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Book Reviews

Handbook of Enantioselective Catalysis with Transition Metal Compounds
Henri Brunner and Wolfgang Zettlmeier, VCH, Weinheim, 1993. DM 498.00.

This unusual book comes in two volumes, consistent with its overall structure and with what the authors are attempting, *Volume 1* being a compendium of Products and Catalysts and *Volume 2* a compendium of Ligands, together with the incorporated references. There is no text to speak of—the function of the work is as a reference book to guide the reader quickly and effectively towards the catalytic asymmetric synthesis of a desired target molecule.

Thus it stands or falls on comprehensiveness, ease of usage and comprehensibility. The first response of this reviewer was that the style is rather quirky, and the layout old-fashioned in this era of computer-drawn structures; but elegance is not its purpose. More than most other publications, its utility can be put to direct test. The way it works is quite simple—each page in *Volume 1* is divided into six columns, with heading and typical entry as follows:

Formula	Optically Active Products	e.e. conf.	Starting Materials	Enantioselective Catalysts	Refs
$C_5H_9NO_3$	$\begin{matrix}\text{MeCHCOOH}\\ \vert\\ \text{NHAc}\end{matrix}$	$\frac{95}{R}$	$\begin{matrix}\text{CH}_2=\text{CCOOH}\\ \vert\\ \text{NHAc}\end{matrix}$	$[Rh(nbd)_2]ClO_4$ -(diop)**1321**	89 04

Thus reactions read from right to left, and the initial search involves identification of the product—classified in ascending order of formula. Reactions leading to a particular product can then be scanned rapidly, and an evaluation of the preferred synthetic route carried out. The original reference (year/number) can be read off, and the preferred ligand identified. In *Volume 2* each ligand entry gives pertinent original literature, should independent preparation be required.

After a period of use, easy familiarity is gained, and a quicker entry into the relevant original literature achieved than is accorded by any other publication. Every worker in the field will remember the experience of trying to track down the best methodology for asymmetric catalysis in an infuriatingly dispersed literature. That problem is solved; as far as tested the work is comprehensive, and accurate. It is not without faults, however. The exclusion of non-transition metal asymmetric catalysis leads to the incorporation of $ZnEt_2$/aldehyde additions when the catalyst is a titanium complex, but not in the far more common case where it is a β-aminoalcohol. Similarly, Diels-Alder reactions are included when the catalyst is Ti or Fe-based but not when it is borane. Amino acid and peptide catalysts are similarly excluded. Thus both enzymes and "chemzymes" are omitted. A reader might quite reasonably wish to compare the catalytic methodology with other methods of asymmetric synthesis, but will have to go elsewhere to achieve that. Comprehensiveness has its drawbacks as well. There are over 150 examples of the synthesis of R- or S-phenylethanol in the book, but only 10 of these give 85% e.e. or greater. The literature in this rapidly growing field is covered only to mid-1992.

Access to this compendium will save workers in the field considerable time, and probably quickly repay the cost of its purchase. It is a pity that in times of computerised information, it is not available in disc or CD form, with the advantages of regular updating and rapid cross-indexing. The authors should note that at least one software house has recently entered the competition on those terms.

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