

## CHAPTER OVERVIEW

### 12: Coordination Chemistry IV - Reactions and Mechanisms

12.1: Introduction to Reactions of Metal Complexes

12.2: Substitutions Reactions

12.2.1: Introduction to Substitution Reactions

12.2.2: Inert and Labile Complexes

12.2.3: Mechanistic Possibilities

12.3: Kinetics Hint at the Reaction Mechanism

12.3.1: Rate Law for Dissociative Mechanisms

12.3.2: Rate Laws for Interchange Mechanisms

12.3.3: Rate Law for Associative Mechanisms

12.3.4: Preassociation Complexes

12.3.5: Activation Parameters

12.3.6: Some Reasons for Differing Mechanisms

12.4: Experimental Evidence in Octahedral Substitutions

12.4.1: Dissociation

12.4.2: Linear Free Energy Relationships

12.4.3: Associative Mechanisms

12.4.4: The conjugate base mechanism

12.4.5: The Kinetic Chelate Effect

12.5: Stereochemistry of Octahedral Reactions

12.5.1: Substitution in trans-en octahedral complexes

12.5.2: Substitution in cis-en octahedral complexes

12.5.3: Isomerization of Chelate Rings

12.6: Substitutions in Square Planar Complexes

12.6.1: Kinetics and Stereochemistry of Square Planar Reactions

12.6.2: Evidence for Associative Reactions

12.7: The Trans Effect

12.8: Redox Mechanisms

12.8.1: Outer Sphere Electron Transfer

12.8.2: Inner Sphere Electron Transfer

12.9: Reactions of Coordinated Ligands

12.9.1: Metal-catalyzed Hydrolysis

12.9.2: Template Reactions

12.9.3: Electrophilic Substitutions

---

This page titled [12: Coordination Chemistry IV - Reactions and Mechanisms](#) is shared under a [not declared](#) license and was authored, remixed, and/or curated by [Kathryn Haas](#).