

Index

A

Acid Constant K_a and Base Constant K_b

4.7: Day 33- Acids and Bases

Acid Strength and Molecular Structure

4.7: Day 33- Acids and Bases

Activation Energy and Temperature

3.4: Day 21- Reaction Energy Diagram and Arrhenius Equation

addition polymers

2.6: Day 14- Macromolecules

alcohols

2.5: Day 13- Alcohols, Carboxylic Acids, Amines, Amides; Hydrogen Bonding

Aldehydes and Ketones

2.4: Day 12- Intermolecular Forces; Functional Groups

alkanes

1.7: Day 7- Covalent Molecular Substances; Hydrocarbons

alkenes

1.7: Day 7- Covalent Molecular Substances; Hydrocarbons

alkynes

1.7: Day 7- Covalent Molecular Substances; Hydrocarbons

amides

2.5: Day 13- Alcohols, Carboxylic Acids, Amines, Amides; Hydrogen Bonding

amines

2.5: Day 13- Alcohols, Carboxylic Acids, Amines, Amides; Hydrogen Bonding

amino acids

2.7: Day 15- Condensation Polymers, Proteins

4.8: Day 34- Acid-Base Reactions

6.10: Amino Acids

Aromatic Molecules

2.1: Day 9- Bond Properties; Valence Bond Theory

Arrhenius Equation and Arrhenius Plot

3.4: Day 21- Reaction Energy Diagram and Arrhenius Equation

Atomic Energy Levels

1.2: Day 2- Atomic Spectra and Atomic Orbitals

Atomic Orbitals and Quantum Numbers

1.2: Day 2- Atomic Spectra and Atomic Orbitals

atomic radius

6.4: Radius

atomic spectra

1.2: Day 2- Atomic Spectra and Atomic Orbitals

atomic weight

6.1: Atomic Weights

Atoms with More than a Single Electron

1.3: Day 3- Orbital Energy and Electron Configuration

Atoms, Molecules, and Ions

1.1: Day 1- Chemistry, Matter, Energy, Models

autoionization of water

4.7: Day 33- Acids and Bases

Average Bond Enthalpy

6.8: Bond Enthalpy and Length

Average Bond Length

6.8: Bond Enthalpy and Length

B

Balancing Redox Reactions

5.3: Day 38- Oxidation-Reduction Reactions, Voltaic Cells

Base Pairing

2.8: Day 16- DNA and Lipids

Basics of Organic Nomenclature

6.15: Basics of Organic Nomenclature

Bimolecular Elementary Reactions

3.5: Day 22- Elementary Reactions

blackbody radiation

7.2: Review- Photons

Bond Enthalpy and Reaction Enthalpy Change

4.1: Day 27- Thermochemistry and Enthalpy

Bond Length and Bond Enthalpy

1.6: Day 6- Molecular Orbitals; Lewis Structures

Bond Polarity

2.1: Day 9- Bond Properties; Valence Bond Theory

Bonding in Molecules with More Than

Two Atoms

1.6: Day 6- Molecular Orbitals; Lewis Structures

Bonds, Molecules, and Structures

2.1: Day 9- Bond Properties; Valence Bond Theory

buffer capacity

5.1: Day 36- Buffer Solutions

buffer solutions

5.1: Day 36- Buffer Solutions

C

Calculating ΔG°

4.2: Day 28- Entropy, Gibbs Free Energy

Calculations Involving Equilibrium

Constants

4.3: Day 29- Gibbs Free Energy, Chemical

Equilibrium

calorimetry

4.1: Day 27- Thermochemistry and Enthalpy

carboxylic acids

2.5: Day 13- Alcohols, Carboxylic Acids, Amines, Amides; Hydrogen Bonding

Catalysts and Equilibrium

4.5: Day 31- Le Châtelier's Principle, Equilibrium and Gibbs Free Energy

Catalysts and Reaction Mechanisms

3.6: Day 23- Reaction Mechanisms

Cell Notation

5.4: Day 39- Voltaic Cells, Half-Cell Potentials

chemical equilibrium

4.3: Day 29- Gibbs Free Energy, Chemical Equilibrium

Chemical Symbols, Formulas, and Equations

1.1: Day 1- Chemistry, Matter, Energy, Models

Commercial Batteries

5.6: Day 41- Electrolysis; Commercial Batteries

Concentration Cells

5.5: Day 40- Thermodynamic Properties of Voltaic and Electrolytic Cells

Concentration Equilibrium Constants

4.3: Day 29- Gibbs Free Energy, Chemical Equilibrium

Condensation Polymers

2.7: Day 15- Condensation Polymers, Proteins

Conformations

2.3: Day 11- Molecular Structure- Isomers

Conjugated Diene Polymers

2.6: Day 14- Macromolecules

constitutional isomers

2.3: Day 11- Molecular Structure- Isomers

Constructive and Destructive Interference

7.5: In Depth- In-Phase and Out-of-Phase

Copolymers

2.6: Day 14- Macromolecules

Covalent Molecular Substances

1.7: Day 7- Covalent Molecular Substances; Hydrocarbons

D

Definition of Acids and Bases

4.7: Day 33- Acids and Bases

DNA

2.8: Day 16- DNA and Lipids

E

effect of temperature

4.5: Day 31- Le Châtelier's Principle, Equilibrium and Gibbs Free Energy

effective nuclear charge

1.3: Day 3- Orbital Energy and Electron Configuration

electrolysis

5.6: Day 41- Electrolysis; Commercial Batteries

electromagnetic radiation

1.2: Day 2- Atomic Spectra and Atomic Orbitals

electron affinity

6.6: Electron Affinity

electron configurations

1.3: Day 3- Orbital Energy and Electron Configuration

Electron Configurations and Bond Order

1.5: Day 5- Ionic Compounds; Covalent Bonding

Electron Configurations of Monoatomic Ions

1.4: Day 4- Periodic Trends; Forces between Atoms

electronegativity

2.1: Day 9- Bond Properties; Valence Bond Theory
6.9: Electronegativity

Elemental Abundance in Earth Crust

6.2: Elemental Abundances

Elemental Abundance in Solar System

6.2: Elemental Abundances

elementary reactions

3.5: Day 22- Elementary Reactions

Energy, Temperature, and Heat

4.1: Day 27- Thermochemistry and Enthalpy

enthalpy

4.1: Day 27- Thermochemistry and Enthalpy

Entropy and Microstates

4.2: Day 28- Entropy, Gibbs Free Energy

Enzyme Denaturation and Inhibitors

3.7: Day 24- Enzymes and Enzyme Catalysis

enzymes

3.7: Day 24- Enzymes and Enzyme Catalysis

equilibrium approximation

3.6: Day 23- Reaction Mechanisms

Equilibrium Constant and Partial Pressure

4.3: Day 29- Gibbs Free Energy, Chemical Equilibrium

esters

2.4: Day 12- Intermolecular Forces; Functional Groups

ethers

2.4: Day 12- Intermolecular Forces; Functional Groups

Exceptions to the Octet Rule

1.6: Day 6- Molecular Orbitals; Lewis Structures

F

Factors Affecting Reaction Rates

3.1: Day 18- Reaction Rate

Factors that Affect the Rate Constant

3.4: Day 21- Reaction Energy Diagram and Arrhenius Equation

Forces Between Atoms

1.4: Day 4- Periodic Trends; Forces between Atoms

formal charge

2.1: Day 9- Bond Properties; Valence Bond Theory

Fuel Cells

5.6: Day 41- Electrolysis; Commercial Batteries

functional groups

2.4: Day 12- Intermolecular Forces; Functional Groups

G

General Guidance for Drawing Lewis Structures

1.6: Day 6- Molecular Orbitals; Lewis Structures

Gibbs free energy

4.2: Day 28- Entropy, Gibbs Free Energy

Gibbs Free Energy and Equilibrium

4.5: Day 31- Le Châtelier's Principle, Equilibrium and Gibbs Free Energy

Gibbs Free Energy and Work

4.6: Day 32- Gibbs Free Energy and Work, Kinetic Metastability

Gibbs Free Energy in Biological Systems

4.6: Day 32- Gibbs Free Energy and Work, Kinetic Metastability

Glycerolipids

2.8: Day 16- DNA and Lipids

Ground State Electron Configuration of Atoms

6.3: Electron Configuration

H

Hess's Law

4.1: Day 27- Thermochemistry and Enthalpy

Heterogeneous Catalysts

3.8: Day 25- Homogeneous and Heterogeneous Catalysis

Homogeneous Catalysis

3.8: Day 25- Homogeneous and Heterogeneous Catalysis

Hybridization and Bond Angles

2.2: Day 10- Hybrid Orbitals; Molecular Geometry

Hybridization in Resonance Hybrids

2.2: Day 10- Hybrid Orbitals; Molecular Geometry

hydrocarbons

1.7: Day 7- Covalent Molecular Substances; Hydrocarbons

I

ICE table

4.4: Day 30- ICE Table, Reaction Quotient, Le Châtelier's Principle

integrated rate laws

3.2: Day 19- Integrated Rate Law

intermolecular forces

2.3: Day 11- Molecular Structure- Isomers

Introduction to Voltaic Cells

5.3: Day 38- Oxidation-Reduction Reactions, Voltaic Cells

ionic compounds

1.5: Day 5- Ionic Compounds; Covalent Bonding

Ionic Radii

1.4: Day 4- Periodic Trends; Forces between Atoms

Ionic Radius

6.4: Radius

Ionization Constants for Select Acids

6.12: Acid-Base Ionization Constant

Ionization Constants for Select Bases

6.12: Acid-Base Ionization Constant

ionization energy

6.5: Ionization Energies

Isomeric Structures

2.3: Day 11- Molecular Structure- Isomers

K

Kinetic Metastability

4.6: Day 32- Gibbs Free Energy and Work, Kinetic Metastability

L

Lattice Energy

1.5: Day 5- Ionic Compounds; Covalent Bonding

Lewis Structures for Covalent Molecules

1.6: Day 6- Molecular Orbitals; Lewis Structures

Line Structures

2.3: Day 11- Molecular Structure- Isomers

lipids

2.8: Day 16- DNA and Lipids

M

Matter, Energy, Models

1.1: Day 1- Chemistry, Matter, Energy, Models

Metals

1.4: Day 4- Periodic Trends; Forces between Atoms

Method of Initial Rates

3.1: Day 18- Reaction Rate

Molecular Orbital (MO) Diagram

1.5: Day 5- Ionic Compounds; Covalent Bonding

Molecules with More Than One Central Atom

2.2: Day 10- Hybrid Orbitals; Molecular Geometry

N

Nernst equation

5.5: Day 40- Thermodynamic Properties of Voltaic and Electrolytic Cells

O

Orbital Energy Level Diagrams

1.3: Day 3- Orbital Energy and Electron Configuration

P

Periodic Variation in Atomic Radius

1.3: Day 3- Orbital Energy and Electron Configuration

Periodic Variation in Electron Affinities

1.4: Day 4- Periodic Trends; Forces between Atoms

Periodic Variation in Ionization Energies

1.4: Day 4- Periodic Trends; Forces between Atoms

Petroleum Chemistry

1.7: Day 7- Covalent Molecular Substances; Hydrocarbons

pH and pOH

4.7: Day 33- Acids and Bases

Phospholipids

2.8: Day 16- DNA and Lipids

Planck's Quantum Theory

7.2: Review- Photons

polyamides

2.7: Day 15- Condensation Polymers, Proteins

Polyatomic Ions (common)

6.7: Common Polyatomic Ions

polyesters

2.7: Day 15- Condensation Polymers, Proteins

Polymer Structure and Properties

2.6: Day 14- Macromolecules

polyprotic acids

4.8: Day 34- Acid-Base Reactions

Predicting the Geometry of Bonds Around an Atom

2.2: Day 10- Hybrid Orbitals; Molecular Geometry

Predicting the Sign of ΔS

4.2: Day 28- Entropy, Gibbs Free Energy

primary batteries

5.6: Day 41- Electrolysis; Commercial Batteries

Properties of Ionic Compounds

1.5: Day 5- Ionic Compounds; Covalent Bonding

Protein Folding and Denaturation

2.7: Day 15- Condensation Polymers, Proteins

protein structure

2.7: Day 15- Condensation Polymers, Proteins

proteins

2.7: Day 15- Condensation Polymers, Proteins

Proteins, Lipids, and Fatty Acids

2.8: Day 16- DNA and Lipids

R

radioactive decay

3.3: Day 20- Rate of Radioactive Decay

radiometric dating

3.3: Day 20- Rate of Radioactive Decay

Reaction Between Amphotropic Species

4.8: Day 34- Acid-Base Reactions

Reaction Energy Diagrams

3.4: Day 21- Reaction Energy Diagram and Arrhenius Equation

Reaction Order and Rate Constant Units

3.1: Day 18- Reaction Rate

reaction quotient

[4.4: Day 30- ICE Table, Reaction Quotient, Le Châtelier's Principle](#)

reaction rate

[3.1: Day 18- Reaction Rate](#)

Reactions of Alcohols, Amines, and Carboxylic Acids

[2.5: Day 13- Alcohols, Carboxylic Acids, Amines, Amides; Hydrogen Bonding](#)

Redox Reactions and Oxidation Number

[5.3: Day 38- Oxidation-Reduction Reactions, Voltaic Cells](#)

Relationships among $\Delta_r G^\circ$, K° , and E°_{cell}

[5.5: Day 40- Thermodynamic Properties of Voltaic and Electrolytic Cells](#)

Relative Rates of Reaction

[3.1: Day 18- Reaction Rate](#)

resonance structures

[2.1: Day 9- Bond Properties; Valence Bond Theory](#)

S

Second Law of Thermodynamics

[4.2: Day 28- Entropy, Gibbs Free Energy](#)

secondary batteries

[5.6: Day 41- Electrolysis; Commercial Batteries](#)

Selection of a Suitable Buffer

[5.1: Day 36- Buffer Solutions](#)

Solubility Product Constants for Select Compounds

[6.11: Solubility Product Constant](#)

Standard Electrode Potentials in Acidic Aqueous Solution

[6.14: Standard Potential](#)

Standard Electrode Potentials in Basic Aqueous Solution

[6.14: Standard Potential](#)

standard enthalpy of formation

[4.1: Day 27- Thermochemistry and Enthalpy](#)

Steric Factor

[3.4: Day 21- Reaction Energy Diagram and Arrhenius Equation](#)

Structure, Energy, and States of Matter

[1.1: Day 1- Chemistry, Matter, Energy, Models](#)

Substances and Chemical Reactions

[1.1: Day 1- Chemistry, Matter, Energy, Models](#)

T

Temperature Dependence of Gibbs Free Energy

[4.3: Day 29- Gibbs Free Energy, Chemical Equilibrium](#)

The Heisenberg Uncertainty Principle

[7.4: In Depth- The Heisenberg Uncertainty Principle](#)

The Periodic Table

[1.1: Day 1- Chemistry, Matter, Energy, Models](#)

The Photoelectric Effect

[7.2: Review- Photons](#)

The Quantum Mechanical Model of the Hydrogen Atom

[1.2: Day 2- Atomic Spectra and Atomic Orbitals](#)

Thermodynamic Values for Select Compounds

[6.13: Thermodynamic](#)

Third Law of Thermodynamics

[4.2: Day 28- Entropy, Gibbs Free Energy](#)

titration

[5.2: Day 37- Acid-Base Titration](#)

titration curves

[5.2: Day 37- Acid-Base Titration](#)

Titration of Polyprotic Acids and Bases

[5.2: Day 37- Acid-Base Titration](#)

Trimolecular Elementary Reactions

[3.5: Day 22- Elementary Reactions](#)

Types of Hybrid Orbitals

[2.2: Day 10- Hybrid Orbitals; Molecular Geometry](#)

Types of Radioactive Decay

[3.3: Day 20- Rate of Radioactive Decay](#)

U

Unimolecular Elementary Reactions

[3.5: Day 22- Elementary Reactions](#)

Unpaired Electrons and Magnetism

[1.4: Day 4- Periodic Trends; Forces between Atoms](#)

V

valence bond theory

[2.1: Day 9- Bond Properties; Valence Bond Theory](#)

valence electrons

[1.3: Day 3- Orbital Energy and Electron Configuration](#)

Various Addition Polymers

[2.6: Day 14- Macromolecules](#)

Voltaic Cell Potential

[5.4: Day 39- Voltaic Cells, Half-Cell Potentials](#)

W

wave properties

[7.1: Review- Waves](#)

waves

[7.1: Review- Waves](#)