

Hexametallic manganese clusters with bulky derivatised salicylaldoximes.

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Rok wydania

2011

Czasopismo

Dalton Transactions

Numer woluminu

40

Strony

1693-1699

DOI

10.1039/c0dt01273d

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The reaction of $\text{Mn}(\text{ClO}_4)_2 \cdot 6\text{H}_2\text{O}$ with Ph-saoH₂ (Ph-saoH₂ = 2-hydroxybenzophenone oxime) in MeCN in the presence of sodium propionate forms the complex $[\text{Mn}^{\text{III}}_6\text{O}_2(\text{Ph-sao})_6(\text{prop})_2(\text{MeCN})_2] \cdot 5.27\text{MeCN}$ (**1**·5.27MeCN) (prop = propionate). Repeating the same reaction in EtOH produces the complex $[\text{Mn}^{\text{III}}_6\text{O}_2(\text{Ph-sao})_6(\text{prop})_2(\text{EtOH})_4]$ (**2**). Complexes **1** and **2** may be considered as structural isomers, since they display the same metallic core but different coordination modes of the propionate ligands; bridging in **1** and terminal in **2**. Performing similar reactions and switching from sodium propionate to sodium adamantane-carboxylate ($\text{NaO}_2\text{C-ada}$) and sodium pivalate (Napiv) in the presence of NEt_4OH yields the complexes $[\text{Mn}^{\text{III}}_6\text{O}_2(\text{Ph-sao})_6(\text{O}_2\text{C-ada})_2(\text{MeOH})_4]$ (**3**) and $[\text{Mn}^{\text{III}}_6\text{O}_2(\text{Ph-sao})_6(\text{piv})_2(\text{EtOH})_4] \cdot 0.5\text{Et}_2\text{O}$ (**4**·0.5Et₂O), respectively. All four complexes contain the same $\{\text{Mn}^{\text{III}}_3\text{O}(\text{Ph-sao})_3\}$ building block. Variable temperature magnetic susceptibility and magnetization studies show that all complexes possess an $S = 4$ ground-state.

Adres publiczny

[http://dx.doi.org/ 10.1039/c0dt01273d](http://dx.doi.org/10.1039/c0dt01273d)

Strona internetowa wydawcy

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