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N-acylamidophosphinates: Structure, properties and complexation towards main group metal cations

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Abstract

N-Acylamidophosphinates RC(X)NHP(Y)R′2 (NAAP) and their thioanalogues (X,Y=O, S; R = Alk, Ar, CCl3, Het, NR2 2, NR2R3; R' = Ar, OAlk, OAr, SAlk, NAlk2, NHAr) contain X, Y donor atoms and amide nitrogen, which are capable of taking in complexation with metal cations. An application of NAAP complexes in supramolecular chemistry has been investigated in the last decades. Developed synthetic methods allow us to obtain N-acylamidophosphinate ligands contained multiple chelating groups or a combination of several essentially various coordinating fragments in the molecule: chelating moiety C(X)NHP(Y) and a macrocycle. The latter ligands are capable of connecting ions simultaneously by the chelating sites, and by the "guest-host" mechanism using the macrocycle. The bibliography includes 104 references. © 2006 Bentham Science Publishers Ltd.

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Keywords

Coordination compounds, Crown-containing ligands, Intramolecular hydrogen bonds, N-phosphorylated amides, Polyfunctional ligands, Thiophosphoric acids