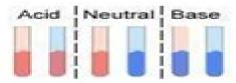
Student Exploration: Titration

Answers in the orange boxes

Vocabulary: acid, analyte, base, dissociate, equivalence point, indicator, litmus paper, molarity, neutralize, pH, strong acid, strong base, titrant, titration, titration curve, weak acid, weak base

Prior Knowledge Questions (Do these BEFORE using the Gizmo.)
There are several definitions of acids and bases. According to the
Brensted-Lowry definition, an **acid** is a substance that is capable of donating a
proton to another substance. A **base** is a substance that accepts protons. When
an acid and a base are combined, the acid is **neutralized** as the base accepts
the protons produced by the acid.



One way to determine if a solution is acidic or basic is to use **litmus paper**, as shown above. There are two types of litmus papers; red and blue.

How does litmus paper indicate an acid?

How does litmus paper indicate a neutral substance?

How does litmus paper indicate a base?

It turns red.

Red and blue strips stay the same (stay blue and red).

It turns blue.

Gizmo Warm-up

Litmus is an example of an **indicator**, a substance that changes color depending on its **pH** (pH is a measure of the concentration of protons, or H⁺ ions). In the Titration Gizmo, you will use indicators to show how acids are neutralized by bases, and vice versa.

To begin, check that 1.00 M NaOH is selected for the Burette, Mystery HBr is selected for the Flask, and Bromthymol blue is selected for the Indicator.

- 1. Look at the flask. What is the color of the bromthymol blue indicator?
- 2. What does this tell you about the pH of the solution in the flask?

TO read of PER.

It is acidic (below 6.0)

Yellow/orange

Solutions with a pH below 7.0 are acidic, while those with a pH above 7.0 are basic.

3. Move the slider on the burette to the top to add about 25 mL of NaOH to the flask. What happens, and what does this tell you about the pH of the flask?
It turns blue. This means the pH is above 7.6)

Titration Chem Study Guide Answers

John Krenos, Joseph Potenza, Loretta Jones, Lynn Koplitz, Thomas Spence

Titration Chem Study Guide Answers:

<u>Chemical Principles Study Guide/Solutions Manual</u> John Krenos, Joseph Potenza, Carl Hoeger, 2007-01-18 Written for general chemistry courses Chemical Principles helps students develop chemical insight by showing the connection between chemical principles and their applications

Chemical Principles Student's Study Guide & Solutions Manual John Krenos, Joseph Potenza, Loretta Jones, Lynn Koplitz, Thomas Spence, 2004-03-19 This combination manual is designed to help students avoid common mistakes and understand the material better The solutions manual section includes detailed answers and explanations to the odd numbered exercises in the text

"O" Level Study Guide - Chemistry Quite Easily Done",

CHEMISTRY HANDBOOK & STUDY GUIDE Gr11-12 NE Kevin Smith,2024-02-01 A comprehensive summary of Grade 11 12 Physics Simple logical summaries with example exam questions and work through solutions The book covers the fundamentals of Grade 11 12 Physics and complements the material in any class text

Chemistry, Student Study Guide James E. Brady, Fred Senese, 2008-01-28 The image on the front cover depicts a carbon nanotube emerging from a glowing plasma of hydrogen and carbon as it forms around particles of a metal catalyst Carbon nanotubes are a recently discovered allotrope of carbon Three other allotropes of carbon buckyballs graphite and diamond are illustrated at the left as is the molecule methane CH4 from which nanotubes and buckyballs can be made The element carbon forms an amazing number of compounds with structures that follow from simple methane found in natural gas to the complex macromolecules that serve as the basis of life on our planet The study of chemistry also follows from the simple to the more complex and the strength of this text is that it enables students with varied backgrounds to proceed together to significant levels of achievement

Chemistry for the IB Diploma Study and Revision Guide Christopher Talbot, Richard Harwood, 2017-07-24 Exam Board IB Level IB Subject Chemistry First Teaching September 2014 First Exam Summer 2016 Stretch your students to achieve their best grade with these year round course companions providing clear and concise explanations of all syllabus requirements and topics and practice questions to support and strengthen learning Consolidate revision and support learning with a range of exam practice questions and concise and accessible revision notes Practise exam technique with tips and trusted guidance from examiners on how to tackle questions Focus revision with key terms and definitions listed for each topic sub topic

Know Your 'O' Level Chemistry - A Study Guide, Student's Guide to Fundamentals of Chemistry Jo A.

Beran, 2013-10-22 Student's Guide to Fundamentals of Chemistry Fourth Edition provides an introduction to the basic chemical principles. This book deals with various approaches to chemical principles and problem solving in chemistry. Organized into 25 chapters this edition begins with an overview of how to define and recognize the more common names and symbols in chemistry. This text then discusses the historical development of the concept of atom as well as the historical determination of atomic weights for the elements. Other chapters consider how to calculate the molecular weight of a compound from its formula. This book discusses as well the characteristics of a photon in terms of its particle like properties.

and defines the wavelength frequency and speed of light The final chapter deals with the fundamental components of air and the classification of materials formed in natural waters This book is a valuable resource for chemistry students lecturers and instructors

Study Guide and Solutions Manual for Seager/Slabaugh's Chemistry for Today Seager/Slabaugh,2004

The fifth edition of the Study Guide and Student Solutions Manual has been updated to reflect all of the changes to the text

This ancillary tests the student on the learning objectives in each chapter and provides answers to all of the even numbered end of chapter exercises New additional activities have been added to include a review of each section of the chapter and a section entitled Tying It All Together with a Laboratory Application

Chemistry Lab Basics (Speedy Study Guides)

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