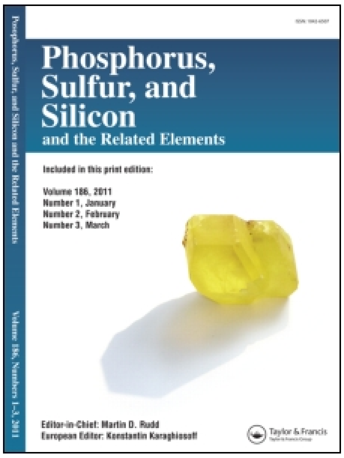

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The Significance of the Secondary Reactions Regularity for the Chemistry of Condensed Metal Phosphates

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THE SIGNIFICANCE OF THE SECONDARY REACTIONS REGULARITY FOR THE CHEMISTRY OF CONDENSED METAL PHOSPHATES

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One of the fundamental methods for the synthesis of condensed phosphates (CP) is their isolation from the aqueous systems containing condensed metal phosphates and polyvalent cations by the method of residual concentrations. The CP regularity was found to show the behaviour in aqueous solutions, conventionally called the secondary reactions. The secondary transformations (ST) or secondary reactions (SR) are expressed in self-deposition of stable crystalline phases through metastable (primary) compounds after a definite induction period from the aqueous systems containing AMCP (ammonium, thallium) and multicharged cations. Various types of secondary reactions, their mechanism, causal relationship, and significance have been investigated. They are typical for simple and complex CP compounds with the chain as well as the cyclic structure of the phosphate ligands containing 2,3,4 phosphorous atom despite the polyvalent cation nature. More than 400 compounds have been obtained by means of the rational methods based on SR. SR contribute significantly to the complexation theory. SR of complex compounds are in their character contrary to the complexation reactions of the known inorganic salt systems. This opposition is realized by isolation of these complex compounds in the form of little-soluble salts. They are the products of a stepwise complex dissociation or of the primary complexation compounds. The isolated compounds are of great purity.