

Chapter 19 — Complex Ions

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- Charged species with a center metal bonded to molecules called ligands
- Five Main Ligands: NH_3 , H_2O , Cl^- , OH^- , CN^-
- Coordination Number — The number of bonds on the central atom
- Coordination Compound — The complex ion always goes in brackets (e.g. $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4$)
- Charge of Complex = Oxidation Number on the center atom + Charges of Ligands
- Chelating Agents — A ligand with more than one atom that forms a bond
 1. Oxalate — $\text{C}_2\text{O}_4^{2-}$
 2. Ethylenediamine (en)
 3. When one is present, double the number for the coordination number
- Isomer — Same formula, different structure
 1. Structural — C_4H_{10}
 2. Geometric — Cis/Trans
 3. Optical — Chiral Center