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Nota di contenuto	Modern Carbonylation Methods; Contents; Preface; List of Contributors; 1 Bite Angle Effects of Diphosphines in Carbonylation Reactions; 1.1 Introduction; 1.2 Rhodium-Catalyzed Hydroformylation; 1.2.1 Introduction; 1.2.2 Steric Bite Angle Effect and Regioselectivity; 1.2.3 Electronic Bite Angle Effect and Activity; 1.2.4 Isotope Effects [24]; 1.3 Platinum-Catalyzed Alkene Hydroformylation; 1.4 Palladium-Catalyzed CO/Ethene Copolymerization; 1.4.1 Polyketone Formation; 1.4.2 Chain Transfer Mechanisms (Initiation-Termination); 1.4.3 Methyl Propanoate Formation; 1.4.4 Theoretical Support 1.5 Rhodium-Catalyzed Methanol Carbonylation: the Ligand-Modified Monsanto ProcessReferences; 2 Reactivity of Pincer Complexes Toward Carbon Monoxide; 2.1 Reactivity of CO with Pincer Complexes of the Group 10 (Ni, Pd, Pt); 2.1.1 Nickel; 2.1.2 Palladium and Platinum; 2.2 Reactivity of CO with Pincer Complexes of the Group 9 (Rh and Ir); 2.2.1 Rhodium; 2.2.2 Iridium; 2.3 Reactivity of CO with Pincer Complexes of the Group 8 (Fe, Ru, Os); 2.3.1 Iron; 2.3.2 Ruthenium; 2.3.3 Osmium; 2.4 Final Remarks; 2.5 Acknowledgements; References; 3 Enantioselective Carbonylation Reactions; 3.1 Introduction

3.2 Rhodium-Catalyzed Asymmetric Hydroformylation3.2.1 Introduction; 3.2.2 Catalytic Cycle and Mechanistic Highlights; 3.2.3 Diphosphite Ligands; 3.2.4 Phosphite-Phosphine Ligands; 3.2.5 Other Ligands; 3.3 Pd-catalyzed Asymmetric Hydroxy- and Alkoxy carbonylation Reactions; 3.3.1 Introduction; 3.3.2 Mechanism; 3.3.3 Bidentate Diphosphines; 3.3.4 Ferrocenyldiphosphines; 3.3.5 Hemilabile P-N Ligands; 3.3.6 Monodentate Ligands; 3.3.7 Asymmetric Bis-Alkoxy carbonylation of Alkenes; 3.4 Conclusion; References; 4 Microwave-Promoted Carbonylations; 4.1 Introduction 4.2 Microwave Heating in Organic Chemistry4.3 Microwave-Promoted Carbonylations; 4.3.1 Microwave-Promoted Carbonylations Using Mo (CO)(6) as a Source of Carbon Monoxide; 4.3.2 Microwave-Promoted Carbonylations Using Co(2)(CO)(8) as a Reaction Mediator; 4.3.3 Microwave-Promoted Carbonylations Using the Solvent as a Source of Carbon Monoxide; 4.3.4 Microwave-Promoted Carbonylations Using Reaction Vessels Prepressurized with Carbon Monoxide; 4.4 Conclusion; References; 5 Recent Advances in Two-Phase Carbonylation; 5.1 Introduction; 5.2 Carbonylation Reactions; 5.2.1 Hydroformylation 5.2.2 Hydroaminomethylation5.2.3 Hydroesterification (hydroalkoxy carbonylation) and Related Reactions; 5.2.4 Amidocarbonylation and Cyclocarbonylation; 5.3 Methodology and Stability of Catalysts; 5.4 Innovative Concepts for Catalyst Separation in Biphasic Homogeneous Catalysis; References; 6 Catalytic Carbonylations in Ionic Liquids; 6.1 Introduction; 6.2 Brief History; 6.3 Hydroformylation; 6.3.1 Classical Rh and Pt Phosphines Catalyst Precursors; 6.3.2 Ionic Liquids, Catalyst Recycle, Selectivity, and Product Separation; 6.3.3 Pt-Sn and Ru Catalyst Precursors; 6.4 Aryl Halides and Alcohols 6.5 Carbonylation of Amines

Sommario/riassunto

Comprehensively covering modern carbonylation chemistry, this book is an indispensable companion for all synthetic chemists working in industry and academia. This monograph contains everything there is to know from recent advances in the investigation of carbonylation catalysts, via coordination chemistry to the synthetic application of transition metal catalyzed carbonylations.