

SOME INFORMATION SOURCES FOR ORGANIC SYNTHESIS

An excellent single-volume reference tool of considerable scope, *Vogel's Textbook of Practical Organic Chemistry (QD271 V87 1989)* encompasses the theory and practice of many topics in synthetic organic chemistry. The following titles offer a more rigorous, comprehensive coverage of particular synthetic aspects.

Other subject-specific or survey-oriented works may contain the information you need.

Reference Tool	Size/Scope	Arrangement of Compounds	Information Provided	Indexes, Special Features
(1) Organic Syntheses QD262 O68 Physical Sciences REF	<ul style="list-style-type: none"> • 68 volumes in 1990; 7 Collective Volumes cover v. 1-9, 10-19, etc. • "An annual publication of satisfactory methods for the PREPARATION OF ORGANIC CHEMICALS." 	<ul style="list-style-type: none"> • No specific order in annual volumes; alphabetically by compound name in Collective Volumes 	<ul style="list-style-type: none"> • Fully detailed, double-checked synthetic procedures for organic compounds; notes and literature references to past procedures; product properties, toxicity warnings, precautions. 	<ul style="list-style-type: none"> • Separate Cumulative Index to Collective Volumes 1-5 • Each annual volume has author and compound indexes; cumulative volumes include a formula index • Cumulative <i>Reaction Guide</i> in preparation
(2) Fieser's Reagents for Organic Synthesis ("Fieser & Fieser") QD262 F46 Physical Sciences REF	<ul style="list-style-type: none"> • 15 vols. in 1990, each updating and supplementing those previous. • The preparation and uses of REAGENTS IN ORGANIC SYNTHESIS. 	<ul style="list-style-type: none"> • Alphabetically by common and IUPAC names. 	<ul style="list-style-type: none"> • Industrial suppliers; molecular weight; melting, boiling points; literature references for preparation if not supplied in detail; recent applications of reagents in synthesis. 	<ul style="list-style-type: none"> • Entries are cross referenced to previous Fieser volumes • Author, subject, reagent type indexes in each volume. • Cumulative Index to volumes 1-12 published in mid-1990
(3) Theilheimer's Synthetic Methods of Organic Chemistry QD262 T37 Physical Sciences Stacks	<ul style="list-style-type: none"> • 44 volumes (1990); a thorough index of SYNTHETIC ORGANIC METHODOLOGIES 	<ul style="list-style-type: none"> • A formal symbolic arrangement of reactions by (a) bond type, (b) reaction type, and (c) bonds broken or elements eliminated. 	<ul style="list-style-type: none"> • Brief summaries of experimental details and synthetic methodologies, with literature references for each; cross references to previous Theilheimer volumes. 	<ul style="list-style-type: none"> • Cumulative indexes every 5 volumes • Extensive keyword (reaction title, "name" reaction) index in each volume includes compound classes, functional groups
(4) Organic Reactions QD262 O62 Physical Sciences Stacks	<ul style="list-style-type: none"> • 38 volumes in 1990. • A compilation of critical discussions of single "NAME" OR TYPE REACTIONS from a preparatory viewpoint. 	<ul style="list-style-type: none"> • Each chapter discusses a specific topic; no order in choice of topics. 	<ul style="list-style-type: none"> • Literature reviews; lengthy tables of published examples; some illustrative experimental details. 	<ul style="list-style-type: none"> • Volumes have cumulative author, subject, and chapter/topic indexes. • Chronological list of chapter titles from Vol. 1 to present.
((5) Methoden der Organischen Chemie, 4th ed. (Houben-Weyl) QD258 H83 1952 Physical Sciences REF	<ul style="list-style-type: none"> • 16 volumes with numerous supplements • Synthetic methods for organic, biological, organo-metallic cmpds.; analytical and physical methods 	<ul style="list-style-type: none"> • By compound class; further divisions according to functional groups present. 	<ul style="list-style-type: none"> • Synthetic methods; specific experimental details; literature references; tables of published examples. 	<ul style="list-style-type: none"> • Published in German, with liberal use of structural formulae • Author, subject, various compound indexes
(6) Comprehensive Organic Transformations QD262 L32 C7 Physical Sciences REF	<ul style="list-style-type: none"> • "A guide to FUNCTIONAL GROUP PREPARATIONS." • A single-volume compilation of useful SYNTHETIC ORGANIC METHODOLOGIES. 	<ul style="list-style-type: none"> • According to the functional group synthesized. Further subdivision by the major chemical process used. 	<ul style="list-style-type: none"> • Lengthy tables of specific examples, including substrates, reagents/catalysts, and literature references. ("Colloquial" abbreviations used; see Abbreviations guide, pp. xxix-xxxiv) 	<ul style="list-style-type: none"> • Transformation Index arranged by compound class • "Obscure" or generally unavailable journal sources avoided • Authors, percent yields omitted • Protecting-group, heterocyclic, and low-yield chemistry generally omitted

Reference Tool	Size/Scope	Arrangement of Compounds	Information Provided	Indexes, Special Features
(7) Chemistry of Heterocyclic Compounds QD400 C5 Physical Sciences Stacks	<ul style="list-style-type: none"> • 47 volumes (1990), with numerous supplements • Heterocyclic compounds of all types 	<ul style="list-style-type: none"> • Each volume/part deals with a specific class of heterocycles. 	<ul style="list-style-type: none"> • Reviews of synthetic procedures, with references to original literature; many tables of published work arranged by functional group 	<ul style="list-style-type: none"> • Author, subject indexes in each volume.
(8) Rodd's Chemistry of Carbon Compounds QD251 R68 1964 Physical Sciences REF	<ul style="list-style-type: none"> • 4 'volumes,' numerous supplements to each volume (1990 suppl. complete the 2nd edition) 	<ul style="list-style-type: none"> • By four compound classes -- aliphatic, alicyclic, aromatic, and heterocyclic compounds; supplements are further divided into subclasses. 	<ul style="list-style-type: none"> • Reviews of general synthetic methods, compound classes, and natural product studies; literature references; some specific experimental details provided. 	<ul style="list-style-type: none"> • Combined subject and class index in each supplement.
(9) Comprehensive Organic Chemistry QD411 C73 Physical Sciences REF	<ul style="list-style-type: none"> • 6 volumes; vol. 6 is index • "Reflecting the current rapid development of modern organic chemistry" (except theory) 	<ul style="list-style-type: none"> • Each volume deals with several broad aspects or topics ("Stereochemistry," "Nitrogen Compounds," "Biological Compounds," etc.) 	<ul style="list-style-type: none"> • General discussions of methodology and compound classes, with literature references to published examples and review articles 	<ul style="list-style-type: none"> • Formula, subject, author, reaction type, and reagent indexes. Some indexes include additional literature references not presented in the text.
(10) Comprehensive Organometallic Chemistry QD411 C73 1982 Physical Sciences REF	<ul style="list-style-type: none"> • 9 volumes; vol. 9 is index • Current methods involving organometallic chemistry and compounds. 	<ul style="list-style-type: none"> • Grouped by central metal, then by compound class. 	<ul style="list-style-type: none"> • General discussions of methodology and compound classes, with literature references to published examples and review articles. 	<ul style="list-style-type: none"> • Formula, author, structure, and review articles indexes. Some indexes include additional literature references not presented in the text.
(11) Comprehensive Heterocyclic Chemistry QD400 C73 Physical Sciences REF	<ul style="list-style-type: none"> • 8 volumes; vol. 8 is index • Basic principles, properties, chemistry, synthesis of heterocyclic systems. 	<ul style="list-style-type: none"> • Arranged according to heterocyclic atom frequencies and ring sizes. 	<ul style="list-style-type: none"> • General discussions of methodology and compound classes, with literature references to published examples and review articles. 	<ul style="list-style-type: none"> • Subject, author, physical data, and ring indexes. Some indexes include additional literature references not presented in the text.
(12) The Chemistry of Functional Groups Series VARIOUS CALL NOS. Physical Sciences Stacks Patai's Guide to the Chemistry of Functional Groups QD251.2 P29 Physical Sciences REF	<ul style="list-style-type: none"> • "A series of advanced treatises under the general editorship of Prof. Saul Patai." • >60 volumes and supplements (1990). The Guide is a "chapter-by-chapter account of all the material published in the various volumes of the Series" from 1964-1988. 	<ul style="list-style-type: none"> • Each volume deals with a particular functional group, e.g. "alkenes," "the ether linkage," "diazonium and diazo groups." Search by title "Chemistry of [functional group name]." • Chapters arranged by (a) general and theoretical aspects; (b) formation of the group; (c) its characterization and characteristics; (d) its reactions and transformations; (e) special topics. • To use the Guide, see Section A, p.3. 	<ul style="list-style-type: none"> • "All aspects of the chemistry of one of the important functional groups in organic chemistry." • Reviews, literature references • The Guide provides: volume titles; principal parts of Tables of Contents, including authors and pagination; brief subject descriptions; and the time period covered by references. It also includes cross-references to "complementary" and "relevant" material in other volumes. 	<ul style="list-style-type: none"> • Author, subject indexes in each volume. • The Guide provides Author and Chapter/Subject (keyword-based) indexes.

Other useful synthetic survey works of general scope include:

(13) Annual Reports in Organic Synthesis QD262 A61 Physical Sciences Stacks	<ul style="list-style-type: none"> • Since 1970, an annual review of synthetically useful information. • 46 journals chosen in 1989 	<ul style="list-style-type: none"> • By selected primary reaction types or methods; subdivisions focus on more specific compound classes, reaction types, bonds, or functional groups 	<ul style="list-style-type: none"> • Structural summary with literature references; very few text comments 	<ul style="list-style-type: none"> • Author index • No Subject index, but extensive Table of Contents
(14) Compendium of Organic Synthetic Methods QD262 H31 Physical Sciences REF	<ul style="list-style-type: none"> • 6 volumes in 1990 • Three-year reviews of FUNCTIONAL GROUP TRANSFORMATION literature 	<ul style="list-style-type: none"> • Primarily by functional groups formed in the products; further divided according to class of the starting materials. <i>See "Introduction" sections of each volume.</i> 	<ul style="list-style-type: none"> • Structural summary with literature references; very few text comments 	<ul style="list-style-type: none"> • Cross-tables locating entries by section and page numbers precede Introduction sections.

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