

This article was downloaded by:

On: 30 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



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>

Reversible Transition of Polyphosphate Glasses of Some Bivalent Metals to Tetrametaphosphates

Trojan Miroslav^a

^a Institute of Chemical Technology, Pardubice, Czechoslovakia

To cite this Article Miroslav, Trojan(1987) 'Reversible Transition of Polyphosphate Glasses of Some Bivalent Metals to Tetrametaphosphates', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 30: 3, 843

To link to this Article: DOI: 10.1080/03086648708079330

URL: <http://dx.doi.org/10.1080/03086648708079330>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Reversible Transition of Polyphosphate Glasses of Some Bivalent Metals to Tetrametaphosphates

Trojan Miroslav

Institute of Chemical Technology

Pardubice, 532 10 Czechoslovakia

Conditions and reversibility have been determined of the transition of amorphous polyphosphate glasses Fe^{II} , Cu^{II} , Ba^{II} , Sr^{II} to crystalline tetrametaphosphates. This recrystallization process was followed by the methods of thermal analysis (DTA, TG, DSC, TMA) in an inert atmosphere and in air. The temperatures of penetration and recrystallization, and values of activation energies and heat of the phase transformation have been estimated. Yield of the process has been determined by methods of instrumental analysis and by the extraction methods developed in our laboratory. The process is markedly affected by the atmosphere. Lattice parameters of the tetrametaphosphates obtained by the recrystallization have been determined and compared with those of the products synthesized by the classical thermal procedure (ref. 1). On the basis of the recrystallization of polyphosphate glasses, we have suggested procedures of effective introduction of admixtures into the tetrametaphosphate structure (ref. 2). They are used, inter alia e.g. for preparation of a luminophore (ref. 3) which exhibits an intensive emission of blue and yellow radiation and can be applied in construction of fluorescent lamps.

- 1) Bagieu-Beucher M., Condrand M., Perroux M.: J.Solid.State Chem. 19 (1976) 353.
- 2) Trojan M.: Czech.Patent Application 5934-85.
- 3) Trojan M., Kaplanová M.: Czech.Patent Application 6336-85.