1. Record Nr. UNINA9910144327903321

Titolo	Modern organonickel chemistry [[electronic resource] /] / edited by Yoshinao Tamaru
Pubbl/distr/stampa	Weinheim [Germany], : Wiley-VCH, c2005
ISBN	1-280-51963-0 9786610519637 3-527-60484-7 3-527-60423-5
Descrizione fisica	1 online resource (349 p.)
Altri autori (Persone)	TamaruYoshinao <1945->
Disciplina	547.05625
Soggetti	Organonickel compounds Chemistry, Organic Electronic books.
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	Modern Organonickel Chemistry; Contents; Preface; List of Contributors; Abbreviations; 1 Introductory Guide to Organonickel Chemistry; 1.1 The Crystal Field; 1.2 Nickel has Wings: The Mond Method; 1.3 The Ligand Field; 1.4 The Formal Oxidation Number; 1.5 The 16- and 18-Electron Rule; 1.6 The Structure, Reactivity, and Electronic Configuration of Nickel-Complexes; 1.7 The Elementary Reactions; 1.7.1 Oxidative Addition; 1.7.2 Insertion; 1.7.3 Transmetallation; 1.7.4 Reductive Elimination; 1.7.5 -Hydrogen Elimination; 1.7.6 - and -Carbon Elimination (C-C Bond Cleavage) 1.8 Catalytic ReactionsReferences; 2 Nickel-catalyzed Cross-coupling Reactions; 2.1 Cross-coupling of Alkyl Electrophiles with Organometallic Compounds; 2.2 Cross-coupling of Alkenyl Electrophiles with Organometallic Compounds; 2.3 Cross-coupling of Allyl Electrophiles with Organometallic Compounds; 2.4 Cross-coupling of Aryl Electrophiles with Organometallic Compounds; 2.5 Asymmetric Cross-coupling Reactions; References; 3 Reaction of Alkenes and Allyl Alcohol Derivatives; 3.1 Hydrovinylation of Olefins; 3.2 Hydrocyanation of Olefins; 3.3 Heck-type Cyclization; 3.4 Olefin Insertion

3.5 Nickel-catalyzed Hydrozincation of Olefins3.6 Ni-catalyzed Addition of Organometallics to Electron-deficient Olefins; 3.6.1 The Reaction with Organometallics; 3.6.2 The Reaction with Organic Halides as Nucleophiles; 3.7 Polymerization of Ethylene and -Olefins using Ni (II)-based Catalysts; 3.8 The Nucleophilic Reactions of -Allylnickel Complexes; 3.9 -Allylnickel Complexes from Enones; 3.10 Carbonylative Cycloaddition of Allylic Halides and Acetylenes; 3.11 Nucleophilic Allylation Toward -Allylnickel Complexes; 3.11.1 Allylation with Grignard Reagents
3.11.2 Allylation with Soft Nucleophiles3.11.3 Regiochemical Control Based on Internal Chelation; 3.11.4 Organometallics other than Grignard Reagents for Allylation; 3.11.4.1 Ni-catalyzed Allylation with Lithium Borates Derived from Trimethyl Borate; 3.11.4.2 Allylation with Lithium Borates Derived from Acetylene; 3.11.4.3 Allylation with Borates Derived from Cyclic Boronate Esters; 3.11.5 The Design of Functionalized Reagents for Allylation; 3.11.6 Nickel-catalyzed Reactions of Cyclopentenyl Acetate and Borates
3.11.7 Synthetic Application of Nickel-catalyzed Reactions of Cyclopentenyl Acetate and Borates3.11.8 Extension of the Lithium Borate/Nickel Catalyst for Coupling with Alkenyl and Aryl Substrates; 3.12 Nickel Enolates; 3.12.1 Reactions of Ni(II) Complexes with Lithium or Potassium Enolates; 3.12.2 The Reformatsky-type Reaction; 3.12.3 Other Reactions through Nickel Enolates; References; 4 Reaction of Alkynes; 4.1 Hydrogenation; 4.2 Hydrometallation and Related Reactions; 4.2.1 Hydrosilylation and Hydrostannylation; 4.2.2 Hydroboration; 4.2.3 Hydroalumination
4.2.4 Miscellaneous: the Addition of H-P and H-S Groups

Sommario/riassunto

Organonickel chemistry plays an increasingly important role in organic chemistry, and interest in this topic is now just as keen as in organopalladium chemistry. While there are numerous, very successful books on the latter, a book specializing in organonickel chemistry is long overdue.Edited by one of the leading experts in the field, this volume covers the many discoveries made over the past 30 years, and previously scattered throughout the literature. Active researchers working at the forefront of organonickel chemistry provide a comprehensive review of the topic, including cross-coupli