Coordination compounds are molecules that pose one or multiple metal centers that is bound to ligands (atoms, ions, or molecules that donate electrons to the metal). These complexes can be neutral or charged. When the complex is charged, it is stabilized by neighboring counter-ions. A complex ion has a metal ion at its center with a number of other molecules or ions surrounding it. These can be considered to be attached to the central ion by coordinate (dative covalent) bonds and in some cases, the bonding is actually more complicated than that. The molecules or ions surrounding the central metal ion are called ligands.
Complex Ion Chemistry

- Complex Ion Equilibria