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Short Communication

Potentiometric titration of complexes with flavones and metal

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Abstract

The dissociation constant and equivalence point in 70% Dioxane-Water and end point in different concentration with flavones at different temprature. Dissociation constant equivalence point has also calculated by potentiometer. Ligand had been studied using potentiometric method using calomel and platinum electrode various temperature for 0.1M ionic strength.

Keywords: Dioxane, Potentiometer, Metal solutions Ni(II), Copper (II), NAOH.

Introduction

A number of investigations on potentiometric titrations of complexes have been ade to explain their prominent features in the solutions. However, the extensive literature dealing with the potentiometric titrations of complexes has been restricted to globular protines as well as synthetic polymeric acids, bases. As the part of general program on complex formation between metal and acid ions[1]. These paper presents the results on the flavones of benzaldehyde and crotonaldehyde complex of copper and Ni(II) using the method of potentiometry[2].

Complex formation between copper(II) and Ni(II) and unsubstituted acid[3]. Many quantitative studies were carried out with flavones to find its conformational change in neutralization and to estimate the molecular parameters from analysis of the potentiometric titration[4]. Experimental study carrid out on calomel electrode under both static and dynamic conditions presence of other ions. With ligands and metal for the determination of the relevant complex formation constant from potentiometric data[5].

Materials and methods

In potentiometric titration prepare electrolytic solution of given concentrations of and the ligands flavones of p-chloro benzaldehyde, flavone of chrotonaldehyde and flavones of benzaldeyde and metal solution of copper and nickel. Also prepare 0.1 N NAOH soutations. These NAOH solutation standerised oxalic acid. the std. metal solutions were prepared in dioxane-water. These NAOH soutions tritre against metal solutions.

Result and discussion

The graphical data showed that increasing volume of NaOH with also increasing pH value clearly indicate disociation constant at point of interaction.

Table-1: The titration reading of Copper(II) and volume of NaOH 0.1 M,at temp 25^{0}C

Ml	pH
0.5	1
1	1.147
1.5	1.308
2	1.499
2.5	1.757
3	0.243
3.5	7
4	1.624
4.5	12.103

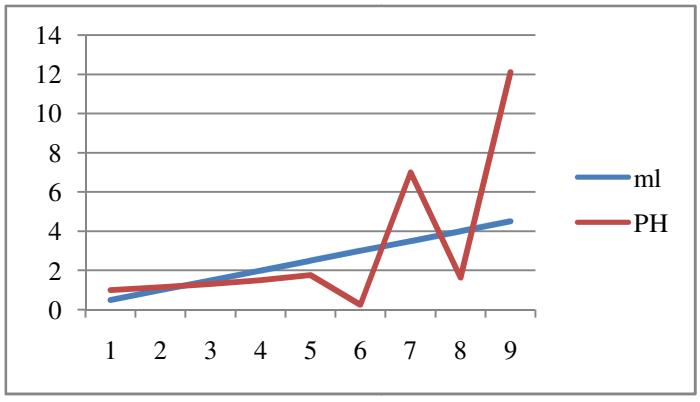

Figure-1: Volume of NaOH Vs pH on flavones of Benzaldehyde

Table-2: The titration reading of Ni(II), and volume of NaOH 0.1 M, at temp 25^0C

Ml	pH
0.5	1.678
1	1.986
1.5	2.89
2	1.789
2.5	3.678
3	2.456
3.5	2.678
4	1.896
4.5	4.789

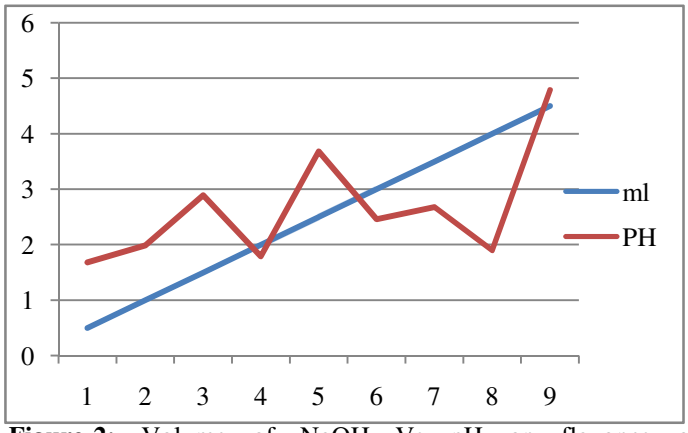

Figure-2: Volume of NaOH Vs pH on flavones of Crotonaldehyde

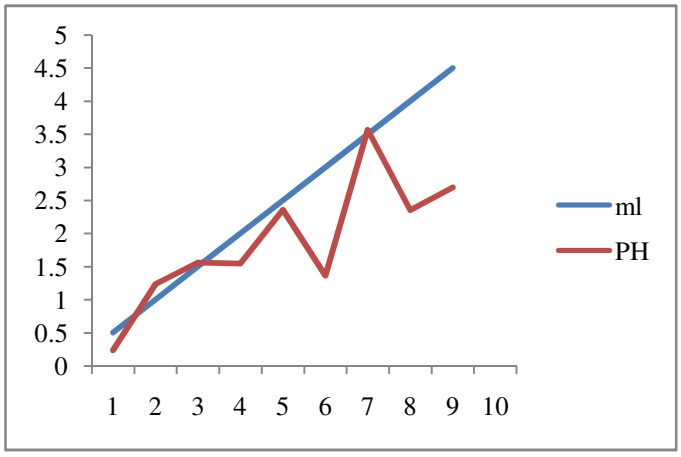

Figure-3: Volume of NaOH Vs pH on flavones of P-Chlorobenzaldehyde

Table-3: The titration reading of Ni(II) and volume of NaOH 0.1 M,at temp 25^0C

Ml	pH
0.5	0.236
1	1.235
1.5	1.563
2	1.548
2.5	2.362
3	1.365
3.5	3.569
4	2.356
4.5	2.698

Conclusion

The dissociation co nstant and equivalence point were determine potentiometrically. It is concluded that the dissociation constant and equivalence point different at different concentration.

References

1. Desreux J.F., Merciny E. and Loncin M.F. (1981). Nuclear Magnetic Resonance and Potentiometric studies of the Protonation Scheme of two Tetraaza Tetraacetic Macrocycles. *Department of analytical chem. and radiochemistry, university of liege, start tilman,* B-4000 Belgium, *Inorg.chem*, 20(4), 987-991.
2. Tokiwa F. and Ohki K. (1966). Potentiometric titration of a nonionic –cationic surfactant in aqueous solution. *The Journal of Physical Chemistry*, 70(11), 3437-3441.
3. N.C. Lt. and E.D. (1951). Complex Metal-amino acid complexes(II) polarographic and potentiometric studies on formation, between copper (II) and amino acid ion 2000. 20.
4. Kawaguchi Y. and Nagasawa M. (1969). Potentiometric titration of steroregular poly (acrylic acid). *The Journal of Physical Chemistry,* 73(12), 4382-4384.
5. Rechnitz G.A. and Lin Z.F. (1968). Potentiometric measurements with calcium-selective liquid membrane electrodes. *Analytical Chemistry,* 40(4), 696-699.