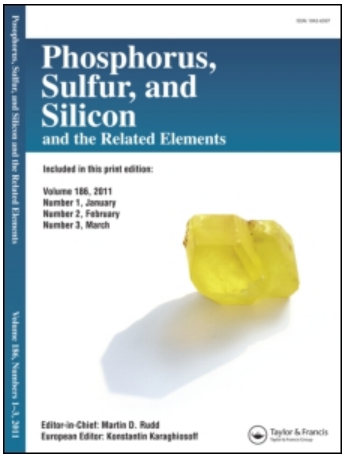

Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Complex Formation of Phosphoryl- and Thiophosphorylacylacetonitriles with Different Cations

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Online publication date: 27 October 2010

To cite this Article Matveeva, Anna , Starikova, Zoya , Passechnik, Margarita , Odinets, Irina and Mastryukova, Tatyana(2002) 'Complex Formation of Phosphoryl- and Thiophosphorylacylacetonitriles with Different Cations', Phosphorus, Sulfur, and Silicon and the Related Elements, 177: 8, 2155
To link to this Article: DOI: 10.1080/10426500213436
URL: http://dx.doi.org/10.1080/10426500213436

Phosphorus, Sulfur and Silicon, 2002, Vol. 177:2155

1042-6507/02 $12.00 + .00
DOI: 10.1080/10426500290094990

COMPLEX FORMATION OF PHOSPHORYL- AND THIOPHOSPHORYLACYLACETONITRILES WITH DIFFERENT CATIONS

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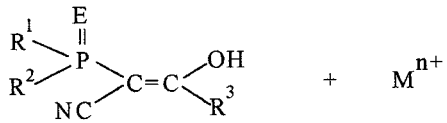
(Received July 29, 2001; accepted December 25, 2001)

The enols $R^1R^2P(E)(CN)C = CR^3OH$ (E = O or S) gave in solutions either neutral metal complexes ML_x or $M(OH)_yL_x$. The anionic ambidentate ligands are coordinated through E and O atoms in solutions, and O, E, and N atoms in in crystals.

Keywords: Metal complexes; phosphoryl(thiophosphoryl)acylacetonitriles

Complex formation of the enol forms of the titled compounds (HL) with cations Mg^{2+}, Mn^{2+}, Ni^{2+}, Co^{2+}, Cu^{2+}, and Cu^{+} in various solvents was studied by potentiometry, UV-vis, IR, Raman, and ESR spectroscopy.



R^1, R^2= Alk, AlkO; R^3 = Alk; E = O,S

SCHEME 1

Chelate-bridging complexes of enols with Co^{2+}, Cu^{2+}, and Cu^{+} were obtained and investigated by x-ray analysis, IR, and Raman spectroscopy. In some cases complexation HL with copper was accompanied oxidation-reduction reaction yielding only to Cu^{2+} complex when E = O and to Cu^{+} complex when E = S. An appreciable electron delocalization in contour of tridentate ligands was found.

This work supported by Russian Basic Research Foundation (grant No 00-15-97386).

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