

CHAPTER OVERVIEW

Chapter 6: Solutions



We have covered quite a number of topics up to this point: the structure of atoms, discrete molecules, complex network solids, and metals; how atoms and molecules interact, through London dispersion forces, dipole-dipole interactions, hydrogen bonds, and covalent and ionic bonds. We have discussed how changes in energy and entropy lead to solid, liquid, and gas state changes. So far, so good, but is this really chemistry? Where are the details about chemical reactions, acids and bases, gas laws, and so forth? Not to worry—we have approached the topics in this order so that you have a strong conceptual foundation before you proceed to the nuts and bolts of chemical reactions. Without this foundation, you would just memorize whatever equations we presented, without making the connections between seemingly disparate reactions. Many of these reactions are complex and overwhelming even for the most devoted student of chemistry. The topics we have covered so far will serve as a tool kit for understanding the behavior of increasingly complex chemical systems. We will continue to reinforce these basic ideas and their application as we move on to the types of reactions that are relevant to most chemical systems.

[6.1: What Is A Solution?](#)

[6.2: Solubility: why do some things form solutions and others not?](#)

[6.3: Hydrogen Bonding Interactions and Solubility](#)

[6.4: Gibbs Energy and Solubility](#)

[6.5: Polarity](#)

[6.6: Temperature and Solubility](#)

[6.7: In-Text References](#)

Thumbnail: Nile red solution. (CC BY-SA 3.0; Armin Kübelbeck).

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