

Thermal Decomposition of Calcium Dioxodiaquaperoxyoxalatouranate(VI) Dihydrate

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Calcium dioxodiaquaperoxyoxalatouranate(VI) dihydrate was obtained by reaction of uranyl nitrate with oxalic acid and then hydrogen peroxide in the presence of a calcium ion. The complex was subjected to chemical analysis. The thermal decomposition behavior of the complex was studied using thermo-gravimetric, differential thermal analysis and differential thermo-gravimetric techniques. The solid complex salt and the intermediate product of thermal decomposition were characterized using infrared absorption and X-ray diffraction spectra. Based on the data from these physico-chemical investigations the structural formula of the complex was proposed as $\text{Ca}[\text{UO}_2(\text{O}_2)(\text{C}_2\text{O}_4)(\text{H}_2\text{O})_2]\cdot 2\text{H}_2\text{O}$.