Complex Formation in the Course of Synthesis of Zinc Oxide from Citrate Solutions

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Abstract—Complex formation of zinc(II) with citric acid in acidic medium was studied by pH-potentiometric titration at various metal to acid ratios. The speciation diagrams of the complexes in relation to pH were plotted, and the stability constants of the complexes were determined. Precursors of the synthesis of metal oxide materials were prepared at two reactant ratios. A scheme of the precursor thermal decomposition based on data of derivatography and IR spectroscopy was suggested, and the compositions of compounds formed during decomposition were determined.

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