

Та-Комплекс

1964

Thiocyanate complexes of tantalum. A. M. Golub and A. M. Sych. *Latvijas PSR Zinatnu Akad. Vestis, Kim. Ser.* 1964(4), 387-96(Russ). The complex formation in the system $\text{TaCl}_5\text{-KSCN-Sol.}$ (Sol. = MeOH, *n*-BuOH, dimethylformamide (DMF)) was investigated by spectrophotometric, conductometric, and preparative means. Org. media were chosen due to the great tendency of Nb^{5+} to hydrolyze in aq. solns. In MeOH the existence of complex species exhibiting Ta:SCN ratios of 1:1, 1:2, and 1:3 could be demonstrated. Since Ta^{5+} undergoes solvolysis in alc. medium, the corresponding complexes are formulated as $\text{Ta}(\text{OCH}_3)_2\text{SCN}^{2+}$, $\text{Ta}(\text{OCH}_3)_2(\text{SCN})_2^+$, and $\text{Ta}(\text{OCH}_3)_2(\text{SCN})_3$. The dissocn. consts. of these species were: $K_1 = 7.5 \times 10^{-4}$, $K_2 = 3.3 \times 10^{-6}$, and $K_3 = 1.7 \times 10^{-8}$. The expts. carried out in *n*-BuOH solns. disclosed analogously the formation of 3 complex species whose dissocn. consts. detd. spectrophotometrically at $260 \text{ m}\mu$ were: $K_1 = 2.1 \times 10^{-4}$, $K_2 = 9.0 \times 10^{-8}$, and $K_3 = 3.8 \times 10^{-12}$. In DMF solns. the existence of a stepwise equil. implying 6 different complex species was observed. The system was treated by Bjerrum's method to calc. the corresponding successive dissocn. consts. by measuring the absorbance of isomolar solns. at $290 \text{ m}\mu$.

J. A. Perez-Bustamante

Ta -

-Kamunsky

C.A. 1965.

62.7

7361 cd

Ta - kommer

1968

Ke

90401n Stability of a tantalum peroxide complex in concentrated sulfuric acid. V. P. Vasil'ev and G. A. Zaitseva (Ivanovsk. Khim.-Tekhnol. Inst., Ivanovo). *Zh. Neorg. Khim.* 13(1), 84-8(1968)(Russ). The compn. and stability of a Ta(V) peroxide complex in 96% H_2SO_4 were studied spectrophotometrically. The absorbance of solns. contg. Ta(V) and H_2O_2 remained unchanged for 30 min. and then decreased, probably because of the decompn. of H_2O_2 . The Ta(V)- H_2O_2 complex has max. absorption at 285 m μ . The complex forming reaction $TaO_2^+ + H_2O_2 = TaO_2 \cdot H_2O_2^+$ was assumed. The formation of Ta(V) sulfate complexes is considered but not included because the H_2SO_4 concn. was the same in all expts. The stability const. of the complex is $(2.72 \pm 0.05) \times 10^3$, and its absorptivity is 1.00×10^3 . These values remain const. when the H_2O_2 and Ta(V) concns. are varied in the ranges 0.0005-0.002 and 0.0004-0.001M, resp. This indicates that the Ta(V) species in 96% H_2SO_4 are monomeric. Z. Kolarik

C. A. 1968. 68-20

Ta - F - комплекс.

1971

20 В65. Фторидные комплексы тантала (V) в растворе. Набиванец Б. И., Лукачина В. В. «Укр. хим. ж.», 1971, 37, № 6, 581—590

Методами р-римости, ионного обмена и экстракции изучено состояние ионов Ta^{5+} в кислых фторидных р-рах. Установлено образование комплексов $Ta(OH)_2F_3^0$, $Ta(OH)_4^-$, TaF_6^- — TaF_7^{2-} и определены константы, характеризующие равновесия с участием указанных соединений. Показана применимость полученных констант для расчета условий анионообменного поглощения Ta и его экстракции циклогексаном из кислых фторидных растворов.

Резюме

X. 1971. 20