

Cu(I) complexes bearing the new sterically demanding and coordination flexible tris(3-phenyl-1-pyrazolyl)methanesulfonate ligand and the water-soluble phosphine 1,3,5-triaza-7-phosphaadamantane or related ligands.

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Streszczenie

The new sterically hindered scorpionate tris(3-phenylpyrazolyl)methanesulfonate (Tpms^{Ph})[−] has been synthesized and its coordination behavior toward a Cu(I) center, in the presence of 1,3,5-triaza-7-phosphaadamantane (PTA), *N*-methyl-1,3,5-triaza-7-phosphaadamantane tetraphenylborate ((mPTA)[BPh₄]) or hexamethylenetetramine (HMT) has been studied. The reaction between Li(Tpms^{Ph}) (**1**) and [Cu(MeCN)₄][PF₆] yields [Cu(Tpms^{Ph})(MeCN)] (**2**) which, upon further acetonitrile displacement on reaction with PTA, HMT, or (mPTA)[BPh₄], gives the corresponding complexes [Cu(Tpms^{Ph})(PTA)] (**3**), [Cu(Tpms^{Ph})(HMT)] (**4**), and [Cu(Tpms^{Ph})(mPTA)][PF₆] (**5**). All the compounds have been characterized by ¹H, ³¹P, ¹³C, COSY or HMQC-NMR, IR, elemental analysis, and single crystal X-ray diffraction. In the complexes (**3**) and (**5**), which bear a phosphine ligand (i.e., PTA and mPTA, respectively), the new scorpionate ligand shows the typical *N,N,N*-coordination mode, whereas in (**2**) and (**4**), bearing a N-donor ligand (i.e., MeCN and HMT, respectively), it binds the metal via the *N,N,O* chelating mode, involving the sulfonate moiety.

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