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STEP

AUTHORS: ④ Karyakin, A.V. and Volynets, M.P.

TITLE: ⑥ Infrared spectra of the carbonate complex of thorium

PERIODICAL: ⑤ Zhurnal strukturnoy khimii, v. 3, no. 6, 1962, 714-716

TEXT: The aim of the research was to demonstrate the participation of  $\text{CO}_3^{2-}$  ions in the coordination bond of  $\text{Na}_4[\text{Th}(\text{CO}_3)_4] \cdot \text{Na}_2\text{CO}_3 \cdot 12\text{H}_2\text{O}$  and the presence of free  $\text{CO}_3^{2-}$  in the outer sphere of this complex. Measurements were made on a UR-10 spectrophotometer on wavelengths of 400 to 4000  $\text{cm}^{-1}$ . Data for the hydrated complex show that the frequencies of  $\text{CO}_3^{2-}$  absorption bands coincide quite well with those for the complex  $[\text{Co}(\text{NH}_4)_4\text{CO}_3]$ . Besides absorption bands, relating to  $\text{CO}_3^{2-}$  ions in the inner sphere of the complex, there are others with frequencies of 870 and 1070  $\text{cm}^{-1}$ , possibly relating to the absorption of hydrated  $\text{CO}_3^{2-}$  present in the outer sphere. This is confirmed by appearance of certain absorption bands  
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Infrared spectra ...

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in the infrared spectrum of the dehydrated complex. These bands have frequencies of 700-705 and 855  $\text{cm}^{-1}$  and are characteristic and anhydrous  $\text{Na}_2\text{CO}_3$ . There are 2 tables and 1 figure.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V.I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry im. V.I. Vernadskiy)

SUBMITTED: July 20, 1962

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