

THE CHEMISTRY OF THE RUBBER INDUSTRY

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649098552

The chemistry of the rubber industry by Harold E. Potts

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Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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HAROLD E. POTTS

**THE CHEMISTRY OF
THE
RUBBER INDUSTRY**

THE CHEMISTRY OF THE
RUBBER INDUSTRY

OUTLINES OF INDUSTRIAL
CHEMISTRY.

A SERIES OF TEXT-BOOKS INTRO-
DUCTORY TO THE CHEMISTRY
OF THE NATIONAL
INDUSTRIES.

EDITED BY
GUY D. BENGOUGH, M.A., M.Sc.

OUTLINES OF INDUSTRIAL CHEMISTRY.

THE CHEMISTRY
OF THE
RUBBER INDUSTRY

BY

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(of the firm of Huber and Mond)

Member International Rubber Testing Committee



UNIV. OF
CALIFORNIA

NEW YORK

D. VAN NOSTRAND COMPANY
23 MURRAY AND 27 WARREN STREETS

1912

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GENERAL PREFACE TO THE SERIES

THE object of the series of volumes collected together under the general title "Outlines of Industrial Chemistry" is to provide students and persons employed on the technical side of any particular industry with a handbook explaining the chemical aspect of the operations carried on in that industry. It is hoped, too, that the series may be found useful and interesting to many business heads and subordinates who are employed mainly in the office, but who still take an interest in the processes by which their dividends or salaries are earned.

Only a slight acquaintance with chemistry is assumed on the part of the reader; in fact, a principal object of the series is to provide a link between the elementary chemistry taught in schools and institutions which provide instruction up to, say, the matriculation standard of a modern university, and the larger text-books dealing with the details of the separate industries. In most cases these large works are quite beyond the intellectual and financial reach of those who enter industrial employment, and the result is that a clear understanding of the essential processes of an industry can only be obtained by slow absorption from the busy senior members of the staff.

It is believed, moreover, that each volume in the series, though it deal with the chemistry of one industry only, will serve an educational as well as a purely utilitarian purpose. Examples which illustrate the general processes of deduction, and of the building up of an hypothesis or theory by the scientific method, may be drawn from the particular set of chemical facts to be

met with in almost any one industry. Thus, while familiarising himself with just those phenomena which are of fundamental importance to him, the student will be learning how they may be correlated and welded together into a coherent scientific system.

The science of chemistry has grown so rapidly in recent years, and such immense masses of knowledge have been accumulated, that no one man can hope to become even moderately conversant with every branch of the subject. A student possessing an elementary general knowledge of chemistry, and only a limited time for study, is therefore justified, even from an educational point of view, in spending that time in the study of the class of facts most intimately associated with his particular industry.

Such a course has the further advantage that it will stimulate the best intellects to seek for a deeper knowledge of pure chemistry. A thinking student will soon find that he has come face to face with phenomena which he cannot explain in the light of the knowledge he has already acquired. He will feel that progress in the chemical side of his industry may very possibly be obtained by careful investigation of the unexplained and unexpected anomalies that occur from time to time; or, perhaps, by the application or adaptation of principles or processes discovered by purely scientific workers in the laboratory. In this way he may be brought back to study more deeply the methods and principles of pure chemistry; such a study can but react to the benefit of the student, the employer and the industry concerned.

GUY D. BENGOUGH

AUTHOR'S PREFACE

THIS book aims at bridging the gap between pure chemistry and manufacturing practice. It is intended to explain to the chemist who wishes to work on rubber the chief properties of the material with which he has to deal, and the chief lines on which his work may run. It is also intended to explain to the rubber technologist the nature of the problems with which a rubber chemist is concerned, and to make clear the difficulties, but also the possibilities, of chemical routine and research. In short, the object is to exhibit the points of contact between Chemistry and the Industry.

It has been considered advisable to begin with a chapter on Colloidal Chemistry, since some knowledge of this subject is a necessary part of the equipment of the chemist who wishes to understand modern views on almost any rubber problems.

The production and manufacture of rubber have then been considered, not for the sake of their own technique but for their bearing on chemical work. Lastly, the analytical processes of most importance have been critically described and explained. It may be added that illustrations of rubber machinery are not given, as not being consonant with this plan. Those who wish to see such illustrations will find them in abundance, not merely in works on the subject, but also in the advertisement pages of the technical press.

A few references have been given in the text. References to