

## 7.1: Acid Base Chemistry

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Learning objectives for this unit are to:

- Compare and contrast Arrhenius, Bronsted-Lowry, and Lewis concepts of acids and bases
  - Identify and classify atoms, ions, and molecules as acids or bases
  - Describe and rationalize acid/base chemistry in non-aqueous systems
  - Explain the concept of solvent leveling and identify the strongest possible acids and bases for a given solvent system
  - Differentiate between coordinate covalent/dative bonds and covalent/ionic bonds
  - Identify frontier orbitals in MO energy level diagrams
  - Describe how metal cations lower the pKa of bound water molecules
  - Identify and rationalize trends in acid strength of metal cations
  - Predict and rationalize trends in Lewis base strength based on inductive and steric effects
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