

Houben-Weyl Volume E21: Table of Contents

Volume E 21a

Part A. General Aspects

1. Nomenclature and Vocabulary of Organic Stereochemistry, G. Helmchen
2. Basic Principles of EPC Synthesis, J. Mulzer
3. Determination of Enantiomeric Purity
 - 3.1. Direct Methods, V. Schurig
 - 3.2. Formation of Diastereomers, W. Lindner, G. Uray
4. Determination of Absolute and Relative Configuration
 - 4.1. Nuclear Magnetic Resonance Methods (Relative Configuration), H. Duddeck
 - 4.2. X-ray and Neutron Diffraction Methods, G. Maas
 - 4.3. Chemical Methods, P. Welzel
 - 4.4. Chiroptical Methods, J. Gawronski

Part B. Synthesis of Axially Chiral Compounds

1. Allenes, C. J. Elsevier
2. Biaryls, G. Bringmann, R. Walter, R. Weirich

Part C.

Synthesis of Chiral Compounds by Bond Disconnection, H.-J. Gais

Part D.

Synthesis of Chiral Compounds by Bond Formation

1. Formation of C—C Bonds
 - 1.1. Alkylation Reactions
 - 1.1.1. Chiral Nucleophiles, H. Ahlbrecht, T. Norin, G. Fráter, H.-E. Högberg, L.S. Liebeskind, J.S. McCallum, P. Fey, W. Hartwig, G. Solladié
 - 1.1.2. Chiral Electrophiles, D.S. Matteson, P. Duhamel
 - 1.1.3. Chiral Additives, J.M. Brown
 - 1.2. Insertion into C—H Bonds, D.F. Taber

Volume E 21b

- 1.3. Addition to Carbonyl Groups (C=O)
 - 1.3.1. Sigma-Type Organometallic Compounds, R.M. Devant, H.-E. Radunz
 - 1.3.2. Benzyl-Type Organometallic Compounds, D. Hoppe
 - 1.3.3. Allyl-Type Organometallic Compounds, D. Hoppe, W.R. Roush, E.J. Thomas
 - 1.3.4. Enolates, M. Braun, L.S. Liebeskind, J.S. McCallum, W.-D. Fessner
 - 1.3.5. Azaenolates or Nitronates, P. Fey, W. Hartwig
 - 1.3.6. Metalated Sulfoxides or Sulfoximides, G. Solladié
 - 1.3.7. Enzyme-Catalyzed Hydrocyanation, F. Effenberger, T. Ziegler
- 1.4. Addition to Imino Groups (C=N)
 - 1.4.1. Sigma-Type Organometallic Compounds, N. Risch, M. Arend
 - 1.4.2. Allylic and Allenic Organometallic Compounds, N. Risch, M. Arend
 - 1.4.3. Enolates and Related Compounds, N. Risch, M. Arend
 - 1.4.4. Strecker and Ugi Reactions, H. Kunz

- 1.4.5. *N*-Acyliminium Ion Additions, W.N. Speckamp, H. de Koning
- 1.5. Reactions Involving Olefinic Double Bonds
 - 1.5.1. Vinylogous Substitution Reactions, Y. Yamamoto
 - 1.5.2. Addition to Alpha,Beta-Unsaturated Carbonyl Compounds (Michael-Type Additions), Y. Yamamoto, S.G. Pyne, D. Schinzer, B.L. Feringa, J.F.G.A. Jansen
 - 1.5.3. Addition to Olefinic Double Bonds; Enamines, Nitroalkenes, 4,5-Dihydrooxazoles, Alpha,Beta-Unsaturated Sulfoxides, Sulfoximines, S.G. Pyne

Volume E 21c

- 1.5.4. Addition of Free Radicals, B. Giese, T. Göbel, B. Kopping, H. Zipse
- 1.5.5. Addition of Carbenium Ions to Olefinic Double Bonds and Allylic Systems, U. Nubbemeyer
- 1.5.6. Allylic Substitutions Catalyzed by Transition Metal Complexes, P. Metz, T. Lübbers
- 1.5.7. Hydroboration of Olefinic Double Bonds, M. Zaidlewicz
- 1.5.8. Addition to Olefinic Double Bonds Catalyzed by Transition Metals, P. Eilbracht
- 1.6. Pericyclic Reactions
 - 1.6.1. Cycloadditions, J. Jurczak, T. Bauer, C. Chapuis, D. Craig, M. Cinquini, F. Cozzi, W. Sander, P. Binger, D. Fox, B.B. Snider, J. Mattay, R. Conrads, H.-U. Reißig
 - 1.6.2. Ene Reaction, J.K. Whitesell

Volume E 21d

- 1.6.3. Sigmatropic Rearrangements and Electrocyclic Reactions, H. Frauenrath, J. Kallmerten, J.M. Takacs, L. Pelter
2. Formation of C—H Bonds
 - 2.1. Protonation of Organometallic Compounds, Enolates and Nitronates, S. Hünig
 - 2.2. Radical Reactions, B. Giese, A. Ghosez, T. Göbel, H. Zipse
 - 2.3. Reduction of Carbonyl Groups (C=O)
 - 2.3.1. Hydrogenation, H. Brunner
 - 2.3.2. Reduction with Metals, H.M.R. Hoffmann, A.M. El Khawaga
 - 2.3.3. Reduction with Metal Hydrides, A.P. Davis, M.M. Midland, L.A. Morell
 - 2.3.4. Hydrosilylation and Subsequent Hydrolysis, A.P. Davis, H. Brunner
 - 2.3.5. Reduction with C—H Hydride Donors, M.M. Midland, L.A. Morell, K. Krohn
 - 2.3.6. Enzyme-Catalyzed and Biomimetic Reductions, M. Gottwald
 - 2.4. Reduction of Imino Groups (C=N), J. Martens
 - 2.5. Reduction of Olefinic Double Bonds
 - 2.5.1. Hydrogenation, U. Kazmaier, J.M. Brown, A. Pfaltz, P.K. Matzinger, H.G.W. Leuenberger

- 2.5.2. Hydroboration and Hydroalumination, M. Zaidlewicz
- 2.6. [1,*n*] Sigmatropic Rearrangements, D. Hasselmann
3. Formation of C—Hal Bonds, R. Bohlmann

Volume E 21e

4. Formation of C—O Bonds
 - 4.1. Oxygenation of Enolates, F.A. Davis, B.-C. Chen
 - 4.2. Hydroboration of Olefinic Double Bonds Followed by Oxidation, M. Zaidlewicz
 - 4.3. Hydrosilylation of Olefinic Double Bonds Followed by Oxidation, A.P. Davis
 - 4.4. 1,2-Dihydroxylation of Olefinic Double Bonds, C. Scolastico, G. Poli
 - 4.5. Epoxidation of Olefinic Double Bonds, R. Schwesinger, J. Willaredt, T. Bauer, A.C. Oehlschlager
 - 4.6. Cyclization onto Olefinic Double Bonds Forming Lactones and Ethers, G. Cardillo, M. Orena, D. Savoia
 - 4.7. Conjugate Addition of O-Nucleophiles, A. Berkessel
 - 4.8. Microbial Insertion of Oxygen into C—H Bonds, K. Petzoldt
 - 4.9. Allylic Oxidation with Singlet Molecular Oxygen, A.G. Griesbeck, W. Adam
 - 4.10. Allylic Oxidation with Selenium Dioxide, W.-D. Woggon
 - 4.11. Sigmatropic Rearrangements, K. Ritter
5. Formation of C—S Bonds, M. Mikolajczyk, J. Drabowicz, P. Kielbasinski
6. Formation of C—Se or C—Te Bonds, M. Mikolajczyk, J. Drabowicz, P. Kielbasinski
7. Formation of C—N Bonds
 - 7.1. Electrophilic Amination, G. Boche
 - 7.2. Addition to Olefinic Double Bonds, G. Cardillo, M. Orena, D. Savoia
 - 7.3. Conjugate Addition of N-Nucleophiles, K. Drauz, M. Schäfer, M. Schwarm
 - 7.4. Allylic Substitution Catalyzed by Palladium Complexes, P. Metz
 - 7.5. Allylic Amination, J.K. Whitesell
 - 7.6. Sigmatropic Rearrangements, K. Ritter
8. Formation of C—P Bonds, M. Mikolajczyk, J. Drabowicz, P. Kielbasinski
9. Formation of C—Si Bonds, M. Mikolajczyk, J. Drabowicz, P. Kielbasinski
10. Formation of C—Sn Bonds, M. Mikolajczyk, J. Drabowicz, P. Kielbasinski

Volume E 21f

Appendix Survey of Chiral Auxiliaries, Solvents, Reagents and Catalysts, R. Herrmann

Author Index
Subject Index