

Oxidation-Reduction Analysis of Hydrogen Peroxide

Many oxidation-reduction reactions serve as a basis for quantitative analysis. One of the most widely used oxidizing agents is potassium permanganate, KMnO_4 . It is a powerful oxidizing agent that also serves as a self-indicator. One drop in excess of the endpoint volume of a titration turns the solution a pale-pink color.

In this experiment, you will titrate a standardized solution of 0.02 M KMnO_4 into a measured amount of an unknown concentration of hydrogen peroxide, H_2O_2 . Your objective is to determine the percentage and molarity of H_2O_2 in ordinary over-the-counter solutions of hydrogen peroxide.

Pre-Lab Assignment:

Balance the equation for the titration reaction using the half-reaction method. The reaction takes place in acidic conditions. (Record your work in your lab notebook.)



Materials

2 burets
Erlenmeyer flasks
Stir plate
Magnetic stir bar
Balance
Household hydrogen peroxide
0.02M potassium permanganate solution
3.0 M sulfuric acid
0.1M manganese(II) sulfate
Distilled water

PROCEDURE

1. Obtain and wear goggles.
2. Rinse and fill a buret with standardized KMnO_4 solution. Record the molarity of the solution.
3. Determine the mass of a clean, dry Erlenmeyer flask to the correct number of significant figures, and record.
4. From the buret on the front table, record the initial volume (again, to the correct number of significant figures). Add approximately 1.5 mL of ordinary household hydrogen peroxide. Record the final buret volume.
5. Find the mass of the flask with the peroxide and record.
6. Add about 35 mL of distilled water, 5 mL of 3.0 M H_2SO_4 , and 3 or 4 drops of 0.1 M MnSO_4 , which acts as a catalyst.

Analysis Of Hydrogen Peroxide Pre Lab Answer

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Analysis Of Hydrogen Peroxide Pre Lab Answer:

Annual Report ... National Acid Precipitation Assessment Program National Acid Precipitation Assessment Program (U.S.). Office of the Director of Research,1985 **Subject Index to Unclassified ASTIA Documents** Defense Documentation Center (U.S.),1960 Nuclear Science Abstracts ,1976 **Selected Water Resources Abstracts** ,1989 *Scientific and Technical Aerospace Reports* ,1983 *Journal of Solar Energy Engineering* ,1996 **Methods in Biotechnology** Seung-Beom Hong,M. Bazlur Rashid,Lory Z. Santiago-Vázquez,2016-08-01 As rapid advances in biotechnology occur there is a need for a pedagogical tool to aid current students and laboratory professionals in biotechnological methods *Methods in Biotechnology* is an invaluable resource for those students and professionals *Methods in Biotechnology* engages the reader by implementing an active learning approach provided advanced study questions as well as pre and post lab questions for each lab protocol These self directed study sections encourage the reader to not just perform experiments but to engage with the material on a higher level utilizing critical thinking and troubleshooting skills This text is broken into three sections based on level *Methods in Biotechnology* *Advanced Methods in Biotechnology I* and *Advanced Methods in Biotechnology II* Each section contains 14 22 lab exercises with instructor notes in appendices as well as an answer guide as a part of the book companion site This text will be an excellent resource for both students and laboratory professionals in the biotechnology field EPA Publications Bibliography United States. Environmental Protection Agency,1987 **Compilation of EPA's Sampling and Analysis Methods, Second Edition** Lawrence H. Keith,1996-09-26 The popular first edition of this book contained approximately 600 analyte method summaries This new edition contains twice as many new EPA approved methods for testing and analyzing industrial chemicals pesticides herbicides dioxins and PCBs and is a printed version of the EPA s Sampling and Analysis Methods Database Each analyte method summary contains all of the information required to stand alone as a reference Thus in addition to a brief summary of each method descriptions include required instrumentation interferences sampling containers preservation techniques maximum holding times detection levels accuracy precision quality control requirements EPA reference and when available EPA contacts with phone numbers Each summarized report is a stand alone document **Annual Report ... and Findings Update** National Acid Precipitation Assessment Program (U.S.). Office of the Director,1985 **Laboratory Experiments for General Chemistry** Harold R. Hunt,Toby F. Block,George M. McKelvy,1998 *American Industrial Hygiene Association Journal* American Industrial Hygiene Association,1961 *Selected Water Resources Abstracts* ,1989 **Report summaries** United States. Environmental Protection Agency,1983 Industrial Laboratory ,1989 Journal of the Air Pollution Control Association ,1972 Experimental Organic Chemistry John C. Gilbert,Stephen F. Martin,2006 This proven and well tested laboratory manual for organic chemistry students contains procedures for both miniscale also known as small scale and microscale users This lab manual gives students all the necessary background to enter the laboratory with the

knowledge to perform the experiments with confidence For the microscale labs experiments were chosen to provide tangible quantities of material which can then be analyzed Chapters 1 2 introduce students to the equipment record keeping and safety of the laboratory Chapters 3 6 and 8 are designed to introduce students to laboratory techniques needed to perform all experiments In Chapters 7 and 9 through 20 students are required to use the techniques to synthesize compounds and analyze their properties In Chapter 21 students are introduced to multi step syntheses of organic compounds a practice well known in chemical industry In Chapter 23 students are asked to solve structures of unknown compounds The new chapter 24 introduces a meaningful experiment into the textbook that reflects the increasing emphasis on bioorganic chemistry in the sophomore level organic lecture course This experiment not only gives students the opportunity to accomplish a mechanistically interesting and synthetically important coupling of two amino acids to produce a dipeptide but also provides valuable experience regarding the role of protecting groups in effecting synthetic transformations with multiple functionalized molecules

Plastic Waste Management Navnath T. Hatvate, Ajinkya Madan Satdive, Hemantkumar N. Akolkar, A. K. Haghi, 2025-07-22 Plastic pollution is a serious global environmental and health concern caused by the excessive use of plastic products and poor management of plastic waste However it is a complex issue that requires suitable technologies and effective policies and management strategies This book describes the current global standard of plastic waste management and explains why and how it should be improved The book begins with an introduction of the different types of plastic materials and their degradation patterns and explains the impact of plastic pollutants on the environment the quality of water resources and on human health Next the book describes current solutions for plastic waste management including recycling and toxic reduction methods moving on to presenting innovative approaches and technologies for plastic waste management The final chapter discusses future prospects and policy implications

Effects of Disease on Clinical Laboratory Tests Richard B. Friedman, Donald S. Young, 1989 An aid to determine the possible cause of laboratory test abnormalities encountered in clinical practice Sections include laboratory test index disease keyword index laboratory test listings disease listings by ICD 9CM classification and references

Accurate Results in the Clinical Laboratory Amitava Dasgupta, Jorge L. Sepulveda, 2019-07-20 Accurate Results in the Clinical Laboratory A Guide to Error Detection and Correction Second Edition provides a comprehensive review of the factors leading to errors in all areas of clinical laboratory testing This trusted guide addresses interference issues in all laboratory tests including patient epigenetics processes of specimen collection enzymes and biomarkers Clinicians and laboratory scientists will both benefit from this reference that applies discussions to both accurate specimen analysis and optimal patient care Hence this is the perfect reference for clinical laboratorians from trainees to experienced pathologists and directors Provides comprehensive coverage across endocrine oncology hematology immunohistochemistry immunology serology microbiology and molecular testing Includes new case studies that highlight clinical relevance and errors to avoid Highlights the best titles published within a variety of

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