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Nota di contenuto	Metal Carbenes in Organic Synthesis; Table of Contents; Abbreviations; Experimental Procedures; 1 The Carbon-Metal Double Bond; 1 1 Reactivity of Carbene Complexes; 1.2 Fischer-Type and Schrock-Type Carbene Complexes: Theoretical Treatment; 1.3 Olefin Metathesis and Olefin Cyclopropanation; 1.4 Characteristic NMR Data; 2 Heteroatom-Substituted Carbene Complexes; 2.1 Generation of Heteroatom-Substituted Carbene Complexes; 2.1.1 From Acyl Complexes; 2.1.1.1 From Acyl Complexes Generated from Carbonyl Complexes; 2.1.1.2 From Acyl Complexes Generated from Metallates 2.1.1.3 From Acyl Complexes Generated by Other Methods2.1.2 From Isonitrile Complexes; 2.1.3 From a-Haloiminium Salts and Metallates; 2.1.4 From Carboxamides and Metallates; 2.1.5 From Vinylidene Complexes; 2.1.5.1 From Vinylidene Complexes Generated from Alkynes; 2.1.5.2 From Vinylidene Complexes Generated from Alkynyl Complexes; 2.1.6 From Carbenes and Carbenoids; 2.1.7 From Alkyl Complexes by a-Abstraction; 2.1.8 From Carbyne Complexes; 2.1.9 Other Methods; 2.2 Synthetic Applications of Heteroatom-Substituted Carbene Complexes; 2.2.1 General Considerations

2.2.2 Demetallation and Formation of Acyclic Products2.2.3 Photochemical Transformations; 2.2.4 Cyclopropanation; 2.2.5 Thermal Benzannulations; 2.2.5.1 The Dotz Benzannulation Reaction; 2.2.5.2 Other Thermal Benzannulations; 2.2.6 Formation of Five-Membered Rings; 2.2.6.1 Cyclization of (1,3-Butadien-1-yl)carbene Complexes; 2.2.6.2 Cyclization of Functionalized Carbene Complexes; 2.2.6.3 Rearrangement of Ammonium Ylides; 2.2.6.4 Other Methods; 2.2.7 Formation of Six-Membered. Non-Aromatic Carbocycles and Six-Membered Heterocycles; 2.2.8 Formation of Seven-Membered Rings 3 Non-Heteroatom-Substituted Carbene Complexes3.1 Generation of Non-Heteroatom-Substituted Carbene Complexes; 3.1.1 a-Abstraction of Electrophiles (Nucleophilic Abstraction); 3.1.2 a-Abstraction of Nucleophiles (Electrophilic Abstraction); 3.1.2.1 a-Abstraction of Hydride; 3.1.2.2 a-Abstraction of Oxygen-Bound Leaving Groups; 3.1.2.3 a-Abstraction of Thioethers; 3.1.2.4 a-Abstraction of Halides; 3.1.3 From Ylides; 3.1.3.1 From Diazoalkanes; 3.1.3.2 From Other Ylides; 3.1.4 From Carbyne Complexes; 3.1.4.1 Nucleophilic Additions to Carbyne Complexes
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Sommario/riassunto

There are hardly more versatile compounds in organic synthesis than carbene complexes. The rapid development of new synthetic methods involving carbene complexes - stereoselective cyclopropanation, carbonyl olefination, olefin metathesis, etc. - reveals the value and high potential of these compounds. Their application ranges from the synthesis of fine chemicals to polymer production.This comprehensive, well structured handbook presents the fundamental principles and the recent advances in carbene complex chemistry. Arranged according to structure and reactivity, all relevant classes