

Science of Synthesis

Reference Work
in Synthetic Organic Chemistry

OTBDMS



1 reference work

A truly authoritative online resource, Science of Synthesis offers comprehensive and in-depth coverage of synthetic organic chemistry. This work is designed to be the first point of reference for chemists searching for reliable synthetic methods and covers all fields of organic synthesis. The electronic version currently contains over 28 000 synthetic methods and over 250 000 reactions for some 2 700 different types of compounds.

Science of Synthesis focuses on the most effective and reliable methods for functional group transformations and imparts essential reviews as well as detailed experimental procedures.



Always up-to-date

The Editorial Board, together with the volume editors and authors, is constantly reviewing the whole field of synthetic organic chemistry as presented in Science of Synthesis and evaluating significant developments in synthetic methodology. A list of strict criteria for method selection guides the updating process in order to guarantee that only the best and most reliable synthetic methods are included in Science of Synthesis. Authors who are renowned specialists in their respective fields revise the existing content and add new methods and product (sub)classes. Four annual releases updating content across all categories ensure that you always have access to state-of-the-art synthetic methodology.

With a high average update rate of 5% per year, Science of Synthesis continues to be the most up-to-date evaluated electronic reference work available, emphasizing the most significant developments in synthetic methodology.

The fullscreen view of the table of contents is available by using the red button in the top left hand corner of each frame.



All methods are organized in a hierarchical system based on the compound or functional group to be synthesized.

Science of Synthesis by topic – the Reference Library

The Science of Synthesis Reference Library, a specialist topic reference work series, is part of and complements the topics of Science of Synthesis.

The Reference Library features the best and most reliable methods in a special field and highlights new angles and perspectives of importance in organic synthesis. All special topics are fully integrated with Science of Synthesis and are part of the subscription.

Reference Library topics:

2010

- Reagents: Oxidation
- Reagents: Reduction

Stereoselective Synthesis

- Stereoselective Reactions of Carbon–Carbon Double Bonds (Editor: Johannes G. de Vries)
- Stereoselective Reactions of Carbonyl and Imino Groups (Editor: Gary A. Molander)
- Stereoselective Pericyclic Reactions, Cross Coupling, C–H and C–X Activation (Editor: P. Andrew Evans)

2011

- Water in Organic Synthesis (Editor: Shu Kobayashi)
- Asymmetric Organocatalysis (two Volumes, Editors: Benjamin List, Keiji Maruoka)

Upcoming topics will be announced at www.thieme-chemistry.com.

Electronic Interface

The electronic version of Science of Synthesis has been developed under the guidance of an international advisory board, each of whom is a leading expert in electronic information provision.



Co-operation with InfoChem has ensured the use of the latest

developments in information technology and the availability of a powerful and user-friendly information-retrieval system for searching.

The screenshot shows the Science of Synthesis web interface. On the left is a hierarchical table of contents under 'Organometallics' and 'Heterocycles'. The main area displays 'Scheme 4 Tautomerism of Pyridazines' with chemical structures 4A, 4B, 5A, 5B, and 6A, 6B, 6C. Below the scheme is a text block discussing spectroscopic properties and references. At the bottom, there is a table header for 'Table 2 ¹H NMR Data of Some Pyridazines'. Red arrows from the text above point to specific interface elements: 'Tile frames' points to the table of contents, 'Print: multiple documents' points to a print icon, 'Browse' points to a browse icon, and 'Print: single documents' points to another print icon.

Intuitive Navigation

Users may browse through Science of Synthesis using the hierarchical table of contents in the left hand frame. The frame tiling buttons allow the user to view both the table of contents and the full text side-by-side, or either frame in fullscreen for comfortable reading. Further exploration is facilitated by the browse command, which downloads successive documents as if the user were leafing through the pages of a book. Extensive cross-linking allows smooth navigation between Science of Synthesis and related content in the Houben–Weyl archive. In addition links from each citation enable fast access to the original research literature.

Printing

Science of Synthesis offers high-quality printing to deliver a hard copy for convenience in the lab. The print-out contains high-resolution graphics embedded in the document. Users can print individual documents using the print command in the document frame. Printing of multiple documents is possible with a single click of the mouse directly from the table of contents.

Sophisticated Search Functionality

Science of Synthesis features a sophisticated search engine for fast and precise information retrieval. The hundreds of thousands of reactions in Science of Synthesis can be searched by exact structure, substructure, and reaction. The user has a choice of three popular structure drawing tools and the ability to upload Molfiles from a local disk. Reaction searches can be refined by product yield, solvent, and reaction temperature for greater specificity. Other powerful search fields include full text, name reactions, and CAS registry number. All citations are searchable by author, publication, and year.

The Query form, Hitlist, and Full Text can be viewed in parallel for ease of use and quick cross-checking of search results and hit documents.

Searching in Science of Synthesis

Today's chemists need reference works to be readily available, practical, and reliable. Science of Synthesis offers the user access to a vast quantity of evaluated information all on one electronic platform. This 21st century reference work combines new developments with established and proven methods, making it truly the most comprehensive reference work in terms of coverage available today.

Searching for a synthesis of Valium

The search demonstrated on the right hand side highlights some of the key features and functions available when using Science of Synthesis.

Open the draw window by clicking on the Draw button in the Search interface.

Use the drawing tools to draw the structure of interest.

Transfer the structure back to the Search interface using the transfer button and begin the search using the Search button.

The hits are listed as single step reactions. To view a document simply click on the citation or the single-step reaction.

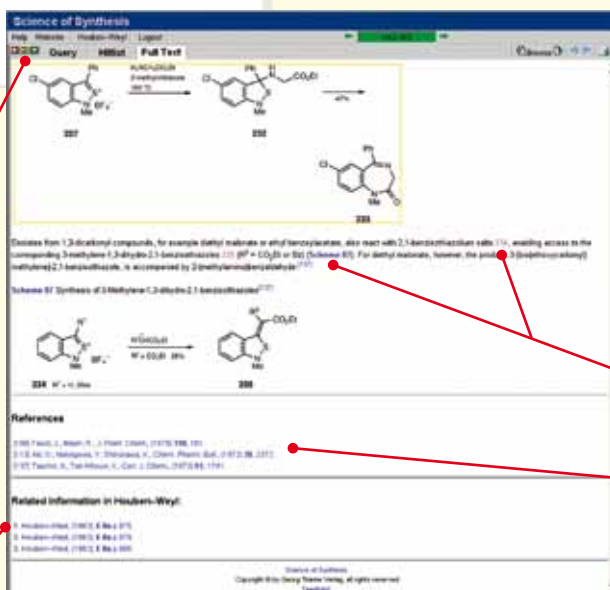
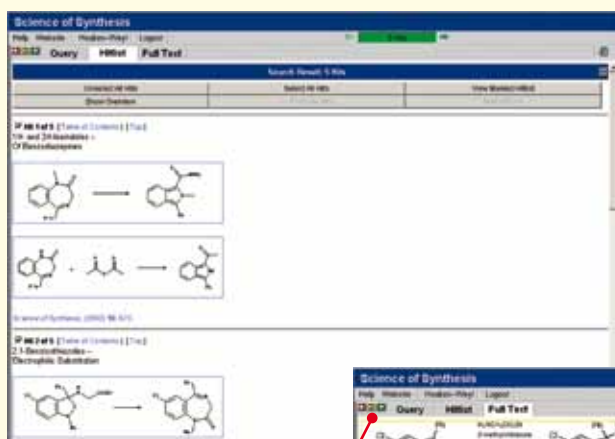
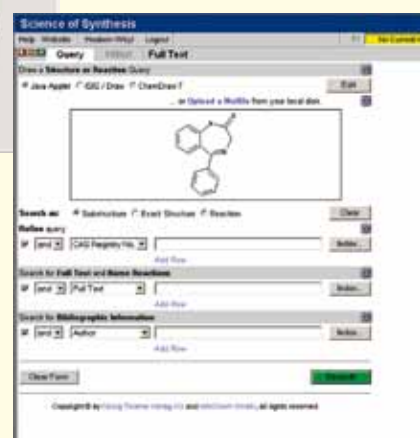
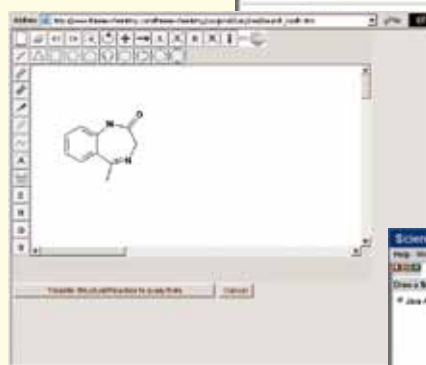
The fullscreen view of the document is available by using the green button in the top left hand corner of each frame.

The final search result is displayed with the sections of the document that are pertinent to the search highlighted in yellow.

Links to relevant documents in the electronic backfile are listed at the bottom of the document.

Internal cross-referencing within a contribution or volume is fully supported within Science of Synthesis.

Moreover, links to databases and electronic journals are also supported by CrossRef and FIZ AutoDoc.



100 years of synthetic organic chemistry

The methods in Science of Synthesis are complemented by additional material contained in a unique electronic backfile, including every volume ever published in the Houben–Weyl series between 1909 and 2003. The backfile contains 146 000 experimental procedures with 580 000 structures and 700 000 references that

cover synthetic knowledge stretching back to the early 1800s. All Houben–Weyl documents are available in pdf format and can be searched in conjunction with Science of Synthesis and independently via a search of the table of contents or for a name reaction.

Science of Synthesis documents are linked to related information in the electronic backfile, providing access to robust and reliable methods.

The screenshot displays the Science of Synthesis interface. On the left, the 'Table of Contents' lists various categories such as Organometallics, Heteroarenes, and Compounds with Four and Three Carbon-Heteroatom Bonds. The main content area shows a search for 'THPO' with a chemical structure and a procedure for the formation of C-C bonds by addition to α,β -unsaturated carbonyl compounds. The procedure involves the use of a Grignard reagent (CH₂=CHMg) and a phosphine oxide (P(OEt)₃). The right side of the interface shows a search query with 'No Current Hits' and a list of related information in the Houben–Weyl series, including a reference to Houben–Weyl (1995), E 21b p.2041.

1 000 authors who are leading experts in their fields

Under the guidance of an international Editorial Board composed of distinguished chemists with unparalleled experience, over 1 000 authors are contributing to Science of Synthesis and the Reference Library. They are following the latest developments in organic synthesis in their daily work, review all the literature of relevance, and include the most reliable and effective methods in Science of Synthesis. The contributions are presented in the form of highly evaluated digests for each field and special topic of synthetic organic chemistry.



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1909

Houben–Weyl

Full text resource providing 146 000 trusted experimental procedures

Illustrated by 580 000 structures

Linked by 700 000 reference citations to the most relevant primary literature

2000

Science of Synthesis

First point of reference covering all fields of organic synthesis from the most modern perspective

Constantly updated (4 releases per year, 5% update rate)

Providing 23 000 significant experimental procedures

Illustrated by 250 000 reactions and 1 000 000 structures

2010

Science of Synthesis Reference Library

Special topic reference works

Reagents: Oxidation and

Reagents: Reduction

Stereoselective Synthesis

2011

Water in Organic Synthesis
Asymmetric Organocatalysis

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- a list of all types of compounds covered in Science of Synthesis
- information about the print version of Science of Synthesis and a list of all print volumes
- licensing information
- and more

System Requirements:

PC: WinNT 4.0/95/98/2000/XP/Vista/7, Microsoft Internet Explorer 5.0 and above, Mozilla 5.0 (e.g. Firefox) and above

Mac: OS X 10.3.9 and above, Safari 2.0 and above