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(8) Mingardi and Porter[6b] reported a very weak ($\epsilon \sim 0.01$) absorption band at 18 500 cm^{-1}. We have found this latter transition to be present in some, but not all, samples studied; it is likely associated with an impurity present in the lattice. For our experiments, large crystals of $K_3Co(CN)_6$ were grown in darkness by slow evaporation of saturated, filtered aqueous solutions of commercial material. The resultant crystals were redissolved in water and the process was repeated; crystals from several different batches were used in our studies. Very large crystals were grown from seeds.
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Received November 16, 1978

Acidity of Zinc Chloride Solutions

Sir:

In a recent issue of *Inorganic Chemistry* the Hammett acidity function, H_0, was reported for a series of zinc chloride solutions, and it was concluded that "highly concentrated solutions of certain metal salts must be regarded as strong protonic acids".[1] This conclusion was arrived at by comparing the H_0 of $ZnCl_2$ solutions with that of other acids at the same (high) molarities. It is the purpose of this correspondence to point out that comparisons of H_0 for the purpose of providing orders of acid strength should be made at the *same water activity*.[2-4] Figure 1 displays the H_0 values as a function of water activity for the zinc chloride solutions, as well as for several strong acids and phosphoric acid ($pK_a = 2.15$). The curve for nitric acid[5] is similar to that for the strong acids down to a water activity of 0.6.

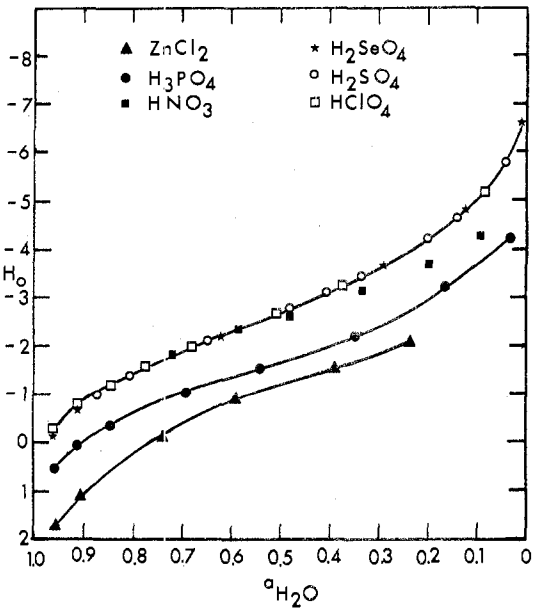

Figure 1. H_0 values of some mineral acid solutions and zinc chloride solutions vs. water activity of the solutions.[8]

From Figure 1 we may conclude that the acidity of the aquozinc ion is less than that of phosphoric acid even at high concentration. More quantitative treatments of acidity from H_0 and a_{H_2O} data are available,[6] but in view of the unknown salting-out effect[7] of concentrated $ZnCl_2$ solutions on the neutral indicator, no attempt has been made to apply them.

Registry No. $ZnCl_2$, 7646-85-7.

References and Notes

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Received December 15, 1978

0020-1669/79/1318-1412$01.00/0 © 1979 American Chemical Society