

Organic High Pressure Chemistry, ed. by W.J. Le Noble, Elsevier, Amsterdam, Oxford, New York, Tokyo, 1988, xii + 489 pp, ISBN 0-444-43023-7, Dfl 320.00, US\$ 168.50

This book is the 37th volume in Elsevier's 'Studies in Organic Chemistry' series. Professor Le Noble has assembled 15 experts to write 14 chapters on different aspects of organic chemistry under high pressure. Three introductory chapters on general topics including activation volumes ΔV^* and the estimation of reaction volumes ΔV are followed by 11 on particular types of reaction or areas of chemistry. High pressure apparatus is not reviewed in detail.

Of most direct interest to organometallic chemists is the 21 page chapter by A. Rahm on organometallic chemistry under high pressure. Metals considered in this chapter include lithium, sodium, tin, silicon and boron. 44 references deal mainly with synthetic aspects. There are some striking effects, for example the hydrostannation of β -pinene by tributyltin hydride at atmospheric pressure gives almost exclusively the product derived by opening the four-membered ring; at 14 kbar (1400 MPa) 97% of the product is the direct adduct across the double bond with the bicyclic ring structure retained. Organometallic examples also feature in J. Jurczak's chapter on synthesis, and several other chapters provide material that will provide helpful analogies for organometallic chemists considering high pressure reactions.

In his preface, Prof. Le Noble notes that the use of high pressure is now in a transitional period from a specialist technique to a routine laboratory method, and that this is therefore a suitable time for a general review of the field of organic applications. Organometallic chemists interested in synthetic or mechanistic problems will find this book a good guide to the likely effect of pressure on various types of reactions: even for reactions without significantly negative ΔV and ΔV^* values there may be an advantage in using high pressure, which almost invariably increases the thermal stability of compounds.

*School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (U.K.)*

Richard A. Jackson