

Book Reviews

Chemicals in the Oil Industry. Edited by P. H. Ogden, Royal Society of Chemistry, London, 1988. viii + 284 pp. ISBN 0 85186 736 7. Price: £37.50.

Crude oil had a market price of about \$30 and North Sea production was still expanding when the first edition of *Chemicals in the Oil Industry* was published in 1983. The events in the ensuing five to six years have been as dramatic as those of the early 1970s. The collapse in oil prices and the fact that many oil fields have now passed their peak of production, has led to vigorous growth in demand for chemicals which increase recovery and efficiency.

In the past few years the industry has changed its demand for chemicals from those used for enhanced oil recovery (these are high cost materials which the current oil prices cannot support) to improved performance drilling muds, well cements, corrosion inhibitors and dispersants which can be used in lower quantities. This change in emphasis has been brought about not only by economic pressures but also as a result of the growing influence of environmentalists.

The link between the oil industry and carbohydrate polymers is, of course, the collection of polysaccharides which are used in drilling muds and tertiary well recovery processes — particularly xanthan, scleroglucan and carboxymethyl cellulose.

The 21 contributions in this volume, written by experts from the petroleum and chemicals industry, review the current chemical needs of the oil industry and report on some of the latest research in the field ranging from performance testing of inhibitors and drilling muds to analysis and monitoring in the laboratory and in offshore operations. The major developments of the past five years are presented in an authoritative but readable style with good coverage of the scientific literature from the 1980s.

This book is very useful reading for professionals who are in both the chemical, polysaccharide and oil industries and is attractively priced so as not to deter the casual reader.

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Telechelic Polymers: Synthesis and Applications. Edited by E. J. Goethals, CRC Press, Inc., Boca Raton, Florida, 1989. 402 pp. ISBN 0 8493 6764 6. Price: £126.00.

Three main classes of synthetic compounds can be distinguished in organic and polymer chemistry: monomers, oligomers and polymers. In the last two decades other types of molecules, called telechelics, which can be classified between oligomers and polymers, have gained increasing interest in chemistry and industry. Telechelic polymers are usually biofunctional linear polymers having reactive groups at their extreme positions-chain ends. However, a number of telechelic polymers have functionality other than two; star trifunctional or tetrafunctional telechelic polymers are commercially available. These oligofunctional prepolymers are impressive because of the great versatility of their applications, e.g. as organic intermediates, sealants, coatings, and as reactive compounds in many fields. Also important is the role of telechelic polymers in the basic research of network formation and rubber elasticity.

One of the primary goals in the synthesis of telechelics is to provide bifunctional chemically inert segments capable of modifying condensation polymers. Almost all classical synthetic methods for the preparation of polymers have been used for the production of telechelics. This book provides the interested reader with an overview and a starting point for more detailed investigation of these synthetic methods which are classified according to the mechanism of polymerization, such as stepwise polymerization, free radical polymerization, anionic and group transfer, and cationic and ring-opening polymerization. Moreover, this book includes chapters on: controlled degradation of polymers as a method to produce telechelics, macromonomers, chemical transformation of the functional end-groups, polyols used in polyurethane