

Introduction for Module 13 – Coordination Chemistry

Textbook: [Open Stax Chemistry 2e](#)

Suggested Reading: Chapter 19.1-19.2

Learning Objectives:

- **List the defining traits of coordination compounds**
- **Calculate d-electron count of a metal given its oxidation number or charge**
- **Calculate the oxidation number of a central atom within a coordination compound**
- **Recognize ligands within coordination compounds as common, previously studied structures**

Captions and Attributions:

- 1) The segment of the periodic table shown here lists the electron configurations for transition metals, including notable exceptions. [Figure 6.29 This version of the periodic table shows](#) by [Open Stax](#) is [licensed under CCBY 4.0](#).
- 2) Transition metals of various oxidation numbers often give distinctive colors to aqueous solutions. [Figure 19.12 Metal ions that contain partially filled d subshell](#) by Sahar Atwa and [Open Stax](#) is [licensed under CCBY 4.0](#).
- 3) Complex ions are formed by ligand-metal bonds that are similar to covalent bonds, but differ in that both electrons come from the ligand. [Figure 19.13 \(a\) Covalent bonds involve the sharing of electrons](#) by [Open Stax](#) is [licensed under CCBY 4.0](#).
- 4) Complex ions can form geometries that can appear more sophisticated than previous geometries, but all will behave like a single ion when forming a compound. [Figure 19.14 The complexes \(a\) \$\[\text{Ag}\(\text{NH}_3\)_2\]^+\$](#) by [Open Stax](#) is [licensed under CCBY 4.0](#).



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