

Index

A

Absolute Temperature

[9.8: Charles's Law](#)

accelerated eutrophication

[12.6: Group VA Elements](#)

accuracy

[1.3: Handling Large and Small Numbers](#)

[1.7: Errors in Measurement](#)

acid

[11.6: Acid-Base Reactions](#)

[11.7: Acids](#)

[14.3: pH and pOH](#)

acid anhydride

[11.14: Lewis Acids and Bases](#)

acid ionization constant

[13.4: The Law of Chemical Equilibrium](#)

acid value

[14.10.1: Foods- Acid Value and the Quality of Fats and Oils](#)

acidic

[11.7: Acids](#)

actinoid

[5.17: Electron Configurations and the Periodic Table](#)

activated complex

[18.5: Unimolecular Processes](#)

activation energy

[18.5: Unimolecular Processes](#)

active site

[18.12: Heterogeneous Catalysis](#)

addition of products or reactants

[13.12: Effect of Adding a Reactant or Product](#)

addition polymer

[8.23: Synthetic Macromolecules- Some Applied Organic Chemistry](#)

[8.24: Addition Polymers](#)

addition reaction

[8.14: Alcohols](#)

adsorption

[10.23: Chromatography](#)

[18.12: Heterogeneous Catalysis](#)

alcohol

[8.14: Alcohols](#)

aldehyde

[8.16: Aldehydes and Ketones](#)

aliquot

[3.12: Diluting and Mixing Solutions](#)

alkaliynes

[11.6: Acid-Base Reactions](#)

alkali metal

[4.2: Groups of Related Elements](#)

[12.2: Group IA - Alkali Metals](#)

alkaline earth metal

[4.2: Groups of Related Elements](#)

[12.3: Group II- Alkaline Earths](#)

alkane

[8.5: Organic Compounds- Hydrocarbons](#)

[8.6: Alkanes](#)

alkene

[8.10: Unsaturated Hydrocarbons](#)

alkyl group

[8.14: Alcohols](#)

alkyne

[8.10: Unsaturated Hydrocarbons](#)

Allotropes

[8.21: Diamond and Graphite](#)

alpha carbon

[20.12: Polypeptide Chains](#)

alpha emission

[19.2: Naturally Occurring Radioactivity](#)

alpha helix

[20.15: Secondary Protein Structure](#)

Aluminum

[17.4: Aluminum Production](#)

amalgam

[17.3: Electrolysis of Brine](#)

amide

[8.19: Organic Nitrogen Compounds](#)

amine

[8.19: Organic Nitrogen Compounds](#)

amines

[11.11: Weak Bases](#)

Amino acid

[8.19: Organic Nitrogen Compounds](#)

[20.3: The Building Blocks of Biochemistry](#)

Ammonia

[11.11: Weak Bases](#)

Amorphous

[10.8: Amorphous Materials- Glasses](#)

amphiprotic

[11.12: Amphiprotic Species](#)

amphoteric

[12.4: Group IIIA](#)

Anaerobic Fermentation

[3.9.1: Biology- Anaerobic Fermentation in Beer and Lactic Acid in Muscles](#)

angular

[7.4: Molecules with Lone Pairs](#)

angular momentum quantum number

[5.9: Quantum Numbers \(Electronic\)](#)

anion

[6.2: Ionic Bonding](#)

Anions of weak acids

[11.11: Weak Bases](#)

anode

[17.2: Electrolysis](#)

antibonding molecular orbital

[21.7: Molecular Orbitals](#)

anticodon

[20.22: Transcription and Translation](#)

antinode

[5.4: The Wave Nature of the Electron](#)

antiparallel

[20.20: The Double Helix](#)

aqueous solution

[3.11: Solution Concentrations](#)

aromatic hydrocarbon

[8.5: Organic Compounds- Hydrocarbons](#)

[8.9: Aromatic Hydrocarbons](#)

Arrhenius equation

[18.10: The Effect of Temperature](#)

Arrhenius plot

[18.10: The Effect of Temperature](#)

artificial nuclear reaction

[19.4: Artificially Induced Nuclear Reactions](#)

artificially induced nuclear reactions

[19.5: Bombardment with Positive Ions](#)

atmosphere

[9.3: Pressure](#)

atmospheric pressure

[9.3: Pressure](#)

atom

[1.2: What Chemists Do](#)

atom economy

[3.2.2: Environment- Atom Efficiency and the 2006 Presidential Green Chemistry Award](#)

atomic number

[4.10: The Nucleus](#)

atomic theory

[2.1: Prelude to Atoms and Reactions](#)

atomic weight

[2.6: Atomic Weights](#)

aufbau principle

[5.13: Atoms Having More Than One Electron](#)

Avogadro's law

[9.5: Gas Laws](#)

[9.6: Avogadro's Law](#)

Avogadro's number

[2.9: The Amount of Substance](#)

[2.10: The Avogadro Constant](#)

azeotrope

[10.22: Distillation](#)

B

background radiation

[19.11: Units of Radiation Dose](#)

balance

[1.6: Measurements, Quantities, and Unity Factors](#)

Balancing Redox Equations

[11.17: Balancing Redox Equations](#)

band theory

[22.2: Metallic Bonding](#)

barometer

[9.4: Measurement of Pressure](#)

barrier to rotation

[7.7: Orbital Descriptions of Multiple Bonds](#)

[8.10: Unsaturated Hydrocarbons](#)

base

[11.6: Acid-Base Reactions](#)

[11.8: Bases](#)

[14.3: pH and pOH](#)

base ionization constant

[13.4: The Law of Chemical Equilibrium](#)

base unit

[1.4: The International System of Units \(SI\)](#)

Basic

[11.8: Bases](#)

basic oxygen furnace

[22.6: Refining of Metals](#)

battery

[17.11: Storage Batteries](#)

Bayer Process

[12.4: Group IIIA](#)

[22.4: Beneficiation](#)

belt of stability

[19.8: Nuclear Stability](#)

beneficiation

- 22.3: Metallurgy
- 22.4: Beneficiation

bent

- 7.4: Molecules with Lone Pairs

bent bond

- 7.7: Orbital Descriptions of Multiple Bonds

benzene ring

- 7.14: Resonance
- 8.9: Aromatic Hydrocarbons

beta emission

- 19.2: Naturally Occurring Radioactivity

beta sheet

- 20.15: Secondary Protein Structure

bilayer

- 20.6: Polar Lipids

bimolecular process

- 18.6: Bimolecular Processes

binary compound

- 6.9: Binary Ionic Compounds and Their Properties

binding energy per nucleon

- 19.13: Mass-Energy Relationships

biodiesel

- 3.4.1: Environment- Synthesis of Biodiesel Fuel

biogenesis

- 7.9.1: Biology - Polarizability of Biologically Significant Atoms

biosphere

- 20.3: The Building Blocks of Biochemistry

blast furnace

- 22.5: Reduction of Metals

Bohr model

- 5.4: The Wave Nature of the Electron

Boiling

- 10.9: Phase Transitions

boiling point

- 10.12: Boiling Point

boiling point elevation

- 10.25: Boiling-Point Elevation and Freezing-Point Depression

Boltzmann constant

- 16.5: Thermodynamic Probability W and Entropy

bomb calorimeter

- 15.7: Measuring the Enthalpy Change

bond energy

- 6.13: The Covalent Bond
- 15.10: Bond Enthalpies

bond enthalpy

- 15.10: Bond Enthalpies
- 15.11: Bond Enthalpies and Exothermic or Endothermic Reactions

bond length

- 6.19: Atomic Sizes

bond line

- 6.14: Covalent Molecules and the Octet Rule

bonding molecular orbital

- 21.7: Molecular Orbitals

Boyle's Law

- 9.5: Gas Laws
- 9.7: Boyle's Law

branched chain

- 8.6: Alkanes

breeder reactor

- 19.16: Breeder Reactors

buffer

- 14.8: Buffer Solutions

buffer solution

- 14.8: Buffer Solutions

C

calorie

- 3.7: Energy

calorimeter

- 15.7: Measuring the Enthalpy Change

calorimeter constant

- 15.7: Measuring the Enthalpy Change

calorimetry

- 15.7: Measuring the Enthalpy Change

carbohydrate

- 20.3: The Building Blocks of Biochemistry
- 20.7: Carbohydrates

carbon

- 20.2: The Elements of Life

carbonyl group

- 8.16: Aldehydes and Ketones

carboxyl group

- 8.17: Carboxylic Acids

carboxylic acid

- 8.17: Carboxylic Acids
- 11.10: Weak Acids

carrier gas

- 10.23: Chromatography

Catalysis

- 18.11: Catalysis

catalyst

- 18.2: The Rate of Reaction
- 18.3: The Rate Equation
- 18.9: 18.8-Increasing the Rate of a Reaction
- 18.11: Catalysis

catalytic cracking

- 8.10: Unsaturated Hydrocarbons

catenation

- 8.5: Organic Compounds- Hydrocarbons

cathode

- 4.9: The Electron
- 17.2: Electrolysis

cathode ray tube

- 4.9: The Electron

cation

- 6.2: Ionic Bonding

Cell Notation

- 17.9: Cell Notation and Conventions

cell reaction

- 17.9: Cell Notation and Conventions

chalcogen

- 4.2: Groups of Related Elements
- 12.7: Group VIA- Chalcogens

change in pressure

- 13.10: The Effect of a Change in Pressure

Charles's Law

- 9.5: Gas Laws
- 9.8: Charles's Law

chelating agent

- 22.10: Chelating Agents

chemical equation

- 3.5: Analysis of Compounds

chemical equilibrium

- 13.1: Prelude to Equilibria
- 13.2: The Equilibrium State
- 13.4: The Law of Chemical Equilibrium
- 13.11: The Effect of a Change in Temperature

chemical formula

- 2.3: The Atomic Theory

chemical property

- 6.12: Chemical Properties

chemical reaction

- 1.2: What Chemists Do

chiral carbon

- 8.8: Properties of Alkanes

chirality

- 20.13: The Amino Acids

chromatography

- 10.21: The Separation of Mixtures
- 10.23: Chromatography

cis configuration

- 7.7: Orbital Descriptions of Multiple Bonds
- 8.10: Unsaturated Hydrocarbons

ClF₄⁺

- 10.5: Closest-Packed Structures

coding strand

- 20.22: Transcription and Translation

codon

- 20.19: Information Storage

coefficient

- 2.13: Balancing Chemical Equations
- 18.2: The Rate of Reaction

coinage metal

- 4.2: Groups of Related Elements

coke

- 22.5: Reduction of Metals

colligative property

- 10.24: Colligative Properties of Solutions

colloid

- 10.27: Colloids

colloidal suspension

- 10.27: Colloids

column

- 10.23: Chromatography

combustion

- 8.8: Properties of Alkanes

common ion effect

- 14.1: Prelude to Ionization of Water
- 14.12: The Common-Ion Effect

complementary

- 20.20: The Double Helix

complex ion

- 22.8: Coordination Compounds

compound

- 1.2: What Chemists Do
- 2.3.1: Foods- Elemental Diets
- 2.4: Macroscopic and Microscopic Views of a Chemical Reaction

compressibility

- 9.2: Property of Gases

concentration

- 1.10: Conversion Factors and Functions
- 3.11: Solution Concentrations
- 10.18: Measuring the Composition of a Solution

condensation polymer

- 8.23: Synthetic Macromolecules- Some Applied Organic Chemistry
- 8.25: Condensation Polymers

condensation reaction

8.18: Esters

condensed phase

2.2: Macroscopic Properties and Microscopic Models

Conformations

8.6: Alkanes

conjugate acid

11.13: Conjugate Acid-Base Pairs

conjugate base

11.13: Conjugate Acid-Base Pairs

conjugated chain

21.9: Conjugated Systems

conjugated protein

20.11: Proteins

conjugated system

21.9: Conjugated Systems

constructive interference

21.2: The Nature of Electromagnetic Radiation

conversion factor

1.10: Conversion Factors and Functions

coordination complex

22.8: Coordination Compounds

coordination number

10.5: Closest-Packed Structures

coordination sphere

22.8: Coordination Compounds

copper

17.5: Refining of Copper

copper refining

17.5: Refining of Copper

corrosion

22.7: Corrosion

coulomb

4.9: The Electron

17.7: Quantitative Aspects of Electrolysis

covalent bond

6.1: Prelude to Chemical Bonding

6.13: The Covalent Bond

covalent compound

8.2: Covalent Compounds and Intermolecular Forces

covalent radius

6.19: Atomic Sizes

critical mass

19.14: Nuclear Fission

19.14.1: Nuclear Fission and WWII

critical point

10.13: Critical Temperature and Pressure

critical pressure

10.13: Critical Temperature and Pressure

critical temperature

10.13: Critical Temperature and Pressure

Crystal Lattice

6.2: Ionic Bonding

Crystal Structure

10.3: Lattices and Unit Cells

Crystal Systems

10.4: Crystal Systems

Crystals

10.4: Crystal Systems

cubic centimeter

1.8: Volume

cubic closest packing

10.5: Closest-Packed Structures

cycloalkane

8.5: Organic Compounds- Hydrocarbons

8.7: Cycloalkanes

cyclotron

19.5: Bombardment with Positive Ions

D

Dalton

9.12: Dalton's Law of Partial Pressures

Dalton's atomic theory

2.3: The Atomic Theory

Dalton's Law of Partial Pressure

9.12: Dalton's Law of Partial Pressures

Daniell cell

17.8: Galvanic Cells

Decay Chain

19.3: Radioactive Series

delocalized electrons

21.8: Delocalized Electrons

density

1.9: Density

descriptive chemistry

4.1: Prelude to Atomic Structure

destructive distillation

8.14: Alcohols

destructive interference

21.2: The Nature of Electromagnetic Radiation

Deviations from Ideal Gas Law

9.18: Deviations from the Ideal Gas Law

diagonal relationship

12.3: Group II- Alkaline Earths

diamagnetism

5.9: Quantum Numbers (Electronic)

21.7: Molecular Orbitals

diamond

8.21: Diamond and Graphite

diffusion

9.16: Kinetic Theory of Gases - Graham's Law of Diffusion

dipole

7.9: Polarizability

dipole force

8.3: Dipole Forces

dipole moment

7.9: Polarizability

7.9.1: Biology - Polarizability of Biologically

Significant Atoms

diprotic acid

11.10: Weak Acids

diradical

7.2: Exceptions to the Octet Rule

direction of a reaction

13.8: Predicting the Direction of a Reaction

Disaccharide

20.9: Disaccharides

discharge tube

21.3: Atomic Spectra and the Bohr Theory

disorder

16.11: Entropy, Randomness, and Disorder

dispersion forces

8.4: London Forces

disproportionation

12.2: Group IA - Alkali Metals

distillation

8.5: Organic Compounds- Hydrocarbons

10.12: Boiling Point

10.21: The Separation of Mixtures

10.22: Distillation

distinguishing electron

5.17: Electron Configurations and the Periodic Table

Distribution of Molecular Speed

9.17: Kinetic Theory of Gases- The Distribution of Molecular Speeds

double bond

6.15.3: Multiple Bonds

doublet

21.4: Bohr Theory of the Atom

dynamic equilibrium

10.11: Vapor-Liquid Equilibrium

13.13: The Molecular View of Equilibrium

E

EDTA

22.10: Chelating Agents

effective nuclear charge

5.14: Hydrogen, Helium, Lithium

effusion

9.16: Kinetic Theory of Gases - Graham's Law of Diffusion

electrical potential difference

17.10: Electromotive Force of Galvanic Cells

electrode

4.9: The Electron

11.2: Ions in Solution (Electrolytes)

17.2: Electrolysis

electrolysis

12.2: Group IA - Alkali Metals

17.1: Prelude to Electrochemistry

17.2: Electrolysis

17.4: Aluminum Production

17.5: Refining of Copper

17.7: Quantitative Aspects of Electrolysis

electrolyte

11.2: Ions in Solution (Electrolytes)

electrolytic cell

17.1: Prelude to Electrochemistry

Electrolytic Refining

17.5: Refining of Copper

electromotive force

17.10: Electromotive Force of Galvanic Cells

17.13: Galvanic Cells and Free Energy

electron

4.9: The Electron

4.11: Atomic Structure and Isotopes

electron affinity

6.3: Energy and the Formation of Ions

6.8: Electron Affinities

electron capture

19.7: Further Modes of Decay - Positron Emission and Electron Capture

electron cloud

5.6: The Uncertainty Principle

electron configuration

5.14: Hydrogen, Helium, Lithium

5.16: Electron Configurations

5.17: Electron Configurations and the Periodic Table

electron deficient

7.2: Exceptions to the Octet Rule

electron density

5.6: The Uncertainty Principle

electron gas

[22.2: Metallic Bonding](#)

electron sea

[22.2: Metallic Bonding](#)

Electron Spin

[5.14: Hydrogen, Helium, Lithium](#)

electronegativity

[7.11: Electronegativity](#)

electronic energy

[15.4: Internal Energy](#)

electroplating

[17.6: Electroplating](#)

electropositive

[7.11: Electronegativity](#)

element

[1.2: What Chemists Do](#)

[2.3: The Atomic Theory](#)

[2.3.1: Foods- Elemental Diets](#)

elementary process

[18.8: 18.7-Reaction Mechanisms](#)

emission spectrum

[21.3: Atomic Spectra and the Bohr Theory](#)

empirical formula

[2.12: Formulas and Composition](#)

endothermic

[3.6: Thermochemistry](#)

[3.8: Thermochemical Equations](#)

endothermic reaction

[15.11: Bond Enthalpies and Exothermic or Endothermic Reactions](#)

Endpoint

[3.13: Titrations](#)

[14.10: Titration Curves](#)

energy

[3.7: Energy](#)

energy factor

[13.13: The Molecular View of Equilibrium](#)

[16.16: Equilibrium Constants Revisited](#)

energy level

[16.8: Dependence of S on Molecular Structure](#)

enthalpy

[15.6: Enthalpy](#)

Enthalpy change

[3.8: Thermochemical Equations](#)

[15.6: Enthalpy](#)

enthalpy of fusion

[10.10: Enthalpy of Fusion and Enthalpy of Vaporization](#)

enthalpy of solution

[11.4: Hydration of Ions](#)

enthalpy of vaporization

[10.10: Enthalpy of Fusion and Enthalpy of Vaporization](#)

entropy

[16.5: Thermodynamic Probability W and Entropy](#)

[16.11: Entropy, Randomness, and Disorder](#)

[16.12: Measuring the Entropy](#)

[16.13: Including the Surroundings](#)

entropy change

[16.10: Entropy Changes in Gaseous Reactions](#)

entropy value trends

[16.9: Some Trends In Entropy Values](#)

enzyme

[18.9: 18.8-Increasing the Rate of a Reaction](#)

[20.11: Proteins](#)

Equilibria

[13.1: Prelude to Equilibria](#)

[13.2: The Equilibrium State](#)

equilibrium

[10.11: Vapor-Liquid Equilibrium](#)

[13.1: Prelude to Equilibria](#)

[13.2: The Equilibrium State](#)

[13.9: Le Chatelier's Principle](#)

[13.13: The Molecular View of Equilibrium](#)

equilibrium concentration

[14.4: The pH of Solutions of Weak Acids](#)

equilibrium constant

[13.3: The Equilibrium Constant](#)

[13.4: The Law of Chemical Equilibrium](#)

[13.6: Calculating the Extent of a Reaction](#)

[13.13: The Molecular View of Equilibrium](#)

[16.16: Equilibrium Constants Revisited](#)

equilibrium law

[13.12: Effect of Adding a Reactant or Product](#)

equilibrium state

[10.11: Vapor-Liquid Equilibrium](#)

[13.2: The Equilibrium State](#)

equivalence point

[3.13: Titrations](#)

[14.10: Titration Curves](#)

ester

[8.18: Esters](#)

ether

[8.15: Ethers](#)

ethylenediamine

[22.10: Chelating Agents](#)

Exceptions to the ideal gas law

[9.18: Deviations from the Ideal Gas Law](#)

Exceptions to the Octet Rule

[7.2.1: Biology- Biologically Active Exceptions to the Octet Rule](#)

excess reactant

[3.3.1: Cultural Connections- Anthropology and Protein Stoichiometry](#)

excited state

[21.4: Bohr Theory of the Atom](#)

excluded volume

[9.18: Deviations from the Ideal Gas Law](#)

exothermic

[3.6: Thermochemistry](#)

[3.8: Thermochemical Equations](#)

exothermic reaction

[15.11: Bond Enthalpies and Exothermic or Endothermic Reactions](#)

Exponential Notation

[1.3: Handling Large and Small Numbers](#)

extensive property

[1.9: Density](#)

[16.6: Getting Acquainted with Entropy](#)

Extent of a Reaction

[13.6: Calculating the Extent of a Reaction](#)

F

family

[4.3: The Periodic Table](#)

Faraday constant

[17.7: Quantitative Aspects of Electrolysis](#)

fast neutrons

[19.6: Neutron Bombardment](#)

fatty acid

[20.3: The Building Blocks of Biochemistry](#)

fatty acids

[20.5: Nonpolar Lipids](#)

fermentation

[8.14: Alcohols](#)

ferromagnetism

[21.7: Molecular Orbitals](#)

first law of thermodynamics

[15.1: Prelude to Thermodynamics](#)

fission

[19.13: Mass-Energy Relationships](#)

[19.14: Nuclear Fission](#)

flotation

[22.4: Beneficiation](#)

Fluid Flow

[10.7: Viscosity](#)

formal charge

[7.13: Formal Charge and Oxidation Numbers](#)

formula unit

[3.2.1: Cultural Connections- Berthollides- A Challenge to Chemical Stoichiometry](#)

fossil fuel

[8.5: Organic Compounds- Hydrocarbons](#)

[15.12: Fossil Fuels and the Energy Crisis](#)

fraction

[10.22: Distillation](#)

fractional distillation

[8.8: Properties of Alkanes](#)

[10.22: Distillation](#)

Frasch process

[12.7: Group VIA- Chalcogens](#)

free energy

[16.14: The Free Energy](#)

[16.15: Maximum Useful Work](#)

[17.13: Galvanic Cells and Free Energy](#)

Free radical

[7.2: Exceptions to the Octet Rule](#)

freezing point depression

[10.25: Boiling-Point Elevation and Freezing-Point Depression](#)

frequency

[21.2: The Nature of Electromagnetic Radiation](#)

fuel cell

[17.12: Fuel Cells](#)

function

[1.6: Measurements, Quantities, and Unity Factors](#)

[1.10: Conversion Factors and Functions](#)

functional group

[8.13: Organic Compounds-Some Additional Classes](#)

fused silica

[10.8: Amorphous Materials- Glasses](#)

fusion

[19.13: Mass-Energy Relationships](#)

[19.17: Nuclear Fusion](#)

G

galvanic cell

[17.1: Prelude to Electrochemistry](#)

[17.13: Galvanic Cells and Free Energy](#)

gamma radiation

[19.2: Naturally Occurring Radioactivity](#)

gangue

[22.3: Metallurgy](#)

gas

[2.2: Macroscopic Properties and Microscopic Models](#)

gas chromatography

10.23: Chromatography

gas constant

9.10: The Ideal Gas Equation

gas electrode

17.8: Galvanic Cells

Geiger counter

19.10: Instruments for Radiation Detection

genetic code

20.19: Information Storage

geometrical isomer

22.9: Geometry of Complexes

Gibbs Free Energy

16.14: The Free Energy

16.15: Maximum Useful Work

17.13: Galvanic Cells and Free Energy

Glass

10.8: Amorphous Materials- Glasses

globular protein

20.11: Proteins

glycemic index

3.11.4: Foods- Low Glycemic Index Foods and Blood Glucose Concentration

Graham's law

9.16: Kinetic Theory of Gases - Graham's Law of Diffusion

graphite

8.21: Diamond and Graphite

greenhouse effect

21.5: The Spectra of Molecules- Infrared

ground state

21.4: Bohr Theory of the Atom

group

4.3: The Periodic Table

H

Haber Process

3.4: Percent Yield

12.6: Group VA Elements

halogen

4.2: Groups of Related Elements

11.18: Common Oxidizing Agents

12.8: Group VIIA- Halogens

Hard water

12.3: Group II- Alkaline Earths

heat

3.6: Thermochemistry

15.6: Enthalpy

Heat capacity

15.2: Heat Capacities

15.3: Heat Capacity and Microscopic Changes

Hess's law

3.9: Hess' Law

heterogeneous catalysis

18.12: Heterogeneous Catalysis

heterogeneous mixture

1.2: What Chemists Do

hexagonal closest packing

10.5: Closest-Packed Structures

hole

22.2: Metallic Bonding

homogeneous mixture

1.2: What Chemists Do

10.15: Solutions

homonuclear diatomic molecule

21.7: Molecular Orbitals

Hooker cell

17.3: Electrolysis of Brine

Hund's rule

5.13: Atoms Having More Than One Electron

5.15: Beryllium, Boron, Carbon

hydrated cation

14.7: Conjugate Acid-Base Pairs and pH

Hydrated Cations

11.10: Weak Acids

hydration

11.4: Hydration of Ions

Hydration enthalpy

11.4: Hydration of Ions

hydride

8.11: Hydrogen Bonding- Water

hydrocarbon

8.5: Organic Compounds- Hydrocarbons

hydrochloric acid

11.9: Strong Acids and Bases

Hydrogen

20.2: The Elements of Life

hydrogen bomb

19.17: Nuclear Fusion

hydrogen bond

8.11: Hydrogen Bonding- Water

hydrogen bonding

8.12: Ice and Water

Hydrogen peroxide

11.20: Substances Which Are Both Oxidizing and Reducing Agents

hydrogenation

3.4.2: Foods - Vegetable Oil Hydrogenation, Trans Fats, and Percent Yield

hydrolysis

8.18: Esters

14.7: Conjugate Acid-Base Pairs and pH

hydronium ion

11.5: Hydrogen and Hydroxide Ions

11.7: Acids

hydrophilic

20.4: Fats and Lipids

hydrophobic

20.4: Fats and Lipids

hydrous oxide

12.4: Group IIIA

hydroxide

11.9: Strong Acids and Bases

hypertonic

3.11.1: Biology- Solution Concentrations and Cells

hypotonic

3.11.1: Biology- Solution Concentrations and Cells

I

ICE Table

13.6: Calculating the Extent of a Reaction

ideal gas law

9.5: Gas Laws

9.10: The Ideal Gas Equation

9.18: Deviations from the Ideal Gas Law

13.5: The Equilibrium Constant in Terms of Pressure

implode

9.6: Avogadro's Law

impulse

3.3.9: Physics- Rocket Propellants

9.13: Kinetic Theory of Gases- Postulates of the Kinetic Theory

indicator

3.13: Titrations

14.9: Indicators

Indicators

14.1: Prelude to Ionization of Water

inert complex

22.11: Transitional Metal Ions in Aqueous Solutions

infrared spectrum

21.5: The Spectra of Molecules- Infrared

initiation codon

20.19: Information Storage

insulator

22.2: Metallic Bonding

intensive property

1.9: Density

intermediate

18.8: 18.7-Reaction Mechanisms

internal energy

15.4: Internal Energy

International System of Units

1.4: The International System of Units (SI)

inverse proportionality

9.7: Boyle's Law

Ion Exchange

12.3: Group II- Alkaline Earths

ion pair

6.2: Ionic Bonding

ionic bond

6.1: Prelude to Chemical Bonding

ionic compound

6.17: Polyatomic Ions

11.2: Ions in Solution (Electrolytes)

ionic crystal lattice

6.4: The Ionic Crystal Lattice

ionic formula

6.18: Ionic Compounds Containing Polyatomic Ions

Ionic Radius

6.20: Ionic Sizes

ionization energy

6.3: Energy and the Formation of Ions

6.8: Electron Affinities

ionization of water

11.5: Hydrogen and Hydroxide Ions

14.2: Ionization of Water

ionize

6.3: Energy and the Formation of Ions

iron supplements

2.12.3: Foods- Iron Supplements

isotonic

3.11.1: Biology- Solution Concentrations and Cells

isotope

4.12: Isotopes

J

joule

3.7: Energy

K

K

13.3: The Equilibrium Constant

kelvin

9.8: Charles's Law

kernel

5.3: Lewis Diagrams

ketone

[8.16: Aldehydes and Ketones](#)

kinetic energy

[3.7: Energy](#)

[5.5: Wave Mechanics](#)

kinetic molecular theory

[9.13: Kinetic Theory of Gases- Postulates of the Kinetic Theory](#)

kinetic theory

[9.13: Kinetic Theory of Gases- Postulates of the Kinetic Theory](#)

[9.14: Kinetic Theory of Gases- The Total Molecular Kinetic Energy](#)

[9.16: Kinetic Theory of Gases - Graham's Law of Diffusion](#)

KT

[9.13: Kinetic Theory of Gases- Postulates of the Kinetic Theory](#)

L

labeling

[19.12: Uses of Artificial Isotopes](#)

labile complex

[22.11: Transitional Metal Ions in Aqueous Solutions](#)

Lactic Acid Fermentation

[3.9.1: Biology- Anaerobic Fermentation in Beer and Lactic Acid in Muscles](#)

Lagging strand

[20.21: DNA Replication](#)

lanthanoid

[5.17: Electron Configurations and the Periodic Table](#)

lattice enthalpy

[11.4: Hydration of Ions](#)

Lattices

[10.3: Lattices and Unit Cells](#)

Lattices and Unit Cells

[10.3: Lattices and Unit Cells](#)

Law of Chemical Equilibrium

[13.4: The Law of Chemical Equilibrium](#)

law of combining volumes

[9.11: The Law of Combining Volumes](#)

law of conservation of energy

[3.7: Energy](#)

[5.11: Potential Energy](#)

law of conservation of mass

[2.3: The Atomic Theory](#)

law of definite proportions

[2.5: Testing the Atomic Theory](#)

Law of Mass Action

[13.4: The Law of Chemical Equilibrium](#)

Le Chatelier's Principle

[13.9: Le Chatelier's Principle](#)

[13.10: The Effect of a Change in Pressure](#)

[13.11: The Effect of a Change in Temperature](#)

[13.12: Effect of Adding a Reactant or Product](#)

lead storage battery

[17.11: Storage Batteries](#)

leading strand

[20.21: DNA Replication](#)

Lewis Acid

[11.14: Lewis Acids and Bases](#)

Lewis acids and bases

[11.14: Lewis Acids and Bases](#)

Lewis base

[11.14: Lewis Acids and Bases](#)

Lewis diagram

[5.3: Lewis Diagrams](#)

[5.17: Electron Configurations and the Periodic Table](#)

Liebig's law of the minimum

[3.3: The Limiting Reagent](#)

ligand

[22.8: Coordination Compounds](#)

Like Dissolves Like

[10.19: Solubility and Molecular Structure](#)

limiting reactant

[3.3.1: Cultural Connections- Anthropology and Protein Stoichiometry](#)

limiting reagent

[3.3: The Limiting Reagent](#)

line spectrum

[21.3: Atomic Spectra and the Bohr Theory](#)

Linear

[7.3: The Shapes of Molecules](#)

[22.9: Geometry of Complexes](#)

Lipid

[20.4: Fats and Lipids](#)

liquid

[2.2: Macroscopic Properties and Microscopic Models](#)

liquids

[10.1: Prelude to Solids, Liquids and Solutions](#)

[10.6: Liquids](#)

liter

[1.8: Volume](#)

London force

[8.4: London Forces](#)

lone pair

[6.14: Covalent Molecules and the Octet Rule](#)

M

macromolecular substance

[8.20: Macromolecular Substances](#)

macroscopic

[2.1: Prelude to Atoms and Reactions](#)

magnetic quantum number

[5.9: Quantum Numbers \(Electronic\)](#)

manometer

[9.4: Measurement of Pressure](#)

mass

[1.6: Measurements, Quantities, and Unity Factors](#)

mass fraction

[10.18: Measuring the Composition of a Solution](#)

mass number

[4.11: Atomic Structure and Isotopes](#)

mass percentage

[10.18: Measuring the Composition of a Solution](#)

mass spectrometry

[4.15: Measurement of Atomic Weights](#)

measurement

[1.2: What Chemists Do](#)

[16.12: Measuring the Entropy](#)

mechanism

[18.8: 18.7-Reaction Mechanisms](#)

melting

[10.9: Phase Transitions](#)

membrane protein

[20.11: Proteins](#)

messenger RNA

[20.22: Transcription and Translation](#)

metal

[6.7: Ionization of Transition and Inner Transition Elements](#)

[11.19: Common Reducing Agents](#)

metallic bonding

[22.2: Metallic Bonding](#)

metalloid

[6.7: Ionization of Transition and Inner Transition Elements](#)

[22.1: Prelude to Metals](#)

Micelle

[20.5: Nonpolar Lipids](#)

microscopic

[2.1: Prelude to Atoms and Reactions](#)

milliliter

[1.8: Volume](#)

miscibility

[10.17: Miscibility](#)

miscible

[10.17: Miscibility](#)

mixture

[1.2: What Chemists Do](#)

mobile phase

[10.23: Chromatography](#)

molar kinetic energy

[9.14: Kinetic Theory of Gases- The Total Molecular Kinetic Energy](#)

molar mass

[2.11: The Molar Mass](#)

molar quantity

[2.11: The Molar Mass](#)

molar ratio

[3.2.4: Food- Let's Cook!](#)

molar volume

[9.6: Avogadro's Law](#)

molarity

[3.11: Solution Concentrations](#)

mole

[2.7: The Amount of Substance- Moles](#)

[2.8: The Mole](#)

mole fraction

[10.18: Measuring the Composition of a Solution](#)

molecular formula

[2.12: Formulas and Composition](#)

Molecular Geometry

[7.3: The Shapes of Molecules](#)

[7.5: Multiple Bonds and Molecular Shapes](#)

molecular orbital

[21.6: The Visible and Ultraviolet Spectra of Molecules- Molecular Orbitals](#)

[21.7: Molecular Orbitals](#)

molecular orbital theory

[21.7: Molecular Orbitals](#)

molecular spectrum

[21.5: The Spectra of Molecules- Infrared](#)

[21.6: The Visible and Ultraviolet Spectra of Molecules- Molecular Orbitals](#)

Molecular Speed

[9.17: Kinetic Theory of Gases- The Distribution of Molecular Speeds](#)

Molecular Structure

[10.19: Solubility and Molecular Structure](#)

molecular weight

[2.6: Atomic Weights](#)

molecule

- 1.2: What Chemists Do
- 2.3: The Atomic Theory
- 2.3.1: Foods- Elemental Diets

Monosaccharide

- 20.8: Simple Sugars

mRNA

- 20.22: Transcription and Translation

multiple bond

- 6.16: Examples of Lewis Structures
- 7.5: Multiple Bonds and Molecular Shapes

N

negative overlap

- 21.7: Molecular Orbitals

Nernst Equation

- 17.14: Cells at Non-Standard Conditions

net ionic equation

- 11.3: Precipitation Reactions

network crystal

- 3.2.1: Cultural Connections- Berthollides- A Challenge to Chemical Stoichiometry

neutral solution

- 11.5: Hydrogen and Hydroxide Ions

neutralization

- 11.6: Acid-Base Reactions

neutron

- 4.11: Atomic Structure and Isotopes

neutron bombardment

- 19.16: Breeder Reactors

Newton

- 9.3: Pressure

Nitrogen

- 12.6: Group VA Elements
- 20.2: The Elements of Life

nitrogen fixation

- 12.6: Group VA Elements

noble gas

- 4.2: Groups of Related Elements
- 12.9: Group VIIIA- Noble Gases

node

- 5.4: The Wave Nature of the Electron
- 5.6: The Uncertainty Principle

nonactin

- 22.10: Chelating Agents

nonelectrolyte

- 11.2: Ions in Solution (Electrolytes)

nonpolar lipid

- 20.4: Fats and Lipids

nonspontaneous process

- 16.2: Spontaneous Processes and Molecular Probability

normal alkanes

- 8.6: Alkanes

normal boiling point

- 10.12: Boiling Point

nuclear equation

- 19.2: Naturally Occurring Radioactivity

nuclear reaction

- 4.13: Transmutation and Radioactivity
- 19.1: Prelude to Nuclear Chemistry

Nuclear Reactor

- 19.15: Nuclear Power Plants

Nucleic acid

- 20.17: Nucleic Acids

nucleoside

- 20.18: Nucleic Acid Structure

nucleotide

- 20.3: The Building Blocks of Biochemistry
- 20.18: Nucleic Acid Structure

nuclidic mass

- 4.12: Isotopes

O

Octahedral

- 7.3: The Shapes of Molecules
- 22.9: Geometry of Complexes

octet

- 6.10: The Octet Rule

octet rule

- 6.1: Prelude to Chemical Bonding
- 6.10: The Octet Rule
- 7.2: Exceptions to the Octet Rule

optical isomer

- 8.8: Properties of Alkanes

orbital

- 5.8: Orbitals
- 5.9: Quantum Numbers (Electronic)

ore

- 22.3: Metallurgy

osmosis

- 10.26: Osmotic Pressure

osmotic pressure

- 10.26: Osmotic Pressure

oxidant

- 11.15: Redox Reactions

oxidation number

- 7.13: Formal Charge and Oxidation Numbers
- 11.16: Oxidation Numbers and Redox Reactions

Oxidation State

- 11.16: Oxidation Numbers and Redox Reactions

oxidizing agent

- 11.15: Redox Reactions
- 11.18: Common Oxidizing Agents

Oxidizing and Reducing Agents

- 11.20: Substances Which Are Both Oxidizing and Reducing Agents

oxyacid

- 11.9: Strong Acids and Bases
- 11.18: Common Oxidizing Agents

oxyanion

- 11.18: Common Oxidizing Agents

Oxygen

- 11.18: Common Oxidizing Agents
- 20.2: The Elements of Life

P

Paper Chromatography

- 10.23: Chromatography

paramagnetism

- 5.9: Quantum Numbers (Electronic)
- 21.7: Molecular Orbitals

Parameter

- 1.6: Measurements, Quantities, and Unity Factors
- 1.10: Conversion Factors and Functions

partial covalent character

- 7.9: Polarizability

partial pressure

- 9.12: Dalton's Law of Partial Pressures
- 13.5: The Equilibrium Constant in Terms of Pressure

partially miscible

- 10.17: Miscibility

parts per billion

- 10.18: Measuring the Composition of a Solution

Parts per million

- 10.18: Measuring the Composition of a Solution

pascal

- 9.3: Pressure

Pauli exclusion principle

- 5.13: Atoms Having More Than One Electron

Peptide bond

- 20.12: Polypeptide Chains

percent composition

- 2.12: Formulas and Composition

percent yield

- 3.4: Percent Yield

period

- 4.3: The Periodic Table

periodic law

- 4.3: The Periodic Table

periodic table

- 4.3: The Periodic Table
- 5.17: Electron Configurations and the Periodic Table

Periodic Trend

- 6.6: Ionization Energies

PET scan

- 4.13: Transmutation and Radioactivity

petroleum refining

- 8.8: Properties of Alkanes

pH

- 14.1: Prelude to Ionization of Water
- 14.3: pH and pOH
- 14.4: The pH of Solutions of Weak Acids
- 14.5: The pH of Solutions of Weak Bases
- 14.7: Conjugate Acid-Base Pairs and pH
- 14.9: Indicators

pH of Solutions of Weak Acids

- 14.4: The pH of Solutions of Weak Acids

pH of Solutions of Weak Bases

- 14.5: The pH of Solutions of Weak Bases

phase diagram

- 10.14: Phase Diagrams

Phase transition

- 10.9: Phase Transitions

photochemical smog

- 12.6: Group VA Elements

photodissociation

- 21.7: Molecular Orbitals

photon

- 5.4: The Wave Nature of the Electron
- 5.6: The Uncertainty Principle

photosynthesis

- 15.13: Photosynthesis

physical process

- 1.2: What Chemists Do

physical property

- 6.11: Physical Properties

pi bond

- 7.8: Sigma and Pi Bonds

Planck's constant

- 5.4: The Wave Nature of the Electron
- 21.2: The Nature of Electromagnetic Radiation

plasma

- 19.17: Nuclear Fusion

pOH

- 14.1: Prelude to Ionization of Water
- 14.3: pH and pOH

polar covalent bond

- 7.10: Polar Covalent Bonds
- 7.12: Polarity in Polyatomic Molecules

polar covalent bonds

- 7.9.1: Biology - Polarizability of Biologically Significant Atoms

polar lipid

- 20.4: Fats and Lipids
- 20.6: Polar Lipids

polarizability

- 7.9: Polarizability

Polarization

- 7.9: Polarizability

polyatomic ion

- 6.17: Polyatomic Ions

polyatomic molecule

- 7.12: Polarity in Polyatomic Molecules

Polymer

- 8.23: Synthetic Macromolecules- Some Applied Organic Chemistry

polyprotic acid

- 14.6: Polyprotic Acids and Bases

polyprotic base

- 14.6: Polyprotic Acids and Bases

Polysaccharide

- 20.10: Polysaccharides

Polyurethane

- 8.26: Cross-Linking

pore

- 9.2: Property of Gases

Positron

- 19.7: Further Modes of Decay - Positron Emission and Electron Capture

positron emission

- 19.7: Further Modes of Decay - Positron Emission and Electron Capture

Postulates of the Kinetic Theory

- 9.13: Kinetic Theory of Gases- Postulates of the Kinetic Theory

Potential Energy

- 3.7: Energy
- 5.11: Potential Energy

ppb

- 10.18: Measuring the Composition of a Solution

ppm

- 10.18: Measuring the Composition of a Solution

precipitation

- 11.3: Precipitation Reactions

Precipitation reaction

- 11.1: Prelude to Aqueous Phase Reactions

precision

- 1.3: Handling Large and Small Numbers
- 1.7: Errors in Measurement

pressure

- 9.3: Pressure

primary structure

- 20.14: Primary Protein Structure

principal quantum number

- 5.8: Orbitals
- 5.9: Quantum Numbers (Electronic)

Probability

- 16.3: Atoms, Molecules, and Probability

probability factor

- 13.13: The Molecular View of Equilibrium
- 16.16: Equilibrium Constants Revisited

projection formulas

- 8.6: Alkanes

prosthetic groups

- 20.11: Proteins

protein

- 20.11: Proteins

proton

- 4.11: Atomic Structure and Isotopes

proton acceptor

- 11.8: Bases

pure substance

- 1.2: What Chemists Do

Q

Quantitative Analysis

- 2.12: Formulas and Composition
- 17.7: Quantitative Aspects of Electrolysis

quantity

- 1.6: Measurements, Quantities, and Unity Factors

Quantization

- 5.5: Wave Mechanics

quantum mechanics

- 5.5: Wave Mechanics

quartz

- 8.22: Silicon Dioxide

quaternary structure

- 20.16: Higher-Order Structure

R

radiation absorbed dose

- 19.11: Units of Radiation Dose

radioactive

- 4.8: Radiation

radioactive series

- 19.3: Radioactive Series

radioactivity

- 4.8: Radiation

randomness

- 16.11: Entropy, Randomness, and Disorder

rate equation

- 18.3: The Rate Equation

rate law

- 18.3: The Rate Equation
- 18.11: Catalysis

reaction coordinate

- 18.6: Bimolecular Processes

reaction direction

- 13.8: Predicting the Direction of a Reaction

Reaction Quotient

- 13.8: Predicting the Direction of a Reaction

reaction rate

- 16.4: Rates of Spontaneous Processes
- 18.2: The Rate of Reaction
- 18.4: Microscopic View of Chemical Reactions
- 18.9: 18.8-Increasing the Rate of a Reaction

Reactions in Aqueous Solutions

- 14.1: Prelude to Ionization of Water

reading frame

- 20.19: Information Storage

reagent

- 3.2.4: Food- Let's Cook!

real gases

- 9.18: Deviations from the Ideal Gas Law

recrystallization

- 2.12: Formulas and Composition

Redox

- 11.15: Redox Reactions

redox couple

- 11.21: Redox Couples

Redox in Acid Solution

- 11.17: Balancing Redox Equations

Redox in Basic Solution

- 11.17: Balancing Redox Equations

redox reaction

- 7.13: Formal Charge and Oxidation Numbers
- 11.1: Prelude to Aqueous Phase Reactions
- 11.15: Redox Reactions
- 11.16: Oxidation Numbers and Redox Reactions
- 11.17: Balancing Redox Equations

reducing agent

- 11.19: Common Reducing Agents

reducing sugar

- 11.15: Redox Reactions

reductant

- 11.15: Redox Reactions

reduction

- 22.3: Metallurgy
- 22.5: Reduction of Metals

refining

- 17.5: Refining of Copper
- 22.3: Metallurgy

relative atomic mass

- 4.14: Average Atomic Weights

replication

- 20.21: DNA Replication

representative element

- 5.17: Electron Configurations and the Periodic Table

resonance hybrid

- 7.14: Resonance

respiration

- 15.13: Photosynthesis

ribosome

- 20.22: Transcription and Translation

roentgen equivalent man

- 19.11: Units of Radiation Dose

root mean square velocity

- 9.15: Kinetic Theory of Gases- Molecular Speeds

rust

- 22.7: Corrosion

S

Sabatier Process

- 8.6.3: Cultural Connections- Rockets

salt

- 12.8: Group VIIA- Halogens
- 20.3: The Building Blocks of Biochemistry

salt bridge

- 17.8: Galvanic Cells

sample injector

- 10.23: Chromatography

saponification

- 20.5: Nonpolar Lipids

saturated

- 10.16: Saturated and Supersaturated Solutions

scale

- 1.6: Measurements, Quantities, and Unity Factors

Schrödinger wave equation

5.7: Electron Waves in the Hydrogen Atom

scientific notation

1.3: Handling Large and Small Numbers

scintillation counter

19.10: Instruments for Radiation Detection

screening

5.14: Hydrogen, Helium, Lithium

Second ionization energy

6.5: Ions and Noble-Gas Electron Configurations

Second Law of Thermodynamics

16.5: Thermodynamic Probability W and Entropy

secondary structure

20.15: Secondary Protein Structure

semiconductor

22.2: Metallic Bonding

semimetal

6.7: Ionization of Transition and Inner Transition Elements

22.1: Prelude to Metals

semipermeable membrane

10.26: Osmotic Pressure

Separation of Mixtures

10.21: The Separation of Mixtures

shell

5.2: Electrons and Valence

5.15: Beryllium, Boron, Carbon

shielding

5.14: Hydrogen, Helium, Lithium

SI units

1.4: The International System of Units (SI)

side chain

20.13: The Amino Acids

sigma bond

7.8: Sigma and Pi Bonds

significant figures

1.7: Errors in Measurement

silicon dioxide

10.8: Amorphous Materials- Glasses

silicone

12.5: Group IVA

siloxane

12.5: Group IVA

simple protein

20.11: Proteins

skeleton structure

6.15: Writing Lewis Structures for Molecules

skeleton structure

6.16: Examples of Lewis Structures

Slaking

12.3: Group II- Alkaline Earths

slow neutrons

19.6: Neutron Bombardment

sodium hydroxide

11.9: Strong Acids and Bases

solid

2.2: Macroscopic Properties and Microscopic Models

Solids

10.1: Prelude to Solids, Liquids and Solutions

10.2: Solids

Solids, Liquids, and Gases

10.9: Phase Transitions

Solids, Liquids, and Solutions

10.1: Prelude to Solids, Liquids and Solutions

solubility

10.16: Saturated and Supersaturated Solutions

10.19: Solubility and Molecular Structure

14.11: The Solubility Product

14.12: The Common-Ion Effect

14.13: The Solubilities of Salts of Weak Acids

solubility product

14.11: The Solubility Product

14.12: The Common-Ion Effect

solubility rules

11.3: Precipitation Reactions

solute

3.11: Solution Concentrations

solution

3.11: Solution Concentrations

solutions

10.1: Prelude to Solids, Liquids and Solutions

10.15: Solutions

Solvay process

12.2: Group IA - Alkali Metals

solvent

3.11: Solution Concentrations

sp hybrid orbital

7.6: Hybrid Orbitals

sp² hybrid orbital

7.6: Hybrid Orbitals

sp³ hybrid orbital

7.6: Hybrid Orbitals

sp³d hybrid orbital

7.6: Hybrid Orbitals

sp³d² hybrid orbital

7.6: Hybrid Orbitals

specific heat capacity

15.2: Heat Capacities

spectator ions

11.3: Precipitation Reactions

spectroscope

21.3: Atomic Spectra and the Bohr Theory

spectrum

21.1: Prelude to Spectroscopy

spin quantum number

5.9: Quantum Numbers (Electronic)

spontaneous process

16.2: Spontaneous Processes and Molecular Probability

square planar

22.9: Geometry of Complexes

standard atmosphere

9.3: Pressure

Standard Enthalpy of Formation

3.10: Standard Enthalpies of Formation

standard free energy of formation

16.14: The Free Energy

standard molar entropy

16.7: Standard Molar Entropies

standard pressure

15.9: Standard Pressure

standard reduction potential

17.10: Electromotive Force of Galvanic Cells

standard temperature and pressure

9.6: Avogadro's Law

standing wave

5.4: The Wave Nature of the Electron

state

15.5: Thermodynamic Terms and Conventions

state function

15.8: State Functions

stationary phase

10.23: Chromatography

Steel

22.6: Refining of Metals

Steric Factor

18.6: Bimolecular Processes

stock solution

3.12: Diluting and Mixing Solutions

stoichiometric concentration

14.4: The pH of Solutions of Weak Acids

stoichiometric factor

3.2: Equations and Mass Relationships

stoichiometric ratio

3.2: Equations and Mass Relationships

stoichiometry

3.2: Equations and Mass Relationships

3.2.1: Cultural Connections- Bertholides- A Challenge to Chemical Stoichiometry

storage battery

17.11: Storage Batteries

STP

9.6: Avogadro's Law

stress

13.10: The Effect of a Change in Pressure

13.12: Effect of Adding a Reactant or Product

strong acid

11.9: Strong Acids and Bases

strong base

11.9: Strong Acids and Bases

strong electrolyte

11.2: Ions in Solution (Electrolytes)

structural formula

3.5: Analysis of Compounds

subatomic particle

4.11: Atomic Structure and Isotopes

subshell

5.15: Beryllium, Boron, Carbon

successive approximation

13.7: Successive Approximation

sugar

20.3: The Building Blocks of Biochemistry

20.7: Carbohydrates

20.8: Simple Sugars

20.9: Disaccharides

20.10: Polysaccharides

sulfuric acid

11.9: Strong Acids and Bases

supercritical fluid

10.14: Phase Diagrams

supersaturated

10.16: Saturated and Supersaturated Solutions

surface catalysis

18.12: Heterogeneous Catalysis

surroundings

16.13: Including the Surroundings

suspension

10.15: Solutions

10.27: Colloids

system

15.5: Thermodynamic Terms and Conventions

T

temperature

13.11: The Effect of a Change in Temperature

Temperature and Equilibrium

13.11: The Effect of a Change in Temperature

template strand

20.22: Transcription and Translation

termination codon

20.19: Information Storage

termolecular process

18.7: Termolecular Processes

tertiary structure

20.16: Higher-Order Structure

Tetrahedral

7.3: The Shapes of Molecules

22.9: Geometry of Complexes

The Solubilities of Salts of Weak Acids

14.13: The Solubilities of Salts of Weak Acids

theoretical yield

3.4: Percent Yield

thermochemical equation

3.8: Thermochemical Equations

13.11: The Effect of a Change in Temperature

thermochemistry

3.6: Thermochemistry

thermodynamic probability

16.5: Thermodynamic Probability W and Entropy

Third Law of Thermodynamics

16.6: Getting Acquainted with Entropy

Thorium Series

19.3: Radioactive Series

titrant

3.13: Titrations

14.10: Titration Curves

Titration

3.13: Titrations

14.10: Titration Curves

titration curve

14.10: Titration Curves

Total Molecular Kinetic Energy

9.14: Kinetic Theory of Gases- The Total Molecular Kinetic Energy

trace element

20.3: The Building Blocks of Biochemistry

tracer study

19.12: Uses of Artificial Isotopes

trans configuration

7.7: Orbital Descriptions of Multiple Bonds

8.10: Unsaturated Hydrocarbons

transcription

20.22: Transcription and Translation

transfer RNA

20.19: Information Storage

20.22: Transcription and Translation

transition element

5.17: Electron Configurations and the Periodic Table

transition metal

5.17: Electron Configurations and the Periodic Table

transition state

18.5: Unimolecular Processes

translation

20.22: Transcription and Translation

translational motion

15.3: Heat Capacity and Microscopic Changes

transmutation

4.8: Radiation

4.13: Transmutation and Radioactivity

Triglyceride

3.2.3: Everyday Life- Why Fats Don't Add Up on Food Nutrition Labels

3.4.2: Foods - Vegetable Oil Hydrogenation, Trans Fats, and Percent Yield

trigonal bipyramidal

7.3: The Shapes of Molecules

Trigonal Planar

7.3: The Shapes of Molecules

trigonal pyramidal

7.4: Molecules with Lone Pairs

triple bond

6.15.3: Multiple Bonds

triple point

10.14: Phase Diagrams

triprotic acid

11.10: Weak Acids

tRNA

20.19: Information Storage

20.22: Transcription and Translation

Trouton's rule

10.10: Enthalpy of Fusion and Enthalpy of Vaporization

U

uncertainty principle

5.6: The Uncertainty Principle

unimolecular

18.5: Unimolecular Processes

unit cells

10.3: Lattices and Unit Cells

10.4: Crystal Systems

unity factor

1.6: Measurements, Quantities, and Unity Factors

1.9: Density

universal indicator

14.9: Indicators

unsaturated compound

8.10: Unsaturated Hydrocarbons

unsaturated hydrocarbon

8.5: Organic Compounds- Hydrocarbons

unshared pair

6.14: Covalent Molecules and the Octet Rule

V

valence

4.4: Valence

valence electron

5.2: Electrons and Valence

5.17: Electron Configurations and the Periodic Table

van der Waals force

8.4: London Forces

van der Waals radius

6.19: Atomic Sizes

vapor pressure

9.12: Dalton's Law of Partial Pressures

10.11: Vapor-Liquid Equilibrium

10.12: Boiling Point

virial theorem

5.12: Electron Density and Potential Energy

6.13: The Covalent Bond

viscosity

10.7: Viscosity

vitamin

20.3: The Building Blocks of Biochemistry

volt

17.10: Electromotive Force of Galvanic Cells

voltaic cell

17.1: Prelude to Electrochemistry

volume

1.8: Volume

W

Water

11.5: Hydrogen and Hydroxide Ions

11.20: Substances Which Are Both Oxidizing and Reducing Agents

20.3: The Building Blocks of Biochemistry

wave mechanics

5.5: Wave Mechanics

wavelength

5.4: The Wave Nature of the Electron

weak acid

11.10: Weak Acids

14.4: The pH of Solutions of Weak Acids

14.13: The Solubilities of Salts of Weak Acids

weak base

11.11: Weak Bases

14.5: The pH of Solutions of Weak Bases

weak electrolyte

11.2: Ions in Solution (Electrolytes)

weak oxyacid

11.10: Weak Acids

weight

1.6: Measurements, Quantities, and Unity Factors

9.3: Pressure

Weight percentage

10.18: Measuring the Composition of a Solution

work

16.15: Maximum Useful Work

Z

zwitterion

11.12: Amphiprotic Species