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Nota di contenuto	Active Metals; Preface; Contents; List of Contributors; 1 Rieke Metals : Highly Reactive Metal Powders Prepared by Alkali Metal Reduction of Metal Salts; 1.1 Introduction; 1.1.1 Physical Characteristics of Highly Reactive Metal Powders; 1.2 Rieke Magnesium, Calcium, Strontium, and Barium; 1.2.1 Formation of Rieke Magnesium; 1.2.2 Formation of Rieke Calcium. Strontium. and Barium; 1.2.3 Grignard Reactions Using Rieke Metals; 1.2.4 1,3-Diene-Magnesium Reagents; 1.2.4.1 Preparation; 1.2. 4.2 Regioselectivity 1.2.4.3 Carbocyclization of (1,4-Diphenyl-2-butene-1,4-diyl) magnesium with Organic Dihalides1.2.4.4 1,2-Dimethylenecycloalkan e.Magnesium Reagents; 1.2.4.5 Synthesis of Fused Carbocycles, , - Unsaturated Ketones and 3-Cyclopentenols from Conjugated Diene- Magnesium Reagents; 1.2.4.6 Synthesis of Spiro -Lactones and Spiro -Lactones from 1,3-Diene-Magnesium Reagents; 1.2.4.7 Synthesis of

-Lactams from Conjugated Diene-Magnesium Reagents; 1.3 Rieke Zinc; 1.3.1 The Preparation of Rieke Zinc; 1.3.2 Direct Oxidative Addition of Functionalized Alkyl and Aryl Halides 1.3.3 Reactions of Organozinc Reagents with Acid Chlorides 1.3.4 Reactions of Organozinc Reagents with , -Unsaturated Ketones; 1.3.5 Reactions with Allylic and Alkynyl Halides; 1.3.6 Cross-Coupling of Vinyl and Aryl Organozinc Reagents Using a Palladium Catalyst; 1.3.7 Intramolecular Cyclizations and Conjugate Additions Mediated by Rieke Zinc; 1.3.8 Formation of Tertiary and Secondary Alkylzinc Bromides; 1.3.9 Cyanide-Based Rieke Zinc; 1.4 Organocopper Reagents Utilizing Rieke Copper; 1.4.1 Introduction; 1.4.2 Background to the Development of Rieke Copper; 1.4.3 Phosphine-Based Copper 1.4.4 Lithium 2-Thienylcyanocuprate-Based Copper 1.4.5 Copper Cyanide-Based Active Copper; 1.4.6 Two-Equivalent Reduction of Copper(I) Complexes : A Formal Copper Anion; 1.5 Rieke Aluminum, Indium, and Nickel; 1.5.1 Aluminum; 1.5.2 Indium; 1.5.3 Nickel; 1.6 Synthesis of Specialized Polymers and New Materials via Rieke Metals; 1.6.1 Formation of Polyarylenes Mediated by Rieke Zinc; 1.6.2 Regiocontrolled Synthesis of Poly(3-alkylthiophenes) and Related Polymers Mediated by Rieke Zinc; 1.6.3 Synthesis of Poly(phenylcarbyne) Mediated by Rieke Calcium, Strontium, or Barium 1.6.4 Chemical Modification of Halogenated Polystyrenes Using Rieke Calcium or Copper 1.6.5 Polymer Supported Rieke Metal Reagents and their Applications in Organic Synthesis; 2 Allylic Barium Reagents; 2.1 Introduction; 2.2 Preparation of Stereochemically Homogeneous Allylic Barium Reagents; 2.2.1 Direct Insertion Method Using Reactive Barium; 2.2.2 Stereochemical Stability; 2.2.3 Silylation of Stereochemically Homogeneous Allylic Barium Reagents; 2.2.3.1 Procedure for Generation of Reactive Barium ( $Ba^*$ ); 2.2.3.2 Procedure for Protonation of the Geranyl Barium Reagent 2.2.3.3 Silylation of (E)-2-Decenylbarium Chloride

## Sommario/riassunto

Reactions with metals are ubiquitous in organic synthesis and, particularly in the last few years, a large repertoire of methods for the activation of metals and for their use in organic synthesis has been developed. In Active Metals, topics ranging from morphology of metal clusters and nanometallurgy to organometallic chemistry, catalysis and the use of activated metals in natural product synthesis are authoritatively discussed by leading experts in the field. Active Metals will allow you to fully benefit from the recent advances in the field by giving: \* Detailed experimental p