Basic Rules for Coordination Compound Nomenclature

a. name the cation first, followed by the anion.

b. in a formula, enclose the inner coordination sphere in square brackets.

c. in a formula, write the metal symbol first and then the ligands of the inner coordination sphere; in a name, write the ligands before the metal.

d. indicate the number of ligands of each kind with the corresponding prefix. If the name of a ligand already has a prefix or it is complicated, this ligand name is enclosed in parentheses and the alternate prefix is used.

e. ligands are written in alphabetical order (ignoring any prefixes).

f. any anionic ligand names are given the suffix “-*o*”. Neutral ligands retain their usual names, but coordinated water is called *aqua* and coordinated ammonia is called *ammine*.

g. two systems exist for designating charge or oxidation number:

1. The Stock system indicates the calculated oxidation number of the metal ion as a Roman numeral in parentheses after the metal name.

2. The Ewing-Bassett system indicates the charge on the coordination sphere in parentheses after the name of the metal.

h. if the charge on the coordination sphere is negative, the metal name is given the suffix “-*ate*.” The names of certain metals (Fe, Ag, Rb, Sn, Au) are also based on their Latin source when the complex has a negative charge.

i. the prefixes “*cis*-“ and “*trans*-” are used to designate adjacent and opposite ligand locations, respectively.