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The Effect of Egg Albumin on the Solubility of Thallous Salts at 25 C

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perature than does the ferric oxide. The hydrated chromic oxide when heated to 400°C for even as short a time as four hours is soluble to no appreciable extent in contact with concentrated hydrochloric acid for 48 hours at 80°C. The same oxide when heated for two hours at 300°C is almost completely dissolved in concentrated hydrochloric acid in one hour.

At a temperature of 350°C the oxide shows increase in the time necessary for solution.

Time of heating at 350°C.	Time for 100% solution of 0.1g sample in H ₂ SO ₄ at 80° C.
1 hour	3 hours
2 hours	5
3	8
6	15
13	25

In each case a much longer time was taken for solution in hydrochloric acid, and as the time of ignition increases, the oxide approaches insolubility in hydrochloric acid.

This shows that for both ferric oxide and for chromic oxide, the solubility in acids is dependent on the temperature of ignition, the time of ignition, and the time allowed for solution.

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THE EFFECT OF EGG ALBUMIN ON THE SOLUBILITY OF THALLOUS SALTS AT 25°C.

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The solubilities of TlCl, TlCNS, and Tl₂SO₄ were determined in solutions of egg albumin at 25°C.

The Tl⁺ was titrated to Tl⁺⁺⁺ with standard KIO₃ using the IC1 endpoint. The albumin concentration was determined by a modified Kjeldahl method. The pH of each solution was obtained with a glass electrode using M/20 potassium acid phthalate as a standard (pH = 3.97).

In solutions of egg albumin dialyzed free of chlorides and sulphates and adjusted to a pH of 3.3 it was found that the greater the albumin concentration the greater was the amount of dissolved salt per 1000 g. of water.

In albumin solutions at a pH of about 6 and to which no acid had been added a similar phenomenon was observed except that at small albumin concentrations the solubility of Ti_2SO_4 was less than in pure water.

In dilute isoelectric albumin solutions all three salts studied were less soluble per 1000 g. of water than in pure water. These curves passed through a minimum and in some of the more concentrated albumin solutions the solubility became greater than in pure water.

The valence and extent of hydration of the albumin cation was estimated from the solubility of TiCl at a pH of 3.3.

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