

sublimation the process in which a solid changes directly into a gas (the term is sometimes also used for the reverse process) (346)

substitution reaction a reaction in which one or more atoms replace another atom or group of atoms in a molecule (735)

supercooled liquid a liquid that is cooled below its normal freezing point without solidifying (338)

supersaturated solution a solution that holds more dissolved solute than is required to reach equilibrium at a given temperature (409)

surface tension the force that acts on the surface of a liquid and that tends to minimize the area of the surface (335)

suspension a mixture in which particles of a material are more or less evenly dispersed throughout a liquid or gas (403)

synthesis reaction a reaction in which two or more substances combine to form a new compound (276)

system a set of particles or interacting components considered to be a distinct physical entity for the purpose of study (29)

T

temperature a measure of how hot (or cold) something is; specifically, a measure of the average kinetic energy of the particles in an object (531)

theoretical yield the maximum amount of product that can be produced from a given amount of reactant (317)

theory an explanation for some phenomenon that is based on observation, experimentation, and reasoning (31)

thermochemical equation an equation that includes the quantity of energy as heat released or absorbed during the reaction as written (535)

thermochemistry the branch of chemistry that is the study of the energy changes that accompany chemical reactions and changes of state (531)

titration a method to determine the concentration of a substance in solution by adding a solution of known volume and concentration until the reaction is completed, which is usually indicated by a change in color (515)

transition element one of the metals that can use the inner shell before using the outer shell to bond (144)

transition interval the range in concentration over which a variation in a chemical indicator can be observed (512)

transmutation the transformation of atoms of one element into atoms of a different element as a result of a nuclear reaction (684)

transuranium element a synthetic element whose atomic number is greater than that of uranium (atomic number 92) (692)

triple point the temperature and pressure conditions at which the solid, liquid, and gaseous phases of a substance coexist at equilibrium (347)

triprotic acid an acid that has three ionizable protons per molecule, such as phosphoric acid (480)

U

unit cell the smallest portion of a crystal lattice that shows the three-dimensional pattern of the entire lattice (339)

unsaturated hydrocarbon a hydrocarbon that has available valence bonds, usually from double or triple bonds with carbon (724)

unsaturated solution a solution that contains less solute than a saturated solution does and that is able to dissolve additional solute (409)

V

valence electron an electron that is found in the outermost shell of an atom and that determines the atom's chemical properties (160)

vaporization the process by which a liquid or solid changes to a gas (335)

volatile liquid a liquid that evaporates readily or at a low temperature (343)

voltaic cell a primary cell that consists of two electrodes made of different metals immersed in an electrolyte; used to generate voltage (658)

volume a measure of the size of a body or region in three-dimensional space (37)

VSEPR theory a theory that predicts some molecular shapes based on the idea that pairs of valence electrons surrounding an atom repel each other (197)

W

wavelength the distance from any point on a wave to an identical point on the next wave (97)

weak acid an acid that releases few hydrogen ions in aqueous solution (474)

weak electrolyte a compound that dissociates only to a small extent in aqueous solution (443)

weight a measure of the gravitational force exerted on an object; its value can change with the location of the object in the universe (35)

word equation an equation in which the reactants and products in a chemical reaction are represented by words (263)