

1. Record Nr.	UNINA9910830356103321
Titolo	Ruthenium in organic synthesis [[electronic resource] /] / Shun-Ichi Murahashi (Ed.)
Pubbl/distr/stampa	Weinheim ; ; [Great Britain], : Wiley-VCH, c2004
ISBN	1-280-52073-6 9786610520732 3-527-60383-2 3-527-60579-7
Descrizione fisica	1 online resource (401 p.)
Altri autori (Persone)	MurahashiShunichi <1937->
Disciplina	547.05632
Soggetti	Organometallic chemistry Organoruthenium compounds Ruthenium
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Ruthenium in Organic Synthesis; Contents; Preface; List of Contributors; 1 Introduction; 2 Hydrogenation and Transfer Hydrogenation; 2.1 Introduction; 2.2 Hydrogenation; 2.2.1 Unfunctionalized Olefins; 2.2.2 Functionalized Olefins; 2.2.3 Unfunctionalized Ketones and Aldehydes; 2.2.4 Functionalized Ketones; 2.2.5 Imines; 2.2.6 Others; 2.3 Transfer Hydrogenation; 2.3.1 Olefins; 2.3.2 Ketones and Aldehydes; 2.3.3 Imines; 2.3.4 Others; 2.4 Concluding Remarks; 3 Oxidation Reactions; 3.1 Introduction; 3.2 Dehydrogenative Oxidation; 3.2.1 Oxidation of Alcohols; 3.2.2 Oxidative Amination of Alcohols 3.2.3 Oxidation of Secondary and Primary Amines3.3 Oxidation with RuO(4); 3.4 Oxidation with Ruthenium Complex Catalysts and Oxidants; 3.4.1 Oxidation of Alcohols; 3.4.2 Oxidation of Alkenes; 3.4.3 Oxidation of Amines; 3.4.4 Oxidation of Amides and -Lactams; 3.4.5 Oxidation of Phenols; 3.4.6 Oxidation of Hydrocarbons; 3.5 Conclusions; 4 Carbon-Carbon Bond Formations via Ruthenacycle Intermediates; 4.1 Introduction; 4.2 C-C Bond Formations Involving Ruthenacyclopentadiene/Ruthenacyclopentatriene; 4.2.1 Alkyne

Cyclotrimerizations

4.2.2 Cyclocotrimerizations of Alkynes with Other Unsaturated Molecules and Related Reactions; 4.2.3 Miscellaneous Reactions; 4.3 C-C Bond Formations Involving Ruthenacyclopentene; 4.3.1 Coupling Reactions Between Alkynes and Alkenes; 4.3.2 Three-Component Couplings of Alkynes, Alkenes, and Other Unsaturated Molecules; 4.3.3 Intramolecular Coupling of Alkynes with Enones and Vinylcyclopropanes; 4.4 C-C Bond Formations Involving Ruthenacyclopentane; 4.5 C-C Bond Formations Involving Ruthenacyclopentenedione and Ruthenacyclobutenone; 4.6 Conclusion

5 Carbon-Carbon Bond Formation via π -Allylruthenium Intermediates

5.1 Introduction; 5.2 Synthesis, Structure, and Reactivity of π -Allylruthenium Complexes; 5.2.1 π -Allylruthenium(II) Complexes; 5.2.2 π -Allylruthenium(IV) Complexes; 5.2.3 π -Allylruthenium Clusters; 5.2.4 Reactivity and Catalytic Activity of $(\pi\text{-C}_3\text{H}_5)\text{Ru}(\text{CO})(3)\text{X}$ (X = Cl or Br); 5.3 Catalytic Reactions via π -Allylruthenium Intermediates; 5.3.1 C-C Bond Formation via π -Allylruthenium Intermediates; 5.3.2 Miscellaneous Reactions via π -Allylruthenium Intermediates; 6 Ruthenium-Catalyzed Olefin Metathesis; 6.1 Introduction

6.2 Ruthenium Olefin Metathesis Catalysts; 6.2.1 Mechanistic Considerations; 6.2.2 Case Study: Developing a Ruthenium-Carbene Catalyst for Acrylonitrile Metathesis; 6.3 Applications of Ruthenium-Catalyzed Olefin Metathesis in Organic Synthesis; 6.3.1 Ring-Closing Metathesis; 6.3.2 Cross Metathesis; 6.3.3 Combination Metathesis Processes; 6.4 Summary; 7 Ruthenium-Catalyzed Cyclopropanation; 7.1 Introduction; 7.2 Asymmetric Catalytic Cyclopropanation; 7.2.1 Styrene; 7.2.2 Other Olefins; 7.3 Non-Asymmetric Catalytic Cyclopropanation; 7.4 Carbene-Complexes and Mechanisms; 7.5 Conclusions

8 Nucleophilic Additions to Alkynes and Reactions via Vinylidene Intermediates

Sommario/riassunto

In this comprehensive book, one of the leading experts, Shun-Ichi Murahashi, presents all the important facets of modern synthetic chemistry using Ruthenium, ranging from hydrogenation to metathesis. In 14 contributions, written by an international authorship, readers will find all the information they need about this fascinating and extraordinary chemistry. The result is a high quality information source and a indispensable reading for everyone working in organometallic chemistry. From the contents: Introduction (S.-I. Murahashi) Hydrogenation and Transfer Hydrogenation (M. K