

Stepwise and overall formation constants

In 1911 Bjerrum suggested that the formation of a complex in which proceeds with stepwise addition of the ligands to the metal ion.

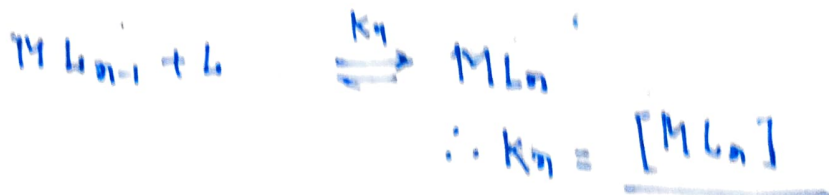
Let us consider the formation of a complex ML_n (stepwise formation of the complex)

where M is the metal ion used

L is a monodentate ligand.

n is the maximum co-ordination number.

Now suppose that the formation of the complex ML_n takes place by the following of consecutive steps and equilibrium constants.



where n is the maximum co-ordination number of a metal ion for the ligand L .

The equilibrium constants K_1, K_2, \dots, K_n are called stepwise formation constants.

or
Stepwise Stability Constant.