

Abstract

Title: Complexes of aminoalkylphosphineoxides

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Three selected aminoalkylphosphine oxides were synthesized: Aminomethyl(diphenyl)phosphine oxide, *N*-piperidylmethyl(diphenyl)phosphine oxide, *N,N*-diethylaminomethylbis(hydroxomethyl)phosphine oxide. All prepared substances were characterized by NMR spectroscopy and mass spectrometry. The aminomethyl(diphenyl)phosphine oxide and *N*-piperidylmethyl(diphenyl)phosphine oxide were obtained in the solid state as single crystals and their structure was determined by X-ray analysis.

Acid-base and complexing properties of the studied compounds were studied by potentiometric titration and NMR titration. Protonation constants of all three compounds were obtained, stability constants were not determined because of the low solubility of the complexes in water or low stability of the complexes. The structure of the aminomethyl(diphenyl)phosphine oxide complex with Cu^{2+} was determined by X-ray analysis.

Keywords:

complexes, organophosphorus synthesis, phosphine oxides, acid-base and complexation properties