

Equilibrium Constants in Terms of Pressure, K_p

When the reactants and products are gases, the equilibrium constant can be expressed in terms of partial pressures (K_p).



The relationship between K_p and K_c is given by the following equation:

$$K_p = K_c (RT)^{\Delta n}$$

$$\Delta n = \sum (\text{product coefficients}) - \sum (\text{reactant coefficients})$$

Example: $3\text{H}_2(g) + \text{N}_2(g) \rightleftharpoons 2\text{NH}_3(g)$ $K = 3.80 \times 10^2$, $K_p = ?$

$$\Delta n = 2 - (3 + 1) = -2 \quad K_p = 3.80 \times (0.08206 \times 273)^{-2} = 4.34 \times 10^3$$

- If the number of gas molecules does not change in the reaction, $K_p = K_c$ because $\Delta n = 0$.

K for Heterogeneous Equilibria

The concentrations of solids, liquids, and the solvent are omitted from equilibrium expressions.



Equilibrium Constants and Units

The more accurate expression for the equilibrium constant is given by using the activities of reactants and products.

$$K = \frac{(a_c)^c (a_d)^d}{(a_a)^a (a_b)^b}$$

For most undergraduate general chemistry courses, it is assumed that $a \approx 1$ since the differences are small and can be neglected. Because activities have no units, K is traditionally shown without units.

The Direction of Reaction and Quotient (Q)

To predict the direction of reaction before an equilibrium is reached, reaction quotient is used. It is similar to the expression for K , however, the actual concentrations are used.



- $Q < K$ Reaction has a tendency to form more products.
- $Q > K$ Reaction has a tendency to form more reactants.
- $Q = K$ Reaction is at equilibrium.

$$Q_c = \frac{[C]^c [D]^d}{[A]^a [B]^b} \quad Q_p = \frac{P_C^c P_D^d}{P_A^a P_B^b}$$

- If any reactant or product is missing in the initial mixture, the reaction will shift in the direction forming some of that component.

Le Chatelier's Principle

If a chemical system at equilibrium is disturbed, the system shifts in a direction that minimizes the disturbance. This can be done in different ways.

Changing Concentrations at Equilibrium

- Adding a reactant produces more product by consuming some of the reactant.
- Adding a product produces more reactant by consuming some of the product.



Changing The Reaction Volume

- Decreasing the volume shifts the reaction to in the direction with less gas molecules.
- Increasing the volume shifts the reaction to in the direction with more gas molecules.



Changing The Pressure

- The pressure can be changed in a few ways: 1) By decreasing the volume (see above), 2) By adding more volume to the mixture (see above), 3) By adding an inert gas.
- Adding an inert gas does not cause a shift in equilibrium because it does not alter the partial pressures of any of the reacting components.

Changing The Temperature

Know the sign of ΔH is different than what we write for heat!

For an endothermic reaction, treat the heat as a product.



For an exothermic reaction, treat the heat as a reactant.



College General Chemistry Study Guide

Annelies Wilder-Smith



College General Chemistry Study Guide:

Student Study Guide for Principles of General Chemistry Martin Silberberg, 2012-04-02 Designed to help students recognize their learning style understand how to read classify and create a problem solving list and practice problem solving skills each chapter provides study objectives and a summary of the text followed by sample problems with detailed solutions as well as true false questions and a self test with all answers provided at the end of the chapter Chemistry 1411 Enrique Olivas, 2014-08-19 THE MAIN OBJECTIVES DURING THE DEVELOPMENT OF THIS BOOK WAS TO BETTER PREPARE STUDENTS THAT NEED TO TAKE THE FINAL COMPREHENSIVE AMERICAN CHEMICAL SOCIETY ACS EXAM AS WELL AS THOSE STUDENTS THAT SEEK ADMISSION IN MEDICAL AND PHARMACY SCHOOLS THE STUDY GUIDE DESCRIBES IN AN OUTLINE FORMAT THE MOST IMPORTANT TOPICS COVERED IN GENERAL CHEMISTRY I THE BOOK SUMMARIZES THE MAIN OBJECTIVES THAT STUDENTS ENROLLED IN THE COURSE SHOULD LEARN THE BOOK GIVES MANY SAMPLE PROBLEMS WITH STEP WISE SOLUTIONS SO THAT STUDENTS CAN FOLLOW THE MATERIAL EASIER WHEN NECESSARY MATHEMATICAL FORMULAS ARE GIVEN ALL THROUGHOUT TO FACILITATE THE SOLUTIONS TO NUMERICAL PROBLEMS THIS STUDY GUIDE CAN BE USED BY ANY COLLEGE STUDENT ENROLLED IN GEN CHEM I REGARDLESS OF THE TEXT USED ONE OF THE PITFALLS OF MOST TEXTS IS THE EXCESSIVE AMOUNT OF MATERIAL COVERED BUT FAIL TO EMPHASIZE THE MOST IMPORTANT FEATURES OF THE TOPIC COVERED **Study Guide for General Chemistry and College Chemistry** N.E. Griswold, W.H. Nebergall, F.C. Schmidt, H.F. Holtzclaw, 1976 **Study Guide for General Chemistry and College Chemistry** N.E. Griswold, W.H. Nebergall, H.F. Holtzclaw, W.R. Robinson, 1980 **General Chemistry** National Learning Corporation, 2018 The Regents Excelsior College Examinations E RCE offer you an opportunity to obtain recognition for college level learning The E RCE consists of exams designed to demonstrate achievement and mastery of various college level subjects such as the Arts and Sciences Business Criminal Justice Education Health and Nursing The General Chemistry Passbook R prepares you by sharpening your knowledge in advance of the exam and provides hundreds of multiple choice questions that include but are not limited to chemical reactions atomic structures chemical bonding liquids solids and gases energy balance and more *Student Study Guide to accompany Principles of General Chemistry* Martin Silberberg, 2009-02-17 Designed to help students recognize their learning style understand how to read classify and create a problem solving list and practice problem solving skills each chapter provides study objectives and a summary of the text followed by sample problems with detailed solutions as well as true false questions and a self test with all answers provided at the end of the chapter **General Chemistry** National Learning Corporation, 2019-02 The Regents Excelsior College Examinations E RCE offer you an opportunity to obtain recognition for college level learning The E RCE consists of exams designed to demonstrate achievement and mastery of various college level subjects such as the Arts and Sciences Business Criminal Justice Education Health and Nursing The General Chemistry Passbook R prepares you by

sharpening your knowledge in advance of the exam and provides hundreds of multiple choice questions that include but are not limited to chemical reactions atomic structures chemical bonding liquids solids and gases energy balance and more

Ace General Chemistry I and II Dr Holden Hemsworth,2015-11-30 A Concise and Easy Study Guide to Ace General Chemistry I and IILearn the important concepts of General Chemistry in this concise but comprehensive study guide This study guide is a supplemental resource to help students learn review the important concepts covered over the two semesters of a typical college undergraduate General Chemistry course The guide is broken down into 18 easy to read chapters and covers Introduction to Chemistry Components of Matter Stoichiometry of Formulas and Equation Quantum Theory and Atomic Structure Electron Configuration and Periodic Properties Chemical Bonding and Bonding Theories Gases and Gas Laws Thermochemistry and Electrochemistry Chemical Kinetics Nuclear Chemistry And MUCH MUCH MORE Buy a Copy and Begin Learning Today *Ace General Chemistry II* Holden Hemsworth,2015-11-26 A Concise and Easy Study Guide to Ace General Chemistry IILearn the important concepts covered in the second semester of a college General Chemistry course in this concise but comprehensive study guide This study guide is a supplemental resource to help students learn review the important concepts covered in the second semester of a college General Chemistry course The guide is broken down into 10 easy to read chapters and covers Review of Fundamental Concepts Gases and Gas Laws Thermochemistry Chemical Kinetics Chemical Equilibrium Acid Base Equilibrium Solubility Equilibrium Electrochemistry Nuclear Chemistry And MUCH MUCH MORE Buy a Copy and Begin Learning Today **Chemistry study guide for use with general chemistry and college chemistry** Norman E. Griswold,1968

Ignite the flame of optimism with Crafted by is motivational masterpiece, Fuel Your Spirit with **College General Chemistry Study Guide** . In a downloadable PDF format (PDF Size: *), this ebook is a beacon of encouragement. Download now and let the words propel you towards a brighter, more motivated tomorrow.

http://antonioscollegestation.com/About/publication/default.aspx/changed_by_chance_my_journey_of_triumph_over_tragedy.pdf

Table of Contents College General Chemistry Study Guide

1. Understanding the eBook College General Chemistry Study Guide
 - The Rise of Digital Reading College General Chemistry Study Guide
 - Advantages of eBooks Over Traditional Books
2. Identifying College General Chemistry Study Guide
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an College General Chemistry Study Guide
 - User-Friendly Interface
4. Exploring eBook Recommendations from College General Chemistry Study Guide
 - Personalized Recommendations
 - College General Chemistry Study Guide User Reviews and Ratings
 - College General Chemistry Study Guide and Bestseller Lists
5. Accessing College General Chemistry Study Guide Free and Paid eBooks
 - College General Chemistry Study Guide Public Domain eBooks
 - College General Chemistry Study Guide eBook Subscription Services
 - College General Chemistry Study Guide Budget-Friendly Options

6. Navigating College General Chemistry Study Guide eBook Formats
 - ePub, PDF, MOBI, and More
 - College General Chemistry Study Guide Compatibility with Devices
 - College General Chemistry Study Guide Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of College General Chemistry Study Guide
 - Highlighting and Note-Taking College General Chemistry Study Guide
 - Interactive Elements College General Chemistry Study Guide
8. Staying Engaged with College General Chemistry Study Guide
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers College General Chemistry Study Guide
9. Balancing eBooks and Physical Books College General Chemistry Study Guide
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection College General Chemistry Study Guide
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine College General Chemistry Study Guide
 - Setting Reading Goals College General Chemistry Study Guide
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of College General Chemistry Study Guide
 - Fact-Checking eBook Content of College General Chemistry Study Guide
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements

- Interactive and Gamified eBooks

College General Chemistry Study Guide Introduction

College General Chemistry Study Guide Offers over 60,000 free eBooks, including many classics that are in the public domain. Open Library: Provides access to over 1 million free eBooks, including classic literature and contemporary works. College General Chemistry Study Guide Offers a vast collection of books, some of which are available for free as PDF downloads, particularly older books in the public domain. College General Chemistry Study Guide : This website hosts a vast collection of scientific articles, books, and textbooks. While it operates in a legal gray area due to copyright issues, its a popular resource for finding various publications. Internet Archive for College General Chemistry Study Guide : Has an extensive collection of digital content, including books, articles, videos, and more. It has a massive library of free downloadable books. Free-eBooks College General Chemistry Study Guide Offers a diverse range of free eBooks across various genres. College General Chemistry Study Guide Focuses mainly on educational books, textbooks, and business books. It offers free PDF downloads for educational purposes. College General Chemistry Study Guide Provides a large selection of free eBooks in different genres, which are available for download in various formats, including PDF. Finding specific College General Chemistry Study Guide, especially related to College General Chemistry Study Guide, might be challenging as theyre often artistic creations rather than practical blueprints. However, you can explore the following steps to search for or create your own Online Searches: Look for websites, forums, or blogs dedicated to College General Chemistry Study Guide, Sometimes enthusiasts share their designs or concepts in PDF format. Books and Magazines Some College General Chemistry Study Guide books or magazines might include. Look for these in online stores or libraries. Remember that while College General Chemistry Study Guide, sharing copyrighted material without permission is not legal. Always ensure youre either creating your own or obtaining them from legitimate sources that allow sharing and downloading. Library Check if your local library offers eBook lending services. Many libraries have digital catalogs where you can borrow College General Chemistry Study Guide eBooks for free, including popular titles. Online Retailers: Websites like Amazon, Google Books, or Apple Books often sell eBooks. Sometimes, authors or publishers offer promotions or free periods for certain books. Authors Website Occasionally, authors provide excerpts or short stories for free on their websites. While this might not be the College General Chemistry Study Guide full book , it can give you a taste of the authors writing style. Subscription Services Platforms like Kindle Unlimited or Scribd offer subscription-based access to a wide range of College General Chemistry Study Guide eBooks, including some popular titles.

FAQs About College General Chemistry Study Guide Books

How do I know which eBook platform is the best for me? Finding the best eBook platform depends on your reading preferences and device compatibility. Research different platforms, read user reviews, and explore their features before making a choice. Are free eBooks of good quality? Yes, many reputable platforms offer high-quality free eBooks, including classics and public domain works. However, make sure to verify the source to ensure the eBook credibility. Can I read eBooks without an eReader? Absolutely! Most eBook platforms offer web-based readers or mobile apps that allow you to read eBooks on your computer, tablet, or smartphone. How do I avoid digital eye strain while reading eBooks? To prevent digital eye strain, take regular breaks, adjust the font size and background color, and ensure proper lighting while reading eBooks. What the advantage of interactive eBooks? Interactive eBooks incorporate multimedia elements, quizzes, and activities, enhancing the reader engagement and providing a more immersive learning experience. College General Chemistry Study Guide is one of the best book in our library for free trial. We provide copy of College General Chemistry Study Guide in digital format, so the resources that you find are reliable. There are also many Ebooks of related with College General Chemistry Study Guide. Where to download College General Chemistry Study Guide online for free? Are you looking for College General Chemistry Study Guide PDF? This is definitely going to save you time and cash in something you should think about.

Find College General Chemistry Study Guide :

changed by chance my journey of triumph over tragedy

ch 25 physics study guide

[change your underwear life advice from a mothers perspective](#)

chagas disease part b 76 advances in parasitology

challenges of equality judaism state and education in nineteenth century france

[chains blood steel thistles warrior](#)

[chambo girls secondary school](#)

challenge mpc paper cutter manual

champion mobile home installation manual

[challenger 73 shop manual](#)

change your culture change your world companion to understanding kingdom culture

chambre obscure nicolaas beets ebook

cetai ainsi cyriel buyse
ch 10 practice test holt chemistry
challenger build manual

College General Chemistry Study Guide :

Ready New York CCLS English Language Arts... by Ready Ready New York CCLS English Language Arts Instruction Grade 3 ; Print length. 0 pages ; Language. English ; Publication date. January 1, 2016 ; ISBN-10. 1495705668. ELA Reading Program | i-Ready This ELA program has complex, authentic texts that engage students in opportunities to practice close reading strategies across a variety of genres and formats. Help Students Master the Next Gen ELA Learning Standards Ready New York, NGLS Edition Grade 4 Student Instruction Book for ELA. Download a free sample lesson to discover how Ready New York, Next Generation ELA ... Ready New York Common Core CCLS Practice English ... Ready New York Common Core CCLS Practice English Language Arts Grade 4 Student Book by Curriculum Associates - 2014. Ready new york ccls The lesson was created using the 2018 Ready Math New York CCLS Resource Book for Second Grade. Ready New York CCLS 5 ELA Instruction - Softcover Ready New York CCLS 5 ELA Instruction by Ready NY CCLS - ISBN 10: 1495765725 - ISBN 13: 9781495765728 - Curriculum Associates - 2018 - Softcover. 2014 Ready New York CCLS Common Core ELA ... 2014 Ready New York CCLS Common Core ELA Instruction Grade 7 (Ready) by Curriculum Associates (Editor) - ISBN 10: 0760983941 - ISBN 13: 9780760983942 ... 2016 Ready New York CCLS ELA Instruction Grade 4 2016 Ready New York CCLS ELA Instruction Grade 4 [Textbook Binding] [Jan 01, 2016] ... Ready New York CCLS Gr6 ELA Instruction Curriculum ... Ready New York CCLS Gr6 ELA Instruction Curriculum Assoc ISBN#978-0-8709-8393-5 ; Quantity. 1 available ; Item Number. 115662995949 ; Subject. Education. 2014 Ready New York CCLS Common Core ELA ... 2014 Ready New York CCLS Common Core ELA Instruction Grade 6 Teacher Resource Book (Ready) (ISBN-13: 9780760983997 and ISBN-10: 0760983992), was published ... Baotian Rocky Service Handleiding PDF | PDF | Tire | Brake This manual gives you information about the general structure, function, operation and maintenance methods of BT49QT-18E. It is of great importance to make ... User manual Baotian BT49QT-18E Rocky (English Manual. View the manual for the Baotian BT49QT-18E Rocky here, for free. This manual comes under the category scooters and has been rated by 3 people with ... BT49QT-9 - User Manual, Service Schedule & History This owner's handbook contains information necessary: • to enable you to get to know your Baotian BT49QT-9, to use it to the best advantage and to benefit ... Baotian Rocky BT49QT-18E Oct 17, 2020 — Service Manuals Werkplaatshandboek Baotian Rocky BT49QT-18E 2020-10-17 ; Author: arkAC ; Downloads: 12 ; Views: 810 ; First release: 17 October 2020. Manual Baotian BT49QT-18E - Rocky (page 1 of 22) (English) View and download the Manual of Baotian BT49QT-18E - Rocky Scooter (page 1 of 22) (English). Also support or get the manual by

email. Baotian BT49QT-7 User Manual Page 2 This manual gives you information about the general structure, function, operation and maintenance methods of BT49QT-7. In order to enable your beloved ... Baotian BT49QT-7 Service Manual View and Download Baotian BT49QT-7 service manual online. BT49QT-7 scooter pdf manual download. Also for: Bt49qt-8. Baotian Scooter's & Motorcycles service repair manuals PDF Baotian Scooter's & Motorcycles workshop & service manuals, owner's manual, parts catalogs, wiring diagrams free download PDF; fault codes list. SERVICE MANUAL SERVICE MANUAL. JIANGMEN SINO-HONGKONG BAOTIAN MOTORCYCLE INDUSTRIAL CO., LTD ... Effect periodic maintenance according to the instructions in the user's manual. Essentials of Strength Training and Conditioning, 4ed Developed by the National Strength and Conditioning Association (NSCA) and now in its fourth edition, Essentials of Strength Training and Conditioning is the ... Essentials of Strength Training and Conditioning Developed by the National Strength and Conditioning Association (NSCA) and now in its fourth edition, Essentials of Strength Training and Conditioning is ... Essentials of Strength Training and Conditioning 4th ... Developed by the National Strength and Conditioning Association (NSCA) and now in its fourth edition, Essentials of Strength Training and Conditioning is ... NSCA Store The NSCA Store offers the gear you need for your career as a fitness professional. Purchase apparel, educational books and resources, official NSCA ... NSCA -National Strength & Conditioning Association Top NSCA -National Strength & Conditioning Association titles ; Essentials of Strength Training and Conditioning ... NSCA NSCA's Certified Strength and Conditioning Specialist (CSCS) 4th Edition Online Study/CE Course Without Book.. (6). \$199.00 USD. Unit price /. BASICS OF STRENGTH AND CONDITIONING MANUAL by WA Sands · Cited by 53 — to the “Essentials of Strength Training and Conditioning” (3rd ed.) textbook (1). Through various reactions within the body, an intermediate molecule called ... Essentials of Strength Training and Conditioning - NSCA Developed by the National Strength and Conditioning Association (NSCA) and now in its fourth edition, Essentials of Strength Training and Conditioning is ... national strength conditioning association Exercise Technique Manual for Resistance Training-2nd Edition by NSCA -National Strength & Conditioning Association and a great selection of related books, ...