

SELECTIVITY OF ORGANIC LIGANDS TOWARDS s-, d- AND f-ELEMENTS

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An effective solution to selectivity problems is a key factor in the development of new technologies for mineral processing, analytical chemistry, biology, medicine, etc. This work shows how the assessment of the stability constants of the resulting complexes is important for the design of ligands and obtaining high selective properties for various applications. Examples of the synthesis of organic ligands containing various coordinating fragments (diphenylphosphoryl, phosphonate groups, fragments of salicylic acid and its phosphoryl analogue) with selectivity to lithium (L^1 , L^2), copper (L^3), cadmium (L^4), gallium (L^5) and in the REE series (L^6) are given. These ligands can be used as active components of plasticized polymer membranes of ion-selective electrodes, effective extractants and potential anti-inflammatory and radiopharmaceuticals. The selectivity was assessed based on the determination of stability constants of metal ion complexes with L^1 – L^6 in solutions by spectrophotometry and potentiometry methods using the ChemEqui program.

