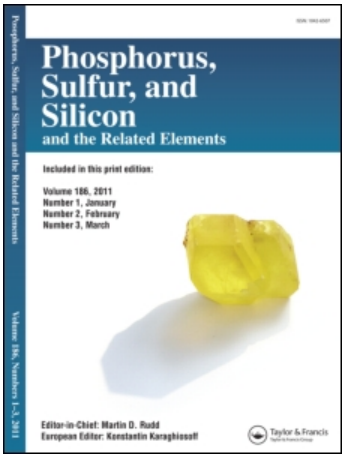


Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Troika Acid Derivatives: Multifunctional Ligands for Metal Complexation in Solution and on Solid Supports. A Novel, Linear Trinickel ("Troitsa") Complex

Boris A. Kashemirov[a]; James M. Carrick[a]; Robert Bau[a]; Charles E. Mckenna[a]
[a] Department of Chemistry, University of Southern California, Los Angeles, CA, USA

Online publication date: 27 October 2010

To cite this Article Kashemirov, Boris A. , Carrick, James M. , Bau, Robert and Mckenna, Charles E.(2002) 'Troika Acid Derivatives: Multifunctional Ligands for Metal Complexation in Solution and on Solid Supports. A Novel, Linear Trinickel ("Troitsa") Complex', Phosphorus, Sulfur, and Silicon and the Related Elements, 177: 10, 2273
To link to this Article: DOI: 10.1080/10426500214110
URL: http://dx.doi.org/10.1080/10426500214110

Phosphorus, Sulfur and Silicon, 2002, Vol. 177:2273

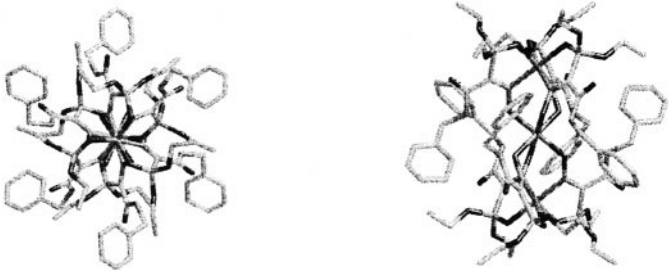
1042-6507/02 $12.00 + .00
DOI: 10.1080/10426500290106004

TROIKA ACID DERIVATIVES: MULTIFUNCTIONAL LIGANDS FOR METAL COMPLEXATION IN SOLUTION AND ON SOLID SUPPORTS. A NOVEL, LINEAR TRINICKEL ("TROITSA") COMPLEX

*Boris A. Kashemirov, James M. Carrick, Robert Bau, and Charles E. Mckenna**
Department of Chemistry, University of Southern California, Los Angeles, CA 90089-0744, USA

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

A series of amide and nitrile derivatives of "troika acid" (phosphonoglyoxylic acid oxime) were synthesized for evaluation as ligands of transition metal cations (such as Cu^{2+}, Co^{2+}, Ni^{2+}) that may contaminate power plant wastewaters. Studies of metal complexation in solution using eight model ligands and solid support linkage studies led to the preparation of new polystyrene (PS) materials with the following PS bead-immobilized ligands: $(EtO)_2P(O)C(=NOH)\text{-}C(O)NHCH_2-$ and $NCC(=NOH)P(O)(OEt)NHCH_2-$. A novel, neutral *N*-benzyl (***E***)-(diethoxyphosphinyl)(hydroxyimino)acetamide (**1**) complex of Ni(II), **2**, was also synthesized. The X-ray crystal structure of **2** reveals six **1** ligands, chelating a trinity ("troitsa") of Ni cations disposed in an unusual linear array (*left*: view along Ni_3 axis; *right*: view perpendicular to Ni_3 axis).



We thank the EPRI for a grant supporting this research.

This article is a part of the XVth International Conference on Phosphorus Chemistry (ICPC 15) proceedings published in *Phosphorus, Sulfur, and Silicon*, Volume 177, Numbers 6/7 and 8/9.