, γ=120°, v_{calcd}=1.476g/cm³, F(000)=666, R₁=0.0696, wR₂=0.1346. 1 is composed of one {[Na(B18C6)]₆[Pt(SCN)₆]}⁴⁺ complex cations show a three-dimensional network structure bridged by Na-O interactions between the adjacent [Na(B18C6)]₆ units. The function of [Pt(SCN)₆]²⁻ complex anion and two SCN⁻ anions. {[Na(B18C6)]₆[Pt(SCN)₆]}⁴⁺ complex cations show a three-dimensional network structure bridged by Na-O interactions between the adjacent [Na(B18C6)]₆ units. The function of [Pt(SCN)₆]²⁻ complex anion and two SCN⁻ anions are balancing the charge in the crystal. 2 is made up of two [K(B18C6)]⁺ complex cations and one [Pt(SCN)₆]²⁻ complex anion. They form one-dimensional chain structure bridged by K-O interactions between the adjacent [K(B18C6)]⁺ units.

Key words [SOLID COMPLEX](#) [BENZO-](#) [SYNTHESIS](#) [STRUCTURE](#) [SODIUM](#) [POTASSIUM](#) [PLATINUM](#) [ALKALI METAL](#) [X-RAY DIFFRACTION ANALYSIS](#) [INFRARED SPECTROSCOPY](#) [ELEMENTAL ANALYSIS](#)

DOI:

通讯作者

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(0KB\)](#)

▶ [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](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“固态配合物” 的相关文章](#)

▶ [本文作者相关文章](#)

- [李大成](#)
- [窦建民](#)
- [丁科英](#)
- [王大奇](#)
- [牛梅菊](#)
- [刘颖](#)