clone an organism that is produced by asexual reproduction and that is genetically identical to its parent; to make a genetic duplicate (775)

coefficient a small whole number that appears as a factor in front of a formula in a chemical equation (263)

colligative property a property that is determined by the number of particles present in a system but that is independent of the properties of the particles themselves (446)

collision theory the theory that states that the number of new compounds formed in a chemical reaction is equal to the number of molecules that collide, multiplied by a factor that corrects for low-energy collisions (562)

colloid a mixture consisting of tiny particles that are intermediate in size between those in solutions and those in suspensions and that are suspended in a liquid, solid, or gas (403)

combined gas law the relationship between the pressure, volume, and temperature of a fixed amount of gas (374)

combustion reaction the oxidation reaction of an element or compound, in which energy as heat is released (283)

common-ion effect the phenomenon in which the addition of an ion common to two solutes brings about precipitation or reduces ionization (603)

composition stoichiometry calculations involving the mass relationships of elements in compounds (299)

compound a substance made up of atoms of two or more different elements joined by chemical bonds (7)

concentration the amount of a particular substance in a given quantity of a mixture, solution, or ore (418)

condensation the change of state from a gas to a liquid (342)

condensation reaction a chemical reaction in which two or more molecules combine to produce water or another simple molecule (736, 752)

conjugate acid an acid that forms when a base gains a proton (483)

conjugate base a base that forms when an acid loses a proton (483)

continuous spectrum the uninterrupted broad band of all colors (wavelengths) emitted by incandescent solids (100)

control rod a neutron-absorbing rod that helps control a nuclear reaction by limiting the number of free neutrons (698)

conversion factor a ratio that is derived from the equality of two different units and that can be used to convert from one unit to the other (40)

copolymer a polymer made from two different monomers (737)

covalent bond a bond formed when atoms share one or more pairs of electrons (175)

critical mass the minimum mass of a fissionable isotope that provides the number of neutrons needed to sustain a chain reaction (698)

critical point the temperature and pressure at which the gas and liquid states of a substance become identical and form one phase (347)

critical pressure the lowest pressure at which a substance can exist as a liquid at the critical temperature (348)

critical temperature the temperature above which a substance cannot exist in the liquid state (347)

crystal a solid whose atoms, ions, or molecules are arranged in a definite pattern (338)

crystal structure the arrangement of atoms, ions, or molecules in a regular way to form a crystal (339)

crystalline solid a solid that consists of crystals (338)

cycloalkane a saturated carbon chain that forms a loop or a ring (718)

D

Dalton's law of partial pressures the law that states that the total pressure of a mixture of gases is equal to the sum of the partial pressures of the component gases (365)

daughter nuclide a nuclide produced by the radioactive decay of another nuclide (690)

decay series a series of radioactive nuclides produced by successive radioactive decay until a stable nuclide is reached (690)

decomposition reaction a reaction in which a single compound breaks down to form two or more simpler substances (279)

denature to change irreversibly the structure or shape—and thus the solubility and other properties—of a protein by heating, shaking, or treating the protein with acid, alkali, or other species (764)

density the ratio of the mass of a substance to the volume of the substance; often expressed as grams per cubic centimeter for solids and liquids and as grams per liter for gases (38)

deposition the change of state from a gas directly to a solid (346)

derived unit a unit of measure that is a combination of other measurements (36)

diffusion the movement of particles from regions of higher density to regions of lower density (331)

dimensional analysis a mathematical technique for studying dimensions of physical quantities (40)

dipole a molecule or a part of a molecule that contains both positively and negatively charged regions (204)

diprotic acid an acid that has two ionizable hydrogen atoms in each molecule, such as sulfuric acid (480)

direct proportion the relationship between two variables whose ratio is a constant value (55)

disaccharide a sugar formed from two monosaccharides (752)

disproportionation the process by which a substance is transformed into two or more dissimilar substances, usually by simultaneous oxidation and reduction (645)

dissociation the separating of a molecule into simpler molecules, atoms, radicals, or ions (435)

DNA replication the process of making a copy of DNA (772)