

the aims of the experiment, the time required, the expected yields and any likely pitfalls—essential information for laboratory instructors.

My recommendations are that all who teach inorganic chemistry should make use of this text and that we should inform the editor of the success or otherwise of the experiments we try.

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### **Dictionary of Organometallic Compounds**

B. J. Aylett, M. F. Lappert and P. L. Pauson (eds)

Chapman and Hall, London

£2950 (hardback). £3500 CD ROM (single user).

£8750 CD ROM (network).

ISBN 0 412 43060 6 (five-volume set)

The first edition of this well-known reference work was published in three volumes in 1984, and the same editors have now expanded the text to five volumes in the 1995 second edition. A feature of this edition will be the issue of a regular series of updates of new compounds or data from mid-1995 in either hard copy or CD-ROM form. Researchers are also invited to send details of new compounds or groups of compounds to the Editors for possible inclusion.

The original concept of the *Dictionary* was to provide 'a well organised compendium of essential facts on selected organometallic compounds' and the Editors believe that this 'has been shown to fulfil a real need amongst chemists'. This, together with the manifest expansion of the field over the last ten years, has led to the second edition. Each entry has been revised and updated, with a further focus on synthetic routes, including a new index of synthetic reagents. The present edition contains more than 10 000 *extra* entries over the first edition, making a total of over 40 000.

The format of the *Dictionary* is well known to organometallic chemists. The essential feature is the ordering of compounds in element sections by alphabetical listing of the metallic element. Within each section the arrangement of entries is in order of molecular formula using the Hill convention (i.e. C, H and then the remaining elements in alphabetical sequence of chemical symbol).

Compounds containing more than one metal are cross-referenced. Each entry contains essential physical details about the compound and also the CAS number. A series of literature references is then given which includes a brief description of the main thrust of that reference (e.g. synth., use, pmr, uv, etc.). Each entry is also numbered at the point of entry to assist searching. Volume 5 includes the three indexes: an index of synthetic reagents, a molecular formula index in Hill convention order and a CAS Registry number index in serial order. Although the *Dictionary* does not claim to be a comprehensive source on hazard data, such information is given briefly in a proportion of entries. Each element section also provides a structure index.

In the view of this Reviewer, the *Dictionary* is an essential resource for the library of a Department

specializing in organometallic chemistry at the research or undergraduate level. The cost probably makes this the only location where the volumes will be available.

The *Dictionary* is now also available on CD ROM, at a cost of £3500 for a single user and £8750 for a network version. In any event, the *Dictionary* is an invaluable source of information to the organometallic chemist and access to it is essential.

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### **Organic Syntheses, Volume 72**

D. L. Coffen (ed)

Wiley, New York, 1995

£36.95 (UK)

ISBN 0 471 30727 0

The first volume of the series *Organic Syntheses* was published in 1921; Roger Adams was Editor-in-Chief. The subtitle says it all: 'an annual publication of satisfactory methods for the preparation of organic chemicals.' The current volume is the 72nd: the length of the publishing run and the vigour and rigour shown in its production attest to the continuing need for this series and its popularity.

Many of the 32 syntheses detailed in Vol. 72 employ organometallic reagents, reflecting the current trend, and it is not unreasonable to view much of the methodology as applied organometallic chemistry. Specific examples include:

- (1) the asymmetric hydrogenation of allylic alcohols using BINAP-ruthenium complexes: the preparation of {S}-(-)-citronellol from geraniol. The preparation of the catalyst is given although the word 'catalyst' hardly appears in the description.
- (2) The rearrangement of *trans*-stilbene to diphenylacetaldehyde with methylaluminiumbis(4-bromo-2,6-di-*tert*-butylphenoxide) (MABR) as catalyst.
- (3) The synthesis of functionalized enynes by palladium/copper-catalysed coupling reactions.
- (4) The use of highly reactive calcium for the preparation of organocalcium reagents.
- (5) The use of tributyltin hydride in the stereoselective synthesis of 2,2-disubstituted 1-fluoroalkenes.
- (6) The use of Me<sub>3</sub>SiCF<sub>3</sub> in the synthesis of 1-trifluoromethyl-1-cyclohexanol.
- (7) The preparation of a water-soluble tin hydride, tris [3-(2-methoxyethoxy)propyl]stannane.

The dedicated team of submitters and checkers appears to have done their commendable best to ensure clarity in the text. The publishers are to be congratulated in making available to members of various chemical societies this volume and some preceding ones (Vol. 62 onward) in an inexpensive soft-cover edition. Hard-cover versions and their indexes should be part of all libraries.

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