Organic Chemistry

EIGHTH EDITION

GLOBAL EDITION

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PEARSON

Brief Table of Contents

Complete List of In-Chapter Connection Features

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- Basics of Model Building
- Building and Recognizing Chiral Molecules
- Recognizing Chirality in Cyclic Molecules

Using the *E,Z* system to name alkenes was moved to Chapter 4, so now it appears immediately after using cis and trans to distinguish alkene stereoisomers.

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For additional practice on Interconverting Structural Representations, go to MasteringChemistry where the following tutorials are available:

- Interconverting Fischer Projections and Perspective Formulas
- Interconverting Perspective Formulas, Fischer Projections, and Skeletal Structures
- Interconverting Perspective Formulas, Fischer Projections, and Newman Projections

Catalytic hydrogenation and relative stabilities of alkenes were moved from Chapter 6 to Chapter 5 (thermodynamics), so they can be used to illustrate how $\Delta H°$ values can be used to determine relative stabilities.

All the reactions in Chapter 6 follow the same mechanism the first step is always addition of the electrophile to the sp^2 carbon bonded to the most hydrogens.

Chapter 8 starts by discussing the structure of benzene because it is the ideal compound to use to explain delocalized electrons. This chapter also includes a discussion of aromaticity, so a short introduction to electrophilic aromatic substitution reactions is now included. This allows students to see how aromaticity causes benzene to undergo electrophilic substitution rather than electrophilic addition—the reactions they have just finished studying.

Traditionally, electronic effects are taught so students can understand the directing effects of substituents on benzene rings. Now that most of the chemistry of benzene follows carbonyl chemistry, students need to know about electronic effects before they get to benzene chemistry (so they are better prepared for spectroscopy and carbonyl chemistry). Therefore, electronic effects are now discussed in Chapter 8 and used to teach students how substituents affect the pK_a values of phenols, benzoic acids, and anilinium ions. Electronic effects are then reviewed in the chapter on benzene.

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- Drawing Resonance Contributors: Moving π Electrons
- Drawing Resonance Contributors: Predicting Aromaticity
- Drawing Resonance Contributors: Substituted Benzene Rings

The two chapters in the previous edition on substitution and elimination reactions of alkenes have been combined into one chapter. The recent compelling evidence showing that secondary alkyl halides do not undergo S_N1 solvolysis reactions has allowed this material to be greatly simplified, so now it fits nicely into one chapter.

The discussion of palladium-catalyzed coupling reactions has been expanded, and the cyclic catalytic mechanisms are shown.

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- Curved Arrows in Radical Systems: Interpreting Curved Arrows
- Curved Arrows in Radical Systems: Drawing Curved Arrows
- Curved Arrows in Radical Systems: Drawing Resonance Contributors

Chapters 13 and 14 are modular, so they can be covered at any time.

The focus of the first chapter on carbonyl chemistry is all about how a tetrahedral intermediate partitions. If students understand this, then carbonyl chemistry becomes pretty straightforward. I found that the lipid materil that had been put into this chapter in the last edition detracted from the main message of the chapter. Therefore, the lipid material was removed and put into a new chapter exclusively about lipids.

PART SIX Aromatic Compounds 903

18 Reactions of Benzene and Substituted Benzenes 904

19 More About Amines • Reactions of Heterocyclic Compounds 960

PART SEVEN Bioorganic Compounds 985

New art adds clarity.

Increased emphasis on the connection between the reactions that occur in the laboratory and those that occur in cells.

The lipid material previously in the chapter on carboxylic acids and their derivatives has been moved into this new chapter. The discussion of terpenes from the metabolism chapter has also been moved into this chapter, along with some new material.