

There are a bewildering array of possible reactions, but the truth is that most chemical reactions fall into a rather limited number of basic types. This is a good thing for the student of chemistry. Recognizing types simplifies our task greatly, and enables us to achieve a greater level of confidence with predicting and explaining the outcomes of chemical reactions. Although each particular reaction differs in its specific molecules and conditions (e.g., temperature, solvent, etc.), some common rules apply. Rather than bombard you with a lot of seemingly unrelated reactions, we will introduce you to the two most common reaction types: acid–base (which as we will see can also be classified as nucleophile/electrophile) and oxidation–reduction. Keep in mind that whatever the reaction type, reactions are systems composed of reactants, products, and the environment in which the reaction occurs. Reactants behave quite differently in the gas phase than in an aqueous or non-aqueous system. High or low temperatures also affect behavior. In the next chapter, we will consider how thermodynamics and kinetics come into play in particular reactions, under specific conditions. This will then lead us to consider equilibrium and non-equilibrium systems.

- 7.1: Collisions and Chemical Reactions
- 7.2: Acid-Base Reactions: A Guide for Beginners
- 7.3: Lewis Acid-Base Reactions
- 7.4: Nucleophiles and Electrophiles
- 7.5: Oxidation-Reduction Reactions
- 7.6: Energy Changes and Chemical Reactions
- 7.7: In-Text References

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