

**THE CALCULATIONS
OF ANALYTICAL
CHEMISTRY**

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The calculations of analytical chemistry by Edmund H. Miller

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EDMUND H. MILLER

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OF ANALYTICAL
CHEMISTRY**

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OF
ANALYTICAL CHEMISTRY

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THE CALCULATIONS
OF
ANALYTICAL CHEMISTRY

BY
EDMUND H. MILLER, Ph.D.
PROFESSOR OF ANALYTICAL CHEMISTRY
IN
COLUMBIA UNIVERSITY

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PREFACE.

THIS text-book is intended for use in scientific schools and colleges, in connection with courses in analytical chemistry, and aims to give a logical treatment of the calculations required of an analyst. As analytical chemistry is so closely allied with the other branches of chemistry, many of the calculations given will be found of general application. The matter has been selected so as not to encroach on the domain of physical chemistry but is intended to lead up to the study of that subject.

The object has been to furnish a text-book, which shall give the necessary information concerning those important chemical calculations, which every student should thoroughly understand before taking up advanced work. The method of presentation and arrangement differs materially from the old books on chemical calculations. Formulæ have been avoided, except in the last chapters, so that the student shall consider each problem individually and solve it from a knowledge of chemical laws instead of substituting in formulæ for different cases. If the student has in this way obtained ability to apply the laws, he can readily construct a formula or table for constant use.

More than two hundred examples are given, with answers; all of which can be solved by arithmetic or algebra. They have been made as practical as possible in order to connect chemical laws with practical work. Numerous tables, which

have been carefully verified, will be found at the back of the book.

The assistance of Prof. Freedman of the University of Vermont on Chapter X. and of Dr. Joüet in correcting proof and verifying examples is gratefully acknowledged. Any corrections or suggestions will be much appreciated.

E. H. M.

HAVEMEYER HALL,
January, 1900.

PREFACE TO THIRD EDITION.

As a new edition of this book has become necessary, the opportunity is taken to make a thorough revision and enlargement. Experience with this text-book during the past four years has shown it to be advisable to subdivide the chapter on normal solutions and to make the explanations more full. The international atomic weights for 1904 have been introduced throughout the book and many new examples added.

The author acknowledges a number of corrections and helpful suggestions and the assistance of Mr. F. V. D. Cruser in recalculating the examples and in correcting the proof.

E. H. M.

HAVEMEYER HALL,
September, 1904.

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