

**PERRY'S
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HANDBOOK
SIXTH
EDITION**

PERRY'S CHEMICAL ENGINEERS' HANDBOOK SIXTH EDITION

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Preface to the Sixth Edition

The discipline of chemical engineering has continued to contribute in numerous and important ways to worldwide industrial progress over the past decade. Significant strides have been made in process and equipment design methods. This progress has been due, in part, to factors such as increased computer utilization and availability of better materials of construction. The focus on the increased value of energy and the need for improved waste management have also affected design decisions. Basically, however, good chemical engineering practice is still founded on the sound application of the two aspects of empiricism and theory. And in both of these aspects a number of contributions have been made since publication of the fifth edition. Thus, each of the 25 sections of the fifth edition has been revised and updated, and for some areas (such as economics, distillation, extraction, and absorption) sections have been completely rewritten. Two new sections have been added to incorporate the emerging technologies of bioengineering and waste management.

The method of handling units in the *Handbook* was changed. As most engineers are aware, SI units are utilized in much of the world while U.S. customary units are still used primarily in the United States (although there has been a definite move in the United States toward greater application of the SI). To accommodate the different users, the *Handbook* has been written to the extent possible using both conventions. Tables and figures which were revised from earlier editions were not redrafted because it simply was not practical to do so. New figures and tables are generally presented in SI and, in some instances, in both sets of units. In all cases, conversion factors are provided with tables and figures to convert to the alternative convention. Numbers which appear in the text are given in both SI and U.S. customary units, and dimensional constants which appear in a number of empirical equations are also usually specified in both unit sets. In general, the editors believe the *Handbook* will be usable by persons working with either units convention.

Numerous persons assisted in the preparation of this edition. The editors in particular acknowledge Wanda S. Dekat, Georgea L. de Medina, and Guy L. Green, seniors in engineering, who performed the tedious task of preparing the index. Typing and secretarial assistance were provided by Jill A. Schoeling and Ruth R. Sleeper.

The editors especially acknowledge the contributions of Raymond Genereaux, editor of Sec.

6, "Transport and Storage of Fluids." He is the only person who has participated in the preparation of all six editions of the *Handbook*. His efforts and commitment throughout a long association with the *Handbook* are appreciated.

The untimely death of Bob Perry during the preparation of this edition was a hurtful loss. He was deeply committed to the continuation of the *Handbook* and to the quality represented in the tradition of this book. He is missed.

We also regret the loss of Frank L. Evans, Jr., and Theodore Vermeulen, section editors who made invaluable contributions to the *Handbook*.

DON W. GREEN

ABOUT THE EDITORS

The late Robert H. Perry served as chairman of the Department of Chemical Engineering at the University of Oklahoma and program director for graduate research facilities at the National Science Research Foundation. He was a consultant to various United Nations and other international organizations. From 1973 until his death in 1978 Dr. Perry devoted his time to a study of the cross impact of technologies within the next half century. The subjects under his investigation on a global basis were energy, minerals and metals, transportation and communications, medicine, food production, and the environment.

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