

Viziscience Catalog 2018

High School Chemistry

Basic Concepts

Matter

History of the Atom

Atomic Structure, Isotopes, & Ions

The Periodic Table

Isotopes and Relative abundance

Formulas of compounds

Molecular Formula & Empirical Formula

Polyatomic Ions - Oxyanions

Polyatomic Ions - Acids

Mole Concept & Stoichiometry

Balancing Equations

Moles & Molar Mass

Mole to Mole Stoichiometry

Dimensional Analysis for Stoichiometry

Percent Composition

Limiting Reactant

Percent Yield

Molarity & Solutions stoichiometry

Electron Configuration

Introduction to Electron Configurations

The Order of Electron Filling

Ground State and Excited State

Quantum Numbers

Coulomb's Law, Ionization Energy & PES

The Periodic Table Trends

Acids and Bases (Part I)

Acids and Bases Introduction

Arrhenius Theory

Bronsted-Lowry Theory

Lewis Theory

Conjugate Acids and Bases

Amphoteric Vs Amphiprotic

Neutralization

Acids and Bases (Part II)

Calculating pH & pOH

Strong and Weak Acids and Bases

Equilibrium Constants for Acids and Bases: K_a , K_b & K_w

Buffers - An Introduction

Determination of pH & Henderson-Hasselbalch Equation

Polyprotic Acids Dissociation

Calculate Sulfuric acid dissociation constants (K_{a1} and K_{a2}) using ICE table

Gas Laws

Introduction & Kinetic Theory

Ideal Gas Law

Avogadro's law

Charle's law

Boyle's Law

Gay-Lussac's Law

Dalton's Law of Partial Pressures

Atmospheric Pressure, Barometer & Pressure Units

Gas Law Extra Practice Problems

Thermodynamics

Entropy & The Laws of Thermodynamics

State Function

Enthalpy

Spontaneous & Non-Spontaneous Process, & Gibbs Free Energy

Hess Law

Collision Theory

Bond Energy

Redox & Electrochemistry

Chemical Reactions & REDOX

Practice - Oxidation numbers and balancing REDOX

Chemical Reactions (REDOX) - Voltaic Cells

Calculate Standard Cell Potentials