

# Preface

As crude oil resources decrease, the oil industry demands more sophisticated methods for the exploitation of natural resources. As a result, the use of oil field chemicals is becoming increasingly important.

When I started to research this topic seriously, I asked the experts for a monograph on oil field chemicals and they replied, "There is none." This book is the result of my efforts to create a definitive study on this important subject.

The material presented here is a compilation obtained by critically screening approximately 20,000 references from the literature (mainly from the Petroleum Abstracts Data Base and Patent Data Bases). Only materials that are accessible to the public have been included. The literature was screened from a chemist's point of view. Unfortunately several papers and patents did not disclose the chemical nature of the additives that are proposed for certain applications. In most cases it was not possible to learn the components by looking up cross-references and other sources. Papers of this kind are useless and have been omitted from the reference list. Research and procedures that are obviously not working, as well as wonder additives that are supposedly "good for everything you can imagine," have also been left out.

This book was originally intended to include a tutorial concerning the general chemistry, synthesis, and properties of oil field chemicals. In the course of the compilation I realized that the material is so extensive that the idea had to be abandoned. The material presented here is not complete. Only the recent developments of the last 10 years have been screened. Therefore additives that have been known and used as such for a long time (e.g., weighting materials) receive only brief mention. Attention is focused on the specific actions of oil field chemicals. Therefore patents dealing essentially with the same matter, but registered in multiple countries, are cited only once. The material presented here cannot replace a critical search in the patent literature. Longer quotations from original sources are marked as indented text. The text is ordered according to applications to parallel job processes. It starts with drilling, proceeds to productions, and ends (fortunately only occasionally in practice) with oil spills. Some of the chemicals are used in more than one main field.