eros encyclopedia of reagents for organic synthesis

eros encyclopedia of reagents for organic synthesis is an essential resource for chemists and researchers involved in organic synthesis. This comprehensive reference work provides detailed information about reagents, their applications, mechanisms, safety profiles, and practical considerations in laboratory settings. Whether you are a seasoned professional or a student just starting in the field, understanding how to utilize and select the right reagent is crucial for successful organic transformations. This article explores the structure, content, and practical value of the eros encyclopedia of reagents for organic synthesis, diving into its organization, key features, and benefits. You will learn about the types of reagents covered, how to navigate the encyclopedia's entries, and how it supports decision-making and innovation in organic chemistry. By the end, you'll have an authoritative overview of why this encyclopedia remains a cornerstone reference in modern organic synthesis.

- Overview of the eros encyclopedia of reagents for organic synthesis
- Organization and Structure of the Encyclopedia
- Types of Reagents and Their Applications
- Key Features and Benefits for Researchers
- Practical Use in Organic Synthesis
- Recent Updates and Editions
- Expert Tips for Maximizing the Encyclopedia's Value

Overview of the eros encyclopedia of reagents for organic synthesis

The eros encyclopedia of reagents for organic synthesis is a definitive reference work that systematically catalogs thousands of reagents used in organic chemistry. Its primary purpose is to provide chemists with up-to-date, practical, and reliable information about reagents and their roles in various organic transformations. Developed by leading experts in the field, the encyclopedia serves both as a teaching tool and a practical guide for laboratory professionals. Its extensive content includes information about reagent selection, mechanism of action, compatibility, safety protocols, and alternative options, making it indispensable for anyone engaged in organic synthesis research or production.

The encyclopedia stands out for its depth, accuracy, and clarity. Each reagent entry contains chemical structures, physical and chemical properties, examples of synthetic applications, and references to original literature. Updated editions ensure that new reagents and contemporary methods are continually added, reflecting the dynamic nature of organic chemistry. As organic synthesis evolves, the eros encyclopedia remains a trusted resource for navigating the complex landscape of chemical reagents.

Organization and Structure of the Encyclopedia

Alphabetical Arrangement of Entries

The eros encyclopedia of reagents for organic synthesis arranges its entries alphabetically, making it easy to locate specific reagents quickly. Each entry provides the reagent’s common name, IUPAC name, and structural formula. This logical structure ensures that users can efficiently access information, whether searching for a well-known compound or exploring novel reagents.

Content Sections in Each Entry

Each reagent entry is systematically organized to provide thorough details. The typical format includes:

- Synonyms and Nomenclature
- Chemical Structure and Formula
- Physical and Chemical Properties
- Preparation Methods
- Applications in Organic Synthesis
- Mechanism of Action
- Safety and Handling Precautions
- References to Scientific Literature

This consistent format helps researchers compare reagents and make informed decisions during synthetic planning.

Cross-Referencing and Indexes

To further support usability, the encyclopedia includes cross-referencing features and comprehensive indexes. These additions enable users to find related reagents, reaction types, or synthetic techniques efficiently. The index covers reagent names, reaction categories, and even application areas such as oxidation, reduction, protection, and deprotection.

Types of Reagents and Their Applications

Categories of Reagents Covered

The eros encyclopedia of reagents for organic synthesis encompasses a vast array of reagent classes, reflecting the diversity of organic chemistry. Common categories include:

- Oxidizing Agents
- Reducing Agents
- Acids and Bases
- Protecting Groups
- Coupling Agents
- Solvents and Catalysts
- Deprotection Reagents
- Functional Group Interconversion Agents

Each category is explored in depth, with representative examples and detailed mechanisms.

Notable Examples and Synthetic Applications

The encyclopedia highlights reagents such as sodium borohydride, lithium aluminum hydride, Grignard reagents, and various catalytic systems. Detailed entries discuss their roles in key synthetic transformations, including reductions, oxidations, cross-coupling reactions, and selective functional group manipulation. Case studies provide real-world examples of reagent use in pharmaceutical synthesis, natural product chemistry, and industrial processes.

Key Features and Benefits for Researchers

Comprehensive and Up-to-Date Information

One of the main strengths of the eros encyclopedia of reagents for organic synthesis is its commitment to comprehensive coverage and current data. Updated regularly, the encyclopedia integrates new reagents and emerging synthetic techniques, ensuring relevance to modern research. Its accuracy and attention to detail make it a trusted authority for chemists worldwide.

Practical Guidance and Safety Information

Safety is a top priority in organic synthesis, and the encyclopedia includes robust safety profiles for each reagent. Users benefit from guidelines on handling hazardous materials, recommended storage conditions, first aid measures, and disposal protocols. These sections help chemists maintain safe laboratory practices and comply with regulatory requirements.

Decision Support for Synthesis Planning

By providing comparative data and mechanistic insights, the encyclopedia assists researchers in selecting the most suitable reagent for a given transformation. This decision support extends to

evaluating reagent compatibility, environmental impact, and cost-effectiveness, promoting efficiency and innovation in synthesis planning.

Practical Use in Organic Synthesis

Laboratory Applications and Protocols

The eros encyclopedia of reagents for organic synthesis is used daily by laboratory professionals to design and optimize synthetic routes. Protocol examples and application notes accompany reagent entries, illustrating best practices and troubleshooting tips. The encyclopedia also supports scale-up processes and industrial applications, providing guidance on batch reactions, continuous flow methods, and process safety.

Educational Value for Students and Instructors

In academic settings, the encyclopedia serves as a foundational teaching tool, introducing students to reagent selection, synthetic strategy, and chemical safety. Instructors use it to develop curricula, laboratory manuals, and research assignments, fostering a deeper understanding of organic synthesis principles.

Reference for Literature and Patent Research

Researchers conducting literature reviews or patent searches rely on the encyclopedia’s extensive references and bibliographic data. It provides direct links to primary sources, enabling users to verify experimental procedures and access further reading on reagent development and application.

Recent Updates and Editions

Expansion of Reagent Coverage

Recent editions of the eros encyclopedia of reagents for organic synthesis have expanded coverage to include newly developed reagents, catalytic systems, and environmentally friendly alternatives. The inclusion of green chemistry reagents and sustainable processes reflects current trends in organic synthesis.

Integration of Digital Formats

Modern versions of the encyclopedia are available in print and digital formats, offering advanced search capabilities, interactive content, and regular online updates. This flexibility enhances accessibility, allowing researchers to consult the encyclopedia from laboratory benches, offices, or remote locations.

Collaboration with Leading Chemists

Editorial teams collaborate with renowned chemists, ensuring that the encyclopedia reflects the latest developments and expert opinions. Contributions from global researchers increase the breadth and depth of content, maintaining the encyclopedia’s status as a leading reference in organic chemistry.

Expert Tips for Maximizing the Encyclopedia’s Value

Efficient Search Strategies

To maximize the benefits of the eros encyclopedia of reagents for organic synthesis, users should

utilize its indexes and cross-referencing tools. Searching by reaction type, reagent class, or application area streamlines information retrieval and supports efficient research.

Comparative Analysis of Reagents

Comparing multiple reagents for a single transformation can reveal differences in selectivity, yield, and safety. The encyclopedia's side-by-side data presentation enables chemists to make informed choices and optimize synthetic outcomes.

Staying Informed About Updates

Researchers are encouraged to consult new editions and online updates regularly. Staying informed about recently added reagents and evolving methodologies ensures that laboratory practices remain current and competitive.

Questions & Answers about eros encyclopedia of reagents for organic synthesis

Q: What is the eros encyclopedia of reagents for organic synthesis?

A: The eros encyclopedia of reagents for organic synthesis is a comprehensive reference work that catalogs thousands of reagents used in organic chemistry, providing detailed information on their properties, applications, mechanisms, and safety.

Q: Who uses the eros encyclopedia of reagents for organic synthesis?

A: Organic chemists, researchers, teachers, students, and industry professionals use the encyclopedia

to guide reagent selection, understand synthetic mechanisms, and ensure safe laboratory practices.

Q: What types of reagents are covered in the encyclopedia?

A: The encyclopedia covers oxidizing agents, reducing agents, acids, bases, protecting groups, coupling agents, solvents, catalysts, and many more classes of reagents relevant to organic synthesis.

Q: How frequently is the encyclopedia updated?

A: The eros encyclopedia of reagents for organic synthesis is updated regularly to include new reagents, synthetic methods, and safety protocols, often incorporating the latest research and developments in organic chemistry.

Q: Can students benefit from using the encyclopedia?

A: Yes, students gain foundational knowledge about reagent properties, applications, and safety, making the encyclopedia an essential educational tool in academic chemistry programs.

Q: Does the encyclopedia include safety information for reagents?

A: Every reagent entry includes safety and handling precautions, helping users maintain safe laboratory environments and comply with regulatory standards.

Q: Are digital versions of the encyclopedia available?

A: Yes, modern editions are offered in digital formats with advanced search capabilities, interactive features, and regular online updates.

Q: How does the encyclopedia help in synthesis planning?

A: The encyclopedia provides comparative data, mechanistic insights, and practical examples, supporting informed decisions when designing and optimizing synthetic routes.

Q: What makes the eros encyclopedia of reagents for organic synthesis unique?

A: Its comprehensive scope, authoritative content, systematic organization, and continuous updates make it a leading reference for organic chemists worldwide.

Q: Is the encyclopedia suitable for industrial and pharmaceutical research?

A: Absolutely, the encyclopedia is widely used in industrial and pharmaceutical settings to guide reagent selection, scale-up processes, and ensure compliance with safety and quality standards.

Eros Encyclopedia Of Reagents For Organic Synthesis

The Eros Encyclopedia of Reagents for Organic Synthesis: Your Ultimate Guide

Are you a chemist struggling to navigate the vast landscape of organic reagents? Do you spend hours searching for the optimal reagent for your specific reaction, sifting through countless papers and databases? Then you need the Eros Encyclopedia of Reagents for Organic Synthesis. This

comprehensive resource is a game-changer, and this blog post will delve into its features, benefits, and how to effectively utilize it to streamline your research and enhance your synthetic capabilities. We'll explore its structure, content, and practical applications, ultimately showing you why it's an indispensable tool for any organic chemist.

What is the Eros Encyclopedia of Reagents for Organic Synthesis?

The Eros Encyclopedia of Reagents for Organic Synthesis (EROS) is a widely acclaimed, meticulously curated online database dedicated to providing detailed information on a vast array of reagents used in organic chemistry. It's far more than just a list; it's a detailed compendium offering critical data, reaction examples, safety precautions, and handling procedures for each reagent. Think of it as a highly organized, expertly vetted, and constantly updated library dedicated solely to the world of organic synthesis reagents.

Key Features and Benefits of Utilizing EROS

EROS stands out from other reagent databases due to several key features:

1. Comprehensive Coverage: The encyclopedia boasts an extensive collection of reagents, covering a broad spectrum of functionalities and reaction types. This breadth ensures that researchers working on diverse projects can readily find the information they need.

2. Detailed Information: For each reagent, EROS provides far more than just a chemical name and formula. It includes detailed characterization data, including spectral information (NMR, IR, MS), physical properties (melting point, boiling point, solubility), and importantly, detailed safety and handling instructions.

3. Reaction Examples: Understanding how a reagent behaves in different reaction contexts is crucial. EROS provides numerous reaction examples, often with mechanisms illustrated, which helps users grasp the reagent’s reactivity and potential applications within different synthetic strategies.

4. Searchable and User-Friendly Interface: Navigating the vast database is made easy thanks to a well-designed, intuitive interface. The robust search functionality allows for quick retrieval of information using various criteria – chemical name, CAS registry number, structure, or even keywords describing the desired reactivity.

5. Regularly Updated: The scientific landscape is constantly evolving. EROS is continuously updated, ensuring the information provided is current and reflects the latest advances in reagent development and applications. This commitment to staying up-to-date is critical for researchers aiming for accuracy and efficiency.

How to Effectively Utilize the Eros Encyclopedia

Maximizing the benefits of EROS requires a strategic approach:

1. Defining your Needs: Before diving into the database, clearly define the specific reaction you're aiming to perform and the desired transformation. Identifying the functional groups involved and the type of reaction will significantly streamline your search.

2. Utilizing the Search Functionality: Experiment with different search terms, combining chemical names, CAS numbers, and keywords that describe the desired reactivity. The more precise your search terms, the more targeted your results will be.

3. Critical Evaluation of Results: While EROS is highly reliable, always critically evaluate the information provided. Cross-reference the data with other reputable sources to ensure accuracy and consistency. Pay particular attention to safety guidelines and handling procedures.

4. Understanding the Context: Don’t just focus on the reagent’s properties; carefully examine the provided reaction examples to understand how the reagent behaves in various reaction conditions. This will help you choose the optimal conditions for your synthesis.

Conclusion

The Eros Encyclopedia of Reagents for Organic Synthesis is an indispensable tool for any organic chemist. Its comprehensive coverage, detailed information, user-friendly interface, and regular updates make it a significant advantage for researchers at all levels. By mastering its use, chemists can significantly improve their efficiency, reduce research time, and enhance the success rate of their synthetic endeavors. The ability to quickly access crucial information on reagent properties, safety, and reactivity ultimately translates to safer and more efficient synthetic work.

FAQs

1. Is EROS a free resource? No, EROS is typically accessed through institutional subscriptions. Individual subscriptions may also be available but typically come at a higher cost.

2. How often is EROS updated? EROS is updated regularly, although the specific frequency may not be publicly stated. New reagents and updated information are added continuously.

3. Can I access EROS on mobile devices? Many versions offer responsive design, allowing for access and use on various devices, including mobile phones and tablets. However, the level of functionality may vary depending on the access platform.

4. What types of reactions are covered in EROS? EROS covers a vast range of organic reactions, encompassing virtually all common transformations used in organic synthesis.

5. Does EROS provide information on reagent purification? While not always explicitly stated as a separate section, relevant details pertaining to purification techniques and requirements for a particular reagent are often included within the broader description and characterization data available for each entry.

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eros encyclopedia of reagents for organic synthesis: Essential Reagents for Organic Synthesis Philip L. Fuchs, André B. Charette, Tomislav Rovis, Jeffrey W. Bode, 2016-09-06 From Boron Trifluoride to Zinc, the 52 most widely used reagents in organic synthesis are described in this unique desktop reference for every organic chemist. The list of reagents contains classics such

as N-Bromosuccinimide (NBS) and Trifluoromethanesulfonic Acid side by side with recently developed ones like Pinacolborane and Tetra-n-propylammonium Perruthenate (TPAP). For each reagent, a concise article provides a brief description of all important reactions for which the reagent is being used, including yields and reaction conditions, an overview of the physical properties of the reagent, its storage conditions, safe handling, laboratory synthesis and purification methods. Advantages and disadvantages of the reagent compared to alternative synthesis methods are also discussed. Reagents have been hand-picked from among the 5000 reagents contained in EROS, the Encyclopedia of Reagents for Organic Synthesis. Every organic chemist should be familiar with these key reagents that can make almost every reaction work.

eros encyclopedia of reagents for organic synthesis: Catalytic Oxidation Reagents Philip L. Fuchs, 2013-07-29 The Handbook is part of the Handbook of Reagents for Organic Chemistry series, aiming at collecting articles on a particular theme that individual researchers in academia or industry can use on a daily basis. The Handbook starts with a section discussing the most important aspects of heteroarene functionalization. The introduction is followed by the alphabetical listing of the most relevant reagents drawn from the EROS database. The Editor, André Charette from the University of Montreal, has selected 120 reagent descriptions, many of them updated with heteroarene-specific reactions for this Handbook. Following the standard format for EROS, each article contains an overview of the synthesis and physical properties of the reagents or catalyst, conditions for its storage, and purification methods. Given the importance of heteroarenes in biology and especially in medicinal chemistry, a Handbook that focuses exclusively on heteroarene functionalization has been long overdue. This Handbook will have a broad appeal to many individuals engaged in the area of medicinal chemistry, fine chemical synthesis and industrial-scale chemistry. Key features: Builds on the success of the previously published Handbooks of Reagents for Organic Synthesis Compares the numerous new C-H functionalization reactions that have been developed in the past decade Heteroarene functionalization is widely used in the development of pharmaceuticals and other bioactive compounds Contains listings of secondary reagents for which more information is available in the online edition

eros encyclopedia of reagents for organic synthesis: *Solvents as Reagents in Organic Synthesis* Xiao-Feng Wu, 2018-01-03 Written by highly renowned and experienced authors, this is the only reference on the application of solvents as reagents. Clearly structured, the text describes various methods for the activation and reaction of these small molecules, highlighting the synthetic opportunities as well as process-oriented advantages. To this end, all relevant types of solvents are covered separately and emphasized with numerous synthetic examples, while taking care to explain applications so as to avoid undesired side reactions. The result is a unique resource for every synthetic chemist and reaction engineer in industry and academia working on the methodical optimization of synthetic transformations.

eros encyclopedia of reagents for organic synthesis: Organic Synthesis with Carbohydrates Geert-Jan Boons, Karl J. Hale, 2008-04-15 Carbohydrates offer a ready source of enantiomerically pure starting materials. They have been used for the imaginative synthesis of a wide range of compounds, and have been found to be effective chiral auxiliaries which enable the introduction of a range of functionalities in a highly enantioselective manner. In a subject dominated by volumes at research and professional level, this book provides a broad understanding of the use of carbohydrates in organic synthesis, at postgraduate student level. Emphasis is placed on retrosynthetic analysis, with discussion of why a particular synthetic route has been chosen, and mechanistic explanations are provided for key and novel reactions. Wherever possible, the authors highlight points of general significance to organic synthesis. Selected experimental conditions and reaction details are incorporated to ensure that information can be utilised in research. The book is extensively referenced and so provides a convenient point of entry to the primary literature.

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eros encyclopedia of reagents for organic synthesis: Handbook of Reagents for Organic Synthesis André B. Charette, 2017-06-26 The Handbook is a compilation of 99 articles on diverse reagents and catalysts that describe the synthesis of heteroarenes, the building blocks of a wide range of chemicals used in pharma and chemical industries. Articles are selected from the e-EROS database and edited to make sure that it includes only the material relevant to the topic of the book and focus on the synthetic aspects. This makes the articles very focused on the needs of readers wanting information on specific syntheses of specific heteroarenes. In addition, the chemistry of each parent heteroarene is also included to ensure that the reader rapidly finds important information. The Handbook is a part of the Handbook of Reagents for Organic Chemistry series, aiming at collecting articles on a particular theme that individual researchers in academia or industry can use on a daily basis.

eros encyclopedia of reagents for organic synthesis: Reagents for Glycoside, Nucleotide, and Peptide Synthesis David Crich, 2005-10-21 This handbook collects together short, informative articles on approximately 250 of the most widely used reagents in the field, into a single volume. Each of the articles, drawn from the e-EROS database, contains a summary of the most pertinent reactions for every reagent, with references to the original literature. This handbook will have a broad appeal and should find a home in every organic chemistry laboratory and library. Compiles all the essential reagents for syntheses on and with biomolecules Gives key information on protection, bond formation and deprotection An essential resource for all synthetic chemists working in drug development and medicinal chemistry Makes use of the leading reagent database e-EROS

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eros encyclopedia of reagents for organic synthesis: Wiley Database of Polymer Properties J. Brandrup, 2002-04-15 Comprehensive source of physical property data for polymers commercially available, with experimentally determined and selected data for over 2,500 polymers. The initial content is derived from the Polymer Handbook. The database will be updated quarterly. Search features include the ability to search for polymers matching specific properties or ranges of properties, the ability to create custom tables for all the properties of a specific polymer, and the ability to access the full-text html for references to the primary literature via CrossRef.

eros encyclopedia of reagents for organic synthesis: *Reagent Chemicals* American Chemical Society. Committee on Analytical Reagents, 1968

eros encyclopedia of reagents for organic synthesis: Reduction with Complex Metal Hydrides Norman G. Gaylord, 1956

eros encyclopedia of reagents for organic synthesis: *Silicon in Organic Synthesis* Ernest W. Colvin, 2013-10-22 Silicon in Organic Synthesis provides an introduction to the organic chemistry of silicon. This book places particular emphasis on the concept of silicon as a ferryman, mediating the transformation of one wholly organic molecule into another. The book begins by reviewing the discovery and development of organosilicon compounds. This is followed by separate chapters on the physical properties of organosilicon compounds; the preparation of a-metallated organosilanes, which play a key role in preparative organosilicon chemistry; migration/rearrangement reactions of silicon; the preparation and chemistry of vinylsilanes, allylsilanes, arylsilanes, and organosilyl metallic compounds. Subsequent chapters cover the synthesis of compounds such as alkene, alkynylsilanes, allenylsilanes, silylketenes, alkyl silyl ethers, acyloxysilanes, and silyl enol ethers. This book aims to serve as a timely introduction to organic chemistry for students and practitioners of synthetic organic chemistry, as well as provide a source of useful information and possibly of new ideas to those already experienced in the area.

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eros encyclopedia of reagents for organic synthesis: *Purification of Laboratory Chemicals* W.L.F. Armarego, 2003-03-07 Now in its fifth edition, the book has been updated to include more detailed descriptions of new or more commonly used techniques since the last edition as well as remove those that are no longer used, procedures which have been developed recently, ionization constants (pKa values) and also more detail about the trivial names of compounds.In addition to having two general chapters on purification procedures, this book provides details of the physical properties and purification procedures, taken from literature, of a very extensive number of organic, inorganic and biochemical compounds which are commercially available. This is the only complete source that covers the purification of laboratory chemicals that are commercially available in this manner and format.* Complete update of this valuable, well-known reference* Provides purification procedures of commercially available chemicals and biochemicals* Includes an extremely useful compilation of ionisation constants

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eros encyclopedia of reagents for organic synthesis: Organofluorine Chemistry Kalman J. Szabo, Nicklas Selander, 2021-03-22 By presenting novel methods for the efficient preparation of fluorinated compounds and their application in pharmaceutical and agrochemical chemistry as well as medicine, this is a valuable source of information for all researchers in academia and industry!

eros encyclopedia of reagents for organic synthesis: *The Diels-Alder Reaction* Francesco Fringuelli, Aldo Taticchi, 2002-01-21 70 Jahre Forschung an der Diels-Alder-Reaktion: Dieses Buch fasst die wichtigsten und beeindruckendsten Ergebnisse in einzigartiger Weise zusammen! Zunächst werden die Grundprinzipien der Reaktion klar und verständlich anhand übersichtlicher Graphiken erläutert. Spezielle Vorschriften und gegebenenfalls ihre industrielle Umsetzung werden anschließend erklärt. Einen Schwerpunkt bilden auch physikalische und katalytische Verfahren zur Steigerung der Selektivität der Reaktion. Cycloadditionen in konventionellen und unkonventionellen Medien werden vorgestellt. Mit über 1.000 Literaturverweisen!

eros encyclopedia of reagents for organic synthesis: *Knovel Critical Tables* Knovel Corporation, 2003

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eros encyclopedia of reagents for organic synthesis: Reagents for Organic Synthesis Louis F. Fieser, Mary Fieser, Janice G. Smith, Tse-Lok Ho, 1968

eros encyclopedia of reagents for organic synthesis: Gold Catalysis: An Homogeneous Approach Veronique Michelet, Francisco Dean Toste, 2014-06-20 Research on designing new catalytic systems has been one of the most important fields in modern organic chemistry. One reason for this is the predominant contribution of catalysis to the concepts of atom economy and green chemistry in the 21st century. Gold, considered catalytically inactive for a long time, is now a fascinating partner of modern chemistry, as scientists such as Bond, Teles, Haruta, Hutchings, Ito and Hayashi opened new perspectives for the whole synthetic chemist community. This book presents the major advances in homogeneous catalysis, emphasizing the methodologies that create carbon-carbon and carbon-heteroatom bonds, the applications that create diversity and synthesize natural products, and the recent advances and challenges in asymmetric catalysis and computational research.It provides readers with in-depth information about homogeneous gold-catalyzed reactions and presents several explanations for the scientific design of a catalyst. Readers will be able to understand the entire gold area and find solutions to problems in catalysis.Gold Catalysis — An Homogeneous Approach is part of the Catalytic Science Series and features prominent authors who are experts in their respective fields.

eros encyclopedia of reagents for organic synthesis: Strategies and Tactics in Organic Synthesis Michael Harmata, 2004-11-03 This title provides a forum for investigators to discuss their approach to the science and art of organic synthesis in a unique way. There are stories that vividly demonstrate the power of the human endeavour known as organic synthesis and the creativity and tenacity of its practitioners.

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organotitanium compounds described in the current and older literature (e. g. , Ziegler-Natta type catalysts) has been reported by polymer, inorganic and theoretical chemists. It is summarized in Chapter 2 of this book, because some aspects are useful in understanding reactivity and selectivity of organo titanium compounds in organic synthesis as described in the chapters which follow.

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eros encyclopedia of reagents for organic synthesis: Handbook of Chemoinformatics Johann Gasteiger, 2003 The new discipline of chemoinformatics covers the application of computer-assisted methods to chemical problems such as information storage and retrieval, the prediction of physical, chemical or biological properties of compounds, spectra simulation, structure elucidation, reaction modeling, synthesis planning and drug design. ... this four-volume Handbook contains in-depth contributions from top authors from around the world, with the content organized into chapters dealing with the representation of molecular structures and reactions, data types and databases/data sources, search methods, methods for data analysis as well as applications--Back cover.

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