

CHAPTER OVERVIEW

11: REACTIONS OF ALKYL HALIDES- NUCLEOPHILIC SUBSTITUTIONS AND ELIMINATIONS

LEARNING OBJECTIVES

After you have completed Chapter 11, you should be able to

- fulfill all of the detailed objectives listed under each individual section.
- use the reactions studied in this chapter with those from earlier ones when designing multistep syntheses.
- use the reactions and concepts discussed in this chapter to solve road map problems.
- define, and use in context, the key terms introduced.

In this course, you have already seen several examples of nucleophilic substitution reactions; now you will see that these reactions can occur by two different mechanisms. You will study the factors that determine which mechanism will be in operation in a given situation, and examine possible ways for increasing or decreasing the rates at which such reactions occur. The stereochemical consequences of both mechanisms will also be discussed. Elimination reactions often accompany nucleophilic substitution; so these reactions are also examined in this chapter. Again you will see that two different mechanisms are possible, and, as in the case of nucleophilic substitution reactions, chemists have learned a great deal about the factors that determine which mechanism will be observed when a given alkyl halide undergoes such a reaction.

[11.0: Introduction](#)

[11.1: The Discovery of Nucleophilic Substitution Reactions](#)

[11.2: The S_N2 Reaction](#)

[11.3: Characteristics of the S_N2 Reaction](#)

[11.4: The S_N1 Reaction](#)

[11.5: Characteristics of the S_N1 Reaction](#)

[11.6: Biological Substitution Reactions](#)

[11.7: Elimination Reactions- Zaitsev's Rule](#)

[11.8: The E₂ Reaction and the Deuterium Isotope Effect](#)

[11.9: The E₂ Reaction and Cyclohexane Conformation](#)

[11.10: The E₁ and E₁cB Reactions](#)

[11.11: Biological Elimination Reactions](#)

[11.12: A Summary of Reactivity - S_N1, S_N2, E₁, E₁cB, and E₂](#)

[11.S: Reactions of Alkyl Halides - Nucleophilic Substitutions and Eliminations \(Summary\)](#)

This page titled [11: Reactions of Alkyl Halides- Nucleophilic Substitutions and Eliminations](#) is shared under a [CC BY-SA 4.0](#) license and was authored, remixed, and/or curated by [Steven Farmer & Dietmar Kennepohl](#).