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Vive la Difference - Mixed-metal Complexation

2.4.3 Supersized - Binding to Macromolecules
2.5 A Separate Race - Organometallic Species; Concept Keys; Further Reading; 3 Complexes; 3.1 The Central Metal Ion; 3.2 Metal-Ligand Marriage; 3.2.1 The Coordinate Bond; 3.2.2 The Foundation of Coordination Chemistry; 3.2.3 Complex Shape - Not Just Any Which Way; 3.3 Holding On - The Nature of Bonding in Metal Complexes; 3.3.1 An Ionic Bonding Model - Introducing Crystal Field Theory; 3.3.2 A Covalent Bonding Model - Embracing Molecular Orbital Theory; 3.3.3 Ligand Field Theory - Making Compromises; 3.3.4 Bonding Models Extended
3.4 Coupling - Polymetallic Complexes
3.5 Making Choices; 3.5.1 Selectivity - Of all the Molecules in all the World, Why This One?; 3.5.2 Preferences - Do You Like What I Like?; 3.5.3 Complex Lifetimes - Together, Forever?; 3.6 Complexation Consequences; Concept Keys; Further Reading; 4 Shape; 4.1 Getting in Shape; 4.2 Forms of Complex Life - Coordination Number and Shape; 4.2.1 One Coordination (ML); 4.2.2 Two Coordination (ML2); 4.2.3 Three Coordination (ML3); 4.2.4 Four Coordination (ML4); 4.2.5 Five Coordination (ML5); 4.2.6 Six Coordination (ML6)
4.2.7 Higher Coordination Numbers (ML7 to ML9)
4.3 Influencing Shape; 4.3.1 Metallic Genetics - Metal Ion Influences; 4.3.2 Moulding a Relationship - Ligand Influences; 4.3.3 Chameleon Complexes; 4.4 Isomerism - Real 3D Effects; 4.4.1 Introducing Stereoisomers; 4.4.2 Constitutional (Structural) Isomerism; 4.4.3 Stereoisomerism: in Place - Positional Isomers; in Space - Optical Isomers; 4.4.4 What's Best? - Isomer Preferences; 4.5 Sophisticated Shapes; 4.5.1 Compounds of Polydentate Ligands; 4.5.2 Encapsulation Compounds; 4.5.3 Host-Guest Molecular Assemblies; 4.6 Defining Shape; Concept Keys
Further Reading

Sommario/riassunto

At the heart of coordination chemistry lies the coordinate bond, in its simplest sense arising from donation of a pair of electrons from a donor atom to an empty orbital on a central metalloid or metal. Metals overwhelmingly exist as their cations, but these are rarely met 'naked' - they are clothed in an array of other atoms, molecules or ions that involve coordinate covalent bonds (hence the name coordination compounds). These metal ion complexes are ubiquitous in nature, and are central to an array of natural and synthetic reactions. Written in a highly readable, descriptive and access