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Nota di contenuto	Liquid Phase Oxidation via Heterogeneous Catalysis: Organic Synthesis And Industrial Applications; Contents; Preface; Contributors; Abbreviations; 1 Environmentally Benign Oxidants; 1.1 Introduction; 1.2 Oxygen (Air); 1.3 Alkylhydroperoxides; 1.4 Hydrogen Peroxide; 1.5 Conclusions; References; 2 Oxidation Reactions Catalyzed by Transition-Metal-Substituted Zeolites; 2.1 Introduction; 2.2 Synthesis and Characterization of Zeolites; 2.2.1 Isomorphous Metal Substitution; 2.2.2 Synthesis of Titanium Silicalite-1 (TS-1); 2.2.3 Characterization of Titanium Silicalite-1 (TS-1) 2.2.4 Ti-Beta, Synthesis and Characterization2.2.5 Other Ti Zeolites; 2.2.6 Other Metal Zeolites; 2.3 Catalytic Properties; 2.3.1 Hydroxylation of Alkanes; 2.3.2 Hydroxylation of Aromatic Compounds; 2.3.3 Oxidation of Olefinic Compounds; 2.3.4 Oxidation of Alcohol and Ether Compounds; 2.3.5 Reactions of Carbonyl Compounds; 2.3.6 Oxidation of N-Compounds; 2.3.7 Oxidation of S-Compounds; 2.4 Mechanistic Aspects; 2.4.1 The Nature of Active Species; 2.4.2 Hydroxylation; 2.4.3

Epoxidation; 2.4.4 Oxidation of Alcohols; 2.4.5 Ammonium; 2.4.6 Decomposition of Hydrogen Peroxide
2.4.7 Active Species, Adsorption and Catalytic Activity2.5 Stability of Metal-Substituted Zeolites to Reaction Conditions; 2.6 Conclusions; References; 3 Selective Catalytic Oxidation over Ordered Nanoporous Metallo-Aluminophosphates; 3.1 Introduction; 3.2 Synthesis; 3.2.1 Microporous Aluminophosphates; 3.2.2 Mesoporous Aluminophosphates; 3.3 Characterization; 3.4 Catalytic Properties; 3.4.1 Oxidation of Hydrocarbons; 3.4.2 Oxidation of Olefins; 3.4.3 Oxidation of Alcohols; 3.4.4 Oxidation of Phenols; 3.4.5 Ammonium and Ammonium; 3.4.6 Baeyer-Villiger Oxidation 3.4.7 Oxidation of Heterocycles3.5 Mechanistic Aspects; 3.6 Catalysts Stability; 3.7 Conclusion; References; 4 Selective Oxidations Catalyzed by Mesoporous Metal Silicates; 4.1 Introduction; 4.2 Synthesis and Characterization; 4.2.1 General Synthetic Approaches; 4.2.2 Characterization Techniques; 4.2.3 Sol-Gel Synthesis of Amorphous Mixed Oxides; 4.2.4 Thermolytic Molecular Precursor Method; 4.2.5 Templated Synthesis of Ordered Metal Silicates; 4.2.6 Postsynthesis Modifications; 4.2.7 Organic-Inorganic Hybrid Materials; 4.3 Catalytic Properties; 4.3.1 Oxidation of Alkanes
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5.3 Catalytic Properties

Sommario/riassunto

Sets the stage for environmentally friendly industrial organic syntheses From basic principles to new and emerging industrial applications, this book offers comprehensive coverage of heterogeneous liquid-phase selective oxidation catalysis. It fully examines the synthesis, characterization, and application of catalytic materials for environmentally friendly organic syntheses. Readers will find coverage of all the important classes of catalysts, with an emphasis on their stability and reusability. Liquid Phase Oxidation via Heterogeneous Catalysis features contributions
