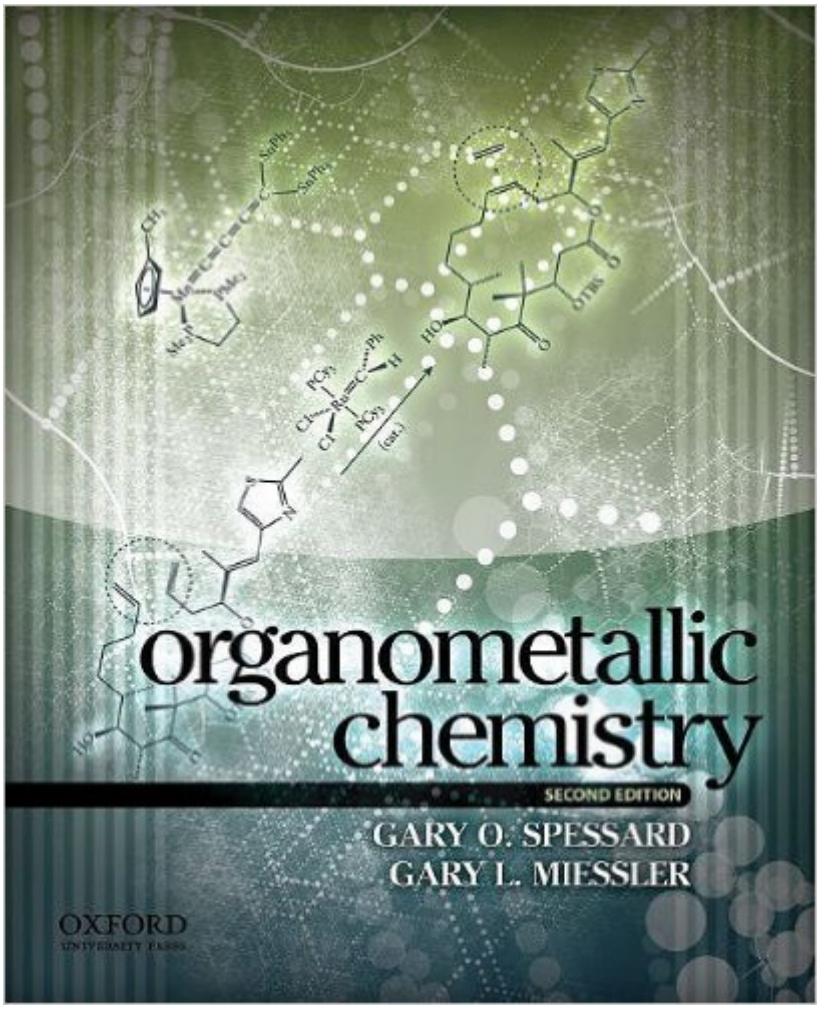
Organometallic Chemistry



Synopsis

Designed with the needs of both undergraduate and graduate students in mind, Organometallic Chemistry, Second Edition, covers the fundamentals of organometallic chemistry by presenting seminal experiments, analyzing real data, and offering the most comprehensive problem sets available. The text opens with careful and patient explanations of the structure and bonding of organometallic compounds, providing a uniquely accessible introduction to the subject for undergraduate students. Later chapters build on this foundation with in-depth coverage of organometallic reaction mechanisms, more advanced topics of catalysis, carbene complexes, metathesis, applications of organometallic chemistry to organic synthesis, and cluster compounds. FEATURES * Numerous in-chapter worked examples and expansive end-of-chapter problem sets. Covering a wide spectrum of difficulty, the end-of-chapter problems range from basic practice problems to more advanced analytical ones; many of these are directly referenced to the current chemical literature. * An experimental approach--illustrated by both groundbreaking classic experiments and cutting-edge contemporary ones-- that not only teaches students what is now known about organometallic chemistry, but also how we know what we know * Real-world applications--highlighted throughout the text-- that engage students and reveal the relevance of organometallic chemistry to the world of industry NEW TO THE SECOND EDITION * Updated and expanded coverage of the latest developments in the field, including IR, NMR, and mass spectroscopy; catalysis; carbene complexes; metathesis and polymerization; and applications to organic synthesis * More extensive treatments of industrial applications, including hydroformylation, uses of Grubbs and Schrock metal carbene catalysts, SHOP, palladium-catalyzed cross-couplings, and more * 50% more in-chapter worked examples and expansive end-of-chapter problem sets than the previous edition * 25% more in-chapter exercises (with answers in Appendix B) than the previous edition * A new focus on green chemistry that reveals how well its principles mesh with those of organotransition metal catalysis * Introduction of the 18-electron rule (Chapter 3) * New computational approaches to molecular orbital calculations (Chapter 2) * 25% more molecular model illustrations than the previous edition. The text now includes more than 600 illustrations and structures, including 120 brand-new figures; all preexisting figures have been revised for clarity and consistency. Organometallic Chemistry, Second Edition, is supplemented by an Instructor's Resource CD-ROM, which includes all of the figures from the text in electronic format and the solutions to all of the exercises and problems from the text (in an editable Word file format).

Book Information

Hardcover: 752 pages

Publisher: Oxford University Press; 2 edition (October 26, 2009)

Language: English

ISBN-10: 0195330994

ISBN-13: 978-0195330991

Product Dimensions: 9.3 x 1.3 x 7.7 inches

Shipping Weight: 2.4 pounds

Average Customer Review: 3.4 out of 5 starsÂ Â See all reviewsÂ (7 customer reviews)

Best Sellers Rank: #1,027,908 in Books (See Top 100 in Books) #194 inÂ Books > Science & Math > Chemistry > Inorganic #814 inÂ Books > Science & Math > Chemistry > Organic #2742 inÂ Books > Textbooks > Science & Mathematics > Chemistry

Customer Reviews

Very well written, though some more practice problems would be useful (not to mention a solutions manual...) THe book presents 18 electorn complexes and the like very well and gives many journals as back up references... Gives a great summary of organometallic reactions (CO insertion, Associative, Dissociative, etc) and a really solid and historically grounded intro to the field of catalysis... Clearly written, for the most part, but one section on the Trans effect is a bit ambigous, in the sense that they never really talk about HOW to use it... Sure they mention the idea, but they never address the leaving group... People always confused on that section... So that is my gripe in this otherwise excellent book...

This book is a wonderfully simple guide to organometallic chemistry. It is very easy to read making it a quick reference for inquiries. I would highly recommend this book to any beginning organometallic student.

This book is decently written. the first several chapters provide a background introduction into molecular orbital theory with subsequent chapters introducing various ligands and their behaviors in complexes, then reactions and catalytic cycles. unlike other chemistry books i own this one sources the original journal articles of some principal reactions used as examples- which can be helpful for those interested in looking up the original data. one complaint i have is that the book does not provide many examples of types of reactions, nor does it explain the exceptions to rules and why.

This is generally a good textbook. It is packed with information, and contains very few errors. My one problem with it is that, while it is packed with examples, it is a little light on theory.

Organometallic Reaction Mechanisms of the Nontransition Elements (Organometallic chemistry) Applied Organometallic Chemistry and Catalysis (Oxford Chemistry Primers) The Privileged Pincer-Metal Platform: Coordination Chemistry & Applications (Topics in Organometallic Chemistry) Introduction to Cluster Chemistry (Prentice Hall Inorganic and Organometallic Chemistry Series) Ace Organic Chemistry I: The EASY Guide to Ace Organic Chemistry I: (Organic Chemistry Study Guide, Organic Chemistry Review, Concepts, Reaction Mechanisms and Summaries) Ace General Chemistry I and II (The EASY Guide to Ace General Chemistry I and II): General Chemistry Study Guide, General Chemistry Review Ace General Chemistry I: The EASY Guide to Ace General Chemistry I: (General Chemistry Study Guide, General Chemistry Review) The Organometallic Chemistry of the Transition Metals Molecular Visions (Organic, Inorganic, Organometallic) Molecular Model Kit #1 by Darling Models to accompany Organic Chemistry Organometallic Chemistry The Organometallic Chemistry of the Transition Metals, 4th Edition Experimental Organometallic Chemistry: A Practicum in Synthesis and Characterization (ACS Symposium Series 357) Spectroscopic Methods in Organometallic Chemistry Silicon in Organic, Organometallic, and Polymer Chemistry Organometallic Chemistry and Catalysis Organometallic Reagents in Synthesis (Oxford Chemistry Primers) Inorganic and Organometallic Reaction Mechanisms (Brooks/Cole Series in Inorganic Chemistry) NMR in Organometallic Chemistry F. G. A. Stone: Leaving No Stone Unturned: Pathways in Organometallic Chemistry (Profiles, Pathways, and Dreams) Salt Effects in Organic and Organometallic Chemistry