

Thermal Decomposition of Barium Bis-oxalatodiaquaindate(III) Trihydrate

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A crystalline precipitate with an empirical formula $\text{BaIn}_2(\text{C}_2\text{O}_4)_4 \cdot 7\text{H}_2\text{O}$ is obtained when 0.1 M oxalic acid solution is added to 0.01 M indium(III) salt solution in the presence of 0.025M $\text{Ba}(\text{NO}_3)_2$ and 0.125 M HNO_3 . Thermal analysis of the compound indicates the formation of $\text{Ba}[\text{In}(\text{C}_2\text{O}_4)]_2$ which eventually decomposes to a mixture of barium carbonate and indium(III) oxide. The ultimate products are, however, the oxides of barium and indium(III). The thermal data along with infrared and X-ray diffraction data suggest the structural formula of the complex as $\text{Ba}[\text{In}(\text{C}_2\text{O}_4)_2(\text{H}_2\text{O})_2]_2 \cdot 3\text{H}_2\text{O}$.