To be able to use Crystal Field Theory (CFT) successfully, it is essential to first determine the electronic configuration of the central metal ion in any complex. This requires being able to recognize all the entities making up the complex and knowing whether the ligands are neutral or anionic, so that you can determine the oxidation number of the metal ion.

In many cases the oxidation number for first row transition metal ions will be either (II) or (III), but in any case you may find it easier to start with the M(II) from which you can easily add or subtract electrons to get the final electronic configuration.

Contributors and Attributions

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