

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][PF₆] 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 [(μ-Cu){Cu(μ-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>

Artykuł

Plik został wygenerowany dnia 2026-10-08 20:01:04

Adres w repozytorium <https://old.chem.uni.wroc.pl/pl/repozytorium/InWy8aE>.