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4.4.3 Cyclic phosphoramidites based on amino alcohols

Sommario/riassunto

"Over the last 60 years the increasing knowledge of transition metal chemistry has resulted in an enormous advance of homogeneous catalysis as an essential tool in both academic and industrial fields. Remarkably, phosphorus(III) donor ligands have played an important role in several of the acknowledged catalytic reactions. The positive effects of phosphine ligands in transition metal homogeneous catalysis have contributed largely to the evolution of the field into an indispensable tool in organic synthesis and the industrial production of chemicals.This book aims to address the design and synthesis of a comprehensive compilation of P(III) ligands for homogeneous catalysis. It not only focuses on the well-known traditional ligands that have been explored by catalysis researchers, but also includes promising ligand types that have traditionally been ignored mainly because of their challenging synthesis.Topics covered include ligand effects in homogeneous catalysis and rational catalyst design, P-stereogenic ligands, calixarenes, supramolecular approaches, solid phase synthesis, biological approaches, and solubility and separation.Ligand families covered in this book include phosphine, diphosphine, phosphite, diphosphite, phosphoramidite, phosphonite, phosphinite, phosphole, phosphinine, phosphinidenene, phosphaalkenes, phosphaalkynes, P-chiral ligands, and cage ligands.Each ligand class is accompanied by detailed and reliable synthetic procedures. Often the rate limiting step in the application of ligands in catalysis is the synthesis of the ligands themselves, which can often be very challenging and time consuming. This book will provide helpful advice as to the accessibility of ligands

as well as their synthesis, thereby allowing researchers to make a more informed choice.Phosphorus(III) Ligands in Homogeneous Catalysis: Design and Synthesis is an essential overview of this important class of catalysts for academic and industrial researchers working in catalyst development, organometallic and synthetic chemistry"--