

Chapter 7. Haloalkanes

Learning objectives:

1. Provide both IUPAC and common names for haloalkanes.
2. Differentiate primary, secondary, and tertiary alkyl halides.
3. Write the general electron-pushing (arrow-pushing) mechanisms for S_N1 and S_N2 reactions.
4. Draw the potential energy diagrams for S_N1 and S_N2 reactions.
5. Predict the favored reaction between S_N1 and S_N2 mechanisms for a given haloalkane based on the structures of haloalkanes, the structures of nucleophiles, leaving groups, and solvents.
6. Write the general electron-pushing (arrow-pushing) mechanisms for E1 and E2 reactions.
7. Draw the potential energy diagrams for E1 and E2 reactions.
8. Predict the favored reaction between E1 and E2 mechanisms for a given haloalkane based on the structures of haloalkanes, the strengths of bases, and leaving groups.
9. Predict the major product(s), including the stereochemistry, of elimination reactions.

Sections to be covered (in the order of delivery):

- 7.2 Nucleophilic Aliphatic Substitution
- 7.3 Mechanism of Nucleophilic Aliphatic Substitution
- 7.4 Factors that influence the Rate of S_N1 and S_N2 Reactions
- 7.5 An Analysis of Several Nucleophilic Substitution Reactions
- 7.6 β -Elimination
- 7.7 Mechanisms of β -Elimination

Recommended additional problems

7.6 – 7.32