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Complexes of N-thiophosphorylthioureas (HL) with copper(I). Crystal structures of [Cu3L3] and [Cu(PPh3)2L] chelates

Sokolov F., Babashkina M., Safin D., Rakhmatullin A., Fayon F., Zabirov N., Bolte M., Brusko V., Galezowska J., Kozlowski H.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Reaction of the potassium salts of N-thiophosphorylated thioureas of common formula RC(S)NHP(S)(OiPr)2 [R = morpholin-N-yl (HLa), piperidin-N-yl (HLb), NH2 (HLc), PhCH 2NH (HLd)] with Cu(PPh3)3I in aqueous EtOH/CH2Cl2 leads to mononuclear [Cu(PPh 3)2L-S,S′] complexes. Using copper(i) iodide instead of Cu(PPh3)3I, polynuclear complexes [Cu n(L-S,S′)n] were obtained. The structures of these compounds were investigated by ES-MS, elemental analyses, 1H and 31P NMR in solution, IR and 31P solid-state MAS NMR spectroscopy. The crystal structures of [Cu3L3 a] and [Cu(PPh3)2Lb] were determined by single-crystal X-ray diffraction.

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