Uniwersytet Wrocławski

Repozytorium

Plik pochodzi z repozytorium Wydziału Chemii Uniwersytetu Wrocławskiego

Reactivity of bulky tris(phenylpyrazolyl)methanesulfonate copper(I) complexes towards small unsaturated molecules.

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Rok wydania

2012

Czasopismo

Journal of Organometallic Chemistry

Numer woluminu

714

Strony

47-52

DOI

10.1016/j.jorganchem.2012.03.022

Kolekcja

Naukowa

Język

Angielski

Streszczenie

Reaction of the tris(3-phenylpyrazolyl)methane sulfonate species ($Tpms^{Ph}$)Li with the copper(I) complex $[Cu(MeCN)_4][PF_6]$ affords [Cu($Tpms^{Ph}$)(MeCN)] **1**. The latter, upon reaction with equimolar amounts of cyclohexyl- (CyNC) or 2,6-dimethylphenyl (XylNC) isocyanides, or excess CO, furnishes the corresponding Cu(I) complexes [Cu($Tpms^{Ph}$)(CNR)] (R = Cy **2**, Xyl **3**) or [Cu($Tpms^{Ph}$)(CO)] **4**. The ligated isocyanide in **2** or **3** (or the acetonitrile ligand in **1**) is displaced by 3-iminoisoindolin-1-one to afford **5**, the first copper(I) complex containing an 3-iminoisoindolin-1-one ligand. The ligated acetonitrile in **1** undergoes nucleophilic attack by methylamine to give the amidine complex [Cu($Tpms^{Ph}$){MeC(NH)NHMe}] **6**, whereas only the starting materials were recovered from the attempted corresponding reactions of **2** and **3** with methylamine. Complexes **1** or **6** form the trinuclear hydroxo-copper(II) species $[(\mu\text{-Cu})\{Cu(\mu\text{-OH})_2(Tpms^{Ph})\}_2]$ **7** upon air oxidation in moist methanol. In all the complexes the scorpionate ligand facially caps the metal in the *N*,*N*,*O*-coordination mode.

Słowa kluczowe

Tris(pyrazolyl)methanesulfonate ligand, Copper complexes, Isocyanide, Carbon monoxide, 3-Iminoisoindolin-1-one

Adres publiczny

https://doi.org/10.1016/j.jorganchem.2012.03.022

Strona internetowa wydawcy

http://www.elsevier.com

Typ publikacji

Artykuł

Plik został wygenerowany dnia 2026-11-11 20:56:28

Adres w repozytorium https://old.chem.uni.wroc.pl/pl/repozytorium/lnWy8aE.