

**PRACTICAL TESTING OF RAW  
MATERIALS: A CONCISE HANDBOOK  
FOR MANUFACTURERS, AND USERS  
OF CHEMICALS, OILS, FUELS, GAS  
RESIDUALS AND BYE-PRODUCTS**

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Practical Testing of Raw Materials: A Concise Handbook for Manufacturers, and Users of  
Chemicals, Oils, Fuels, Gas Residuals and Bye-Products by S. S. Dyson

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**S. S. DYSON**

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PRACTICAL TESTING  
OF  
RAW MATERIALS.

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# PRACTICAL TESTING

OF

## RAW MATERIALS.

A CONCISE HANDBOOK FOR MANUFACTURERS, MERCHANTS, AND USERS OF  
CHEMICALS, OILS, FUELS, GAS RESIDUALS AND BYE-PRODUCTS,  
AND PAPER MAKING MATERIALS, WITH CHAPTERS  
ON WATER ANALYSIS AND THE TESTING  
OF TRADE EFFLUENTS.

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BY

S. S. DYSON.

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## CHAPTER I.

### The Necessity for the Testing of Raw Materials.

THE publication of this manual of practical testing is not an attempt to offer a substitute for the many valuable standard works on chemical analysis which are already in existence. The needs of the analytical chemist are well supplied. He has access to a whole library of well-written and well-authenticated text books on every department of chemical knowledge, and it would be mere presumption to offer any substitute for the recognised standard works of reference.

There exists, however, a want which this volume is designed to meet. The general users and merchants of chemicals and drysalteries are not, as a rule, versed in chemical analysis, nor are the exigencies of their business such as to demand the inclusion of a trained chemist among the members of their staff; but there are many occasions when, in buying articles of a chemical nature, it would often be very helpful—and very profitable—to be able to form an opinion as to the relative values of, say, half a dozen samples of the same class of material. For instance, a certain large manufacturer had for many years been purchasing the lubricating oil used in his very extensive works upon the guidance of a rough and ready test—he filled a jar with the oil, and ascertained the specific gravity by means of an antiquated hydrometer. The denser the oil, the higher it rose in his estimation, and he placed his contracts accordingly. But, as his business developed, and he began to use a different class of raw material, he found it necessary to engage a chemist to control the operations of his works, and, in due course, the lubricants came under examination. The chemist was a smart man, and he quickly proved, to the entire satisfaction of his employer, that the bill for lubricants was far higher than was necessary. The manufacturer was amazed to find that there