

Book review

Handbook of Liquid Crystals; by H. Kelker and R. Hatz, Verlag Chemie, Weinheim, 1980, xviii + 917 pages, DM 420.

The authors of this account of liquid crystals have made a courageous attempt to provide "a convenient introduction to the field and guide to the literature". They have not wholly succeeded in their first objective, since readers coming to the book without first familiarizing themselves with the subject by using a good conventional textbook on the subject (such as that by G.W. Gray) will find themselves in some trouble. However, the book certainly does provide a valuable guide to the literature, and over 8000 references are given; the literature up to 1976 has been surveyed in detail, and many 1977 papers are also cited.

The book covers methods, theories and applications. After consideration of microscopic investigations, basic concepts and chemical structures, the account moves to the behaviour of liquid crystals in electric and magnetic fields, the use of X-ray and neutron scattering, optical characteristics of mesophases, thermodynamic properties, and the use of liquid crystals as solvents for GLC and chemical reactions. After a contributed chapter by C. Schumann on NMR and ESR studies, liquid crystals in living systems are discussed, then liquid-crystalline order in polymers (a brief reference being made to polydiethylsiloxanes), and finally technical applications.

The long table of mesogens gives only a very small number of references to inorganic or organometallic compounds, including those to the liquid crystal behaviour of $i\text{-Bu}_2\text{Si}(\text{OH})_2$ and some organomercurials. It is remarkable that so few organometallic compounds have yet been found to form mesophases, and many more examples must surely appear.

This book, which contains 438 figures or photographs (including one in colour) is not highly priced when one considers how much information is packed into it. Moreover, the Royal Society of Chemistry is advertising a soft-cover version at £ 13.00 [see *Chem. in Britain* (April) 1981, 17 (4), inside back cover], a truly remarkable bargain.

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