

## The comprehensive E-book of named organic reactions and their mechanisms

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Organic chemistry has made efforts to systematically name chemical compounds, however, it has not been very successful in developing a nomenclature of chemical reactions. The IUPAC introduced a system describing transformations rather than reactions - a transformation shows only the substrate and product, whereas a reaction includes all the reactants. Apparently, this has its advantages, but it has not been widely accepted yet. Consequently, many organic reactions are known by the name of the scientists who discovered and studied them. Many of these reactions formed the basis of the organic chemistry of today and are described in textbooks. However, synthetically useful reactions that have been recently developed may be associated with a name are not always well known. In addition, because of the enormous amount and variety of information, it is often a difficult topic to cover for chemistry students and even synthetic practitioners.

Hundreds of new reactions named after scientists who discovered them or further variations and improvements of well known reactions are covered in new books and monographs. Recent examples include: A. Hassner, C. Stumer, J. E. Baldwin, R. M. Williams, *Organic Syntheses Based on Name Reactions* (Tetrahedron Organic Chemistry Series 22), Pergamon, 2002; Jie J. Li, *Name Reactions*, Springer, Berlin, 2003; T. Laue, A. Plagens, *Named Organic Reactions*, John Wiley & Sons Inc, 2<sup>nd</sup> Ed. 2005; B. P. Mundy, M. G. Eller, F. G. Favaloro, Jr., *Name Reactions and Reagents in Organic Synthesis*, 2<sup>nd</sup> Ed., Wiley, 2005; L. Kurti, B. Czako, *Strategic Applications of Named Reactions in Organic Synthesis*, Elsevier Academic Press, 2005.

A number of electronic databases are available to assist in navigating the web to investigate named reactions and reagents. For example:

- [www.chempensoftware.com/organicreactions.htm](http://www.chempensoftware.com/organicreactions.htm),
- [www.organic-chemistry.org](http://www.organic-chemistry.org),
- Organic Chemistry Name Reactions v1.0 at [www.virtualsoftware.com/ProdPage.cfm?ProdID=767&frgl=1](http://www.virtualsoftware.com/ProdPage.cfm?ProdID=767&frgl=1),
- and Merck index at [themerckindex.cambridgesoft.com/TheMerckIndex/NameReactions/TOC.asp](http://themerckindex.cambridgesoft.com/TheMerckIndex/NameReactions/TOC.asp).

The sites vary in the cost to access them, while others are free of charge.

These programs and databases, some of them containing graphical abstracts and the original reference for each one of the reactions, are a great help for synthetic chemists.

Despite different sources of information, the named reactions are still not completely available in any one comprehensive source or text. Thus, it became obvious that a new approach for examining these reactions needed to be developed. This development is realized in an electronic book by E. Kruiswijk, covering over 1000 named reactions, significantly more than are covered by most books on the subject. The emphasis of this book is to guide chemists to find more information about a certain named organic reaction. An example of the reaction is given followed by a relevant mechanism. The reaction is discussed briefly, followed by the references given. The literature references cover classical and modern articles, as well as reviews covering publications in the free online journals. In total, there are over 7000 references covering the scientific literature through September 2004. Some reactions are cross-referenced to Jerry March's *Advanced Organic Chemistry*.

The original format of presentation makes the entries easy to read for the student and practitioner alike. Experimental characteristics for some of the reactions are included, yet it would be more convenient if each named reaction began on a new page in this 2000-page reference.

The inclusion of more recent stereoselective and regioselective reagents or reactions including asymmetric syntheses would be expected. Some reactions, for example the Grubbs reaction, are missing. The features which could have been included in the book are an index of chemical transformations cross-referenced to name reactions and also cross-reference of reagents to the Fieser & Fieser, *Reagents for Organic Synthesis*, volumes.

In conclusion, this book provides the information in an easily accessible electronic form. The book is recommended for students and researchers involved in organic synthesis and working in research, industrial, and other laboratories. Its price is a good value and puts it within reach for individual purchase.

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