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Application of three rules of solubility and selection rule of sediment priority to calculate areas of solid phase in aqueous solutions of metal salts

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Abstract

For calculating the formation areas of a large amount of solid phases in the same system with overlapping areas, the mathematical model of equilibrium in aqueous solutions of metal salts has been created. The model is used as a classical condition of saturation in the solution on the basis of the product solubility rules and rule of molecular solubility as well as the rule of solubility for intermediates. Selection rule of priority sediment is used to calculate the transition point from one sediment to the another in supersaturated solution with several precipitations. The model is used for planning the experiment, calculating the constants of homogeneous and heterogeneous equilibrium, planning conditions of synthesis of target compounds in the precipitations form or thin films.