Complexes of heteroscorpionate trispyrazolylborate anionic ligands. Part I. The crystal stucture and reactivity of thiocyanato[hydrobis(3-phenylpyrazolyl)(3-*tert*-butylpyrazolyl)borato]cobalt(II) complex.

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Streszczenie

The high-spin cobalt(II) complexes with homoscorpionate hydrotris(3-phenylpyrazolyl)borate (Tp^{Ph}) and heteroscorpionate hydrobis(3-phenylpyrazolyl)(3-*tert*-butylpyrazolyl)borate {$HB(3\text{-}Phpz)_2(3\text{-}t\text{-}Bupz)$} anionic ligands (Tp′) of the general formula Tp′Co(X) were studied. The former tripodal ligand provides intermediate steric hindrance for the central metal ion, which is able to adopt two additional donors from thiocyanate and neutral ligands like pyrazole (pzH) and methanol, or two oxygen donors from the lactate anion. Replacement of one of three 3-phenyl substituents in Tp^{Ph} by the *tert*-butyl one produces a ligand of high steric hindrance which gave tetracoordinate Tp′Co(X) complexes, where X=thiocyanate or monodentate lactate. The complexes were studied by the ^1H NMR spectroscopic method in solution and two of them, $Tp^{Ph}Co(NCS)(pzH)$ and $[HB(3\text{-}Phpz)_2(3\text{-}t\text{-}Bupz)]Co(NCS)$, were characterized structurally by X-ray crystallography.

Słowa kluczowe

Heteroscorpionate tris(3-R-pyrazolyl)borate cobalt(II) complexes, Structures, NMR

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